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The Role of Macroprudential Policy Instruments on Credit Distribution in Indonesia

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Abstract
One of the objectives of the macroprudential policy instrument is to reduce the procyclicality of bank credit growth. This study aims to analyze the Bank Indonesia macroprudential policy in controlling property loans. The research variables consist of independent variables, namely loan to value (LTV) as dummy variables, consumption loan interest rates, GDP and LTV as interaction variables with consumer loans and the dependent variable, namely property loans. The research method uses panel data regression analysis. The data used in this study are secondary data for the period 2009 - 2018. The results show that the fixed effect model is the right model for analyzing whether macroprudential policy instruments (LTV) are able to control property credit.

Keywords: Macroprudential, Property Loans, Loan to Value, Proxyclicality, GDP

1. Introduction

The global economic and financial crisis teaches that macroeconomic stability is not only possible by maintaining low and stable inflation and a stable exchange rate and it supports Indonesia's international trade. This is because macroeconomic instability increasingly originated from the disruption of the balance that occurs in the financial sector (Bank Indonesia, 2014). The crisis that occurred in the United States in 2008, and then spread to various countries in the world shows that instability in the financial sector has a serious impact on the real sector (Agung, 2010).

Based on the 2018 Indonesian Economic Report, the momentum of Indonesia's economic recovery continued in 2018. Economic growth in 2018 was recorded at 5.17%, an increase compared to the previous year's growth of 5.07% and was the highest growth since 2013. In general, the performance showed that the Indonesian economy remains solid, considering that at the same time world economic growth in 2018 is on a slowing trend and global uncertainties are on the rise. The increase in economic growth in 2018 is inseparable from the positive impact of the policy mix adopted by Bank Indonesia and the Government in responding to global uncertainty. On the one hand, monetary policy responses that are pre-emptive, front-loading, and ahead of the curve to maintain economic stability, especially the exchange rate, as well as the government's commitment to maintain the prospect of scale sustainability, give confidence to economic actors to expand their businesses. On the other hand, accommodative policy directions from central-regional fiscal policies, including spending on infrastructure

projects, financial market deepening policies, macroprudential policies, payment system policies, and structural policies provide stimulus for economic activity. The implementation of these policies, in turn, encourages continued business activity and increased economic growth (Indonesian Economic Report, 2018).

Macroprudential policy has long been an integral part of Bank Indonesia policy. The development of macroprudential policy at the international level has been relatively new and has been widely discussed in recent times. The term macroprudential policy has only come to the forefront and had become a concern since the 2008 global financial crisis. However, the application of macroprudential policy instruments has been carried out in various countries to address specific aspects of systemic risk without calling it a macroprudential policy (Unsal, 2011). Basically the implementation of macroprudential policy has to consider several principles, namely (1) macroprudential policy is not a substitute for monetary policy, but rather complementary to monetary policy (Beau et al., 2012; Hallet et al., 2011; Hanson et.al, 2005); (2) macroprudential policy measures must have clear targets, for example to limit short-term capital flows and limit credit to the property sector (Bank of England, 2009, Unsal, 2011), (3) macroprudential policy must be implemented effectively (Agung, 2010, Nicolo dan Lev, 2012). The problem that occurs in the banking world, from the four principles in the implementation of macroprudential policy, is the second principle, which is to limit credit to the property sector. This is due to the high demand for property sector loans that can disrupt the financial system's stability, encourage high-interest rates on bad loans, and slow economic growth. Indonesia pursued an accommodative macroprudential policy to maintain the momentum of economic growth, while consistently maintaining financial system stability. Kannan and Alasdair (2012) analyzed monetary and macroprudential policy rules in a model with house price booms. Using a dynamic stochastic general equilibrium (DSGE) model with housing, this paper shows that strong monetary reactions to accelerating mechanisms that push up credit growth and house prices can help macroeconomic stability. In addition, using a macroprudential instrument specifically designed to dampen credit market cycles would also provide stabilization benefits when an economy faces financial sector or housing demand shocks. However, the optimal macroprudential rule under productivity shocks is not to intervene. Therefore, according to this research, it is crucial to understand the source of house price booms for the design of monetary and macroprudential policy.

One of the macroprudential policy instruments relating to controlling home ownership loans and property-backed consumption loans is the loan to value (LTV) policy. In Islamic banking, the term loan to value is better known as financing to value. LTV ratio is the ratio between the value of credit that can be given by the collateral value in the form of property at the time of granting credit based on the last assessment (Bank Indonesia Circular Letter, No. 15/40/DKMP). The purpose of the LTV policy is to anticipate or prevent the emergence of bad credit (creditors default) which if left unchecked will affect the economic stability, prevent price increases that do not reflect the actual prices, better known as economic bubbles (Saraswati, 2014).

Saputra (2016) analyzed macroprudential policy instruments in mitigating credit risk in Indonesia using credit growth variables as the dependent variable, BI Rate, GDP, real exchange rate, Capital Buffer, GWMLDR (reserve requirement) as independent variables. Suriani (2016) conducted macroprudential policy analysis determined by Bank Indonesia through the Loan to Value (LTV), Loan to Deposit Ratio (LDR) instruments for commercial bank credit in Aceh Province, as the controlling variable is GDP. Tayler and Ziberman (2016) studied the role of macroprudentials related to bank capital regulation and monetary policy in channel model borrowing costs with endogenous financial friction, driven by credit risk, bank losses and bank capital costs in the UK. This friction causes a financial accelerator mechanism and motivates the examination of macroprudential instruments. After credit shocks, countercyclical regulation is more effective than monetary policy in promoting price, financial and macroeconomic stability. When supply shocks occur, merging macroprudential regulations with strengthening the anti-inflation policy stance will be more optimal. This finding emphasizes the importance of the Basel III agreement in reducing the output-inflation trade-off faced by the central bank, and raises doubts about the conventional (and unconventional) desires of the Taylor government during a period of financial difficulties. Nuryana (2017) examine the assessment of the effectiveness of macroprudential instruments in reducing bank credit risk in Indonesia. The results showed that simultaneous Capital Buffer and Reserves Requirement (GWM) LDR significantly influence credit risk. Partially Capital

Buffer has an effect on credit risk, while the LDR GWM has no effect on credit risk. Dana (2018) studied how to evaluate macro-prudential policy in mitigating risk on procyclical credit growth with a registry data approach. Structural Vector Autoregression (SVAR) analysis method is used to evaluate macro- prudential policy in influencing credit growth. The results showed that LTV instruments can reduce credit growth but not to procyclical mitigation. Dissimilar results in the implementation of CCB and GWM + LDR instruments are capable of procyclical credit mitigation. Policies that can be implemented by the central bank are the establishment of early warning system in macro- prudential policy as well as strengthening of Countercyclical Buffer (CCB), Loan to Value (LTV) instruments and Minimum Reserve Requirement + Loan Funding Ratio (GWM + LFR) in capturing systemic risks from various sources which further strengthens the assessment and surveillance.

The purpose of this study is to find the right model to analyze the role of macroprudential policy and analyze the effect of macroprudential policy on the distribution of property loans so as to explain the role of macroprudential policy. This study adopted the Ardely and Syofyan research model (2016), but the research period was expanded from 2009 to 2018.

2. Method

The data in this study are secondary data from 4 bank groups namely state-owned banks, regional government banks, national private banks and foreign banks or mixed banks with a 10-year research period, 2009-2018. The dependent variable of this study refers to the research of Ardely and Syofriza Syofyan (2016), namely KPR and KPA property loans distributed from 4 groups of banks, namely state banks, regional government banks, national private banks and foreign banks or mixed banks. The variables of this study include:

1. KPR and KPA property loans distributed from 4 groups of banks, property loans, namely long-term loans provided by financial institutions, including banks to debtors to build or own a house on a land with collateral certificate of ownership of the house and the land itself
2. Loan to Value (LTV) Policy, LTV Policy is one of Bank Indonesia's macroprudential policy instruments aimed at controlling property loans. In this study, LTV policy variables will be in the form of dummy variables, before and after this policy is applied, referring to Ardely and Syofriza Syofyan (2016). Dummy 0 shows the time from before 2012, while dummy 1 is from 2012 to 2018.
3. Consumption Loan Interest Rates (CLIR), and consumption credit interest rates, which are payments for the amount of property loans provided by banks. Consumption credit data in this study is in the form of percentage applied by 4 groups of banks
4. Gross Domestic Product (GDP), Gross Domestic Product is one indicator to measure the country's economic growth. The GDP used in this study is GDP with a 2010 base year.
5. The variable of LTV and CLIR interaction, The variable of LTV and CLIR interaction in this study is the multiplication between LTV and CLIR during the data processing stage

Global economic conditions that are still experiencing pressure due to the crisis confronted the Indonesian economy with some minor challenges in 2009. Although slowing compared to 2008, economic growth in 2009 could reach 4.5%, the third-highest after China and India. (Bank Indonesia, 2009). This is the reason he chose 2009 as the initial year of research. The model used in this study adopted a model from Ardely and Syofriza Syofyan (2016) using dummy variables, as seen below:

$$Y = \beta 0 + \beta 1.LTV - \beta 2.CLIR + \beta 3.GDP - \beta 4LTV*CLIR + e$$

Note:

Y = *property loans KPR and KPA;* *CLIR = Consumption Credit Interest rates*
β0 = constanta; *GDP = Gros Domestic Product*
β1, β2, β3, β4 = regression coefficient; *LTV = Loan to Value dummy variable*
*LTV*CCIR = Loan to Value interaction variables and consumption credit interest rates*
e = residual/error

The estimation method in this study uses panel data regression. The initial step in processing data in this study is to test the classical assumptions, which aim to ensure that the model obtained meets the basic assumptions in the

regression analysis that includes the assumption of normality, no autocorrelation, no multicollinearity and no heteroscedasticity. The next test is the test using the Mackinnon, White and Davidson (MWD) method to determine whether the model is linear or log-linear. The next is to estimate using Common Effects, Fixed Effects and Random Effects. The selection of models between Common Effect and Fixed Effect is done through the Chow test or likelihood ratio test. The next process of selecting a model between Fixed Effect and Random Effect is done through the Hausmann test.

3. Results and Discussion

In the initial part of the discussion, the variable conditions used in this study were elaborated during the study period, from 2009 to 2018. Based on 2018 Indonesian Banking Statistics, the largest amount of nominal credit extended to the public was reached by state-owned banks, namely Rp. 2,244,788 billion. The lowest amount of credit, carried out by the Regional Development Bank (BPD) group, was Rp. 426,051 billion. Easing of LTV / FTV KPR covered three main aspects, namely easing the amount of LTV / FTV ratio for the first credit facility, easing of indent facilities, and easing payment terms. After easing the LTV / FTV provisions for mortgages in August 2018, mortgage loan growth remained high. During 2018, mortgages grew by 12.7%, mainly supported by the acceleration of growth in type of at / apartment type mortgages above 70m2. Credit growth for the whole 2009-2018 can be seen in Figure 1. below.

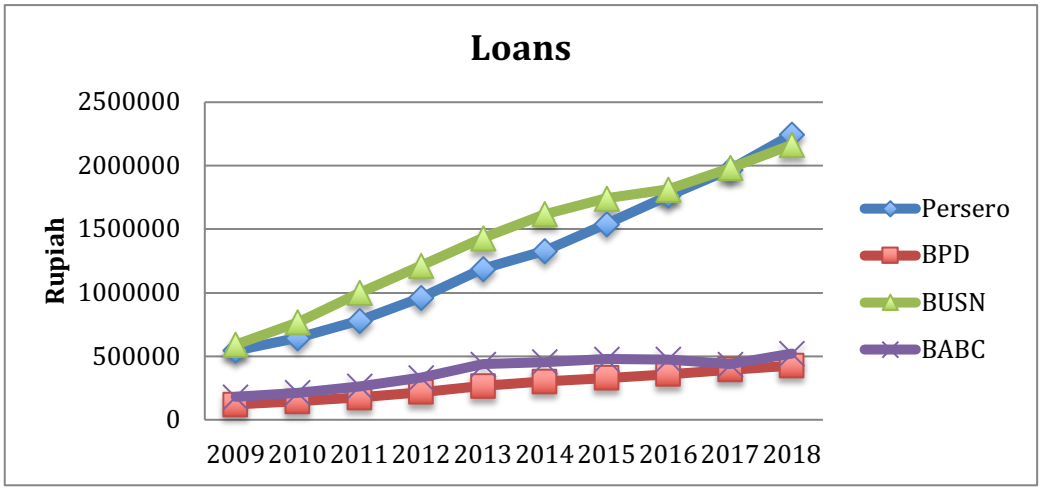

Figure 1. Growth in property loans in 4 Bank Groups for the period 2009-2018

GDP growth from 2009 to 2011 as seen in Figure 2, was relatively not too sharp, which is 2178851 billion, 2314459 billion and 2464677 billion respectively. GDP in 2012 experienced a sharp increase. Based on the 2012 Indonesian economic report, amid a slowing world economy, Indonesia's economy in 2012 grew quite high by 6.2%, mainly supported by domestic demand (Bank Indonesia, 2012). The achievement of national economic growth in 2012 was still supported by the economic contribution of the Java region and the Jakarta region which remained large, accompanied by the economic contribution of the Eastern Indonesia Region (KTI) which had increased. Until 2018, GDP growth had shown an increasing trend.

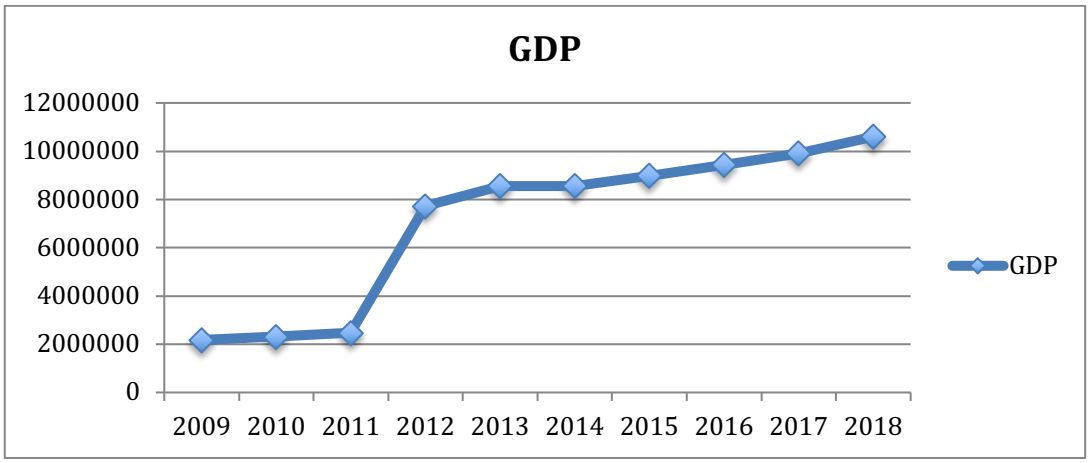

Figure 2. GDP growth for the period 2009-2018

The link between GDP and credit is described as follows. A decline in GDP is a sign of an economic recession, so the demand for goods and services decreases. This decrease will cause a decrease in demand for credit, which in turn results in an increase in bank interest rates. During expansive conditions, GDP growth will increase, while interest rates tend to decrease. A decrease in interest rates causes demand for credit to increase, especially for loans that are of concern to the public, namely consumer loans. The increase in lending causes an increase in real credit moving procyclically and growing relatively faster (Ardely dan Syofyan, 2016).

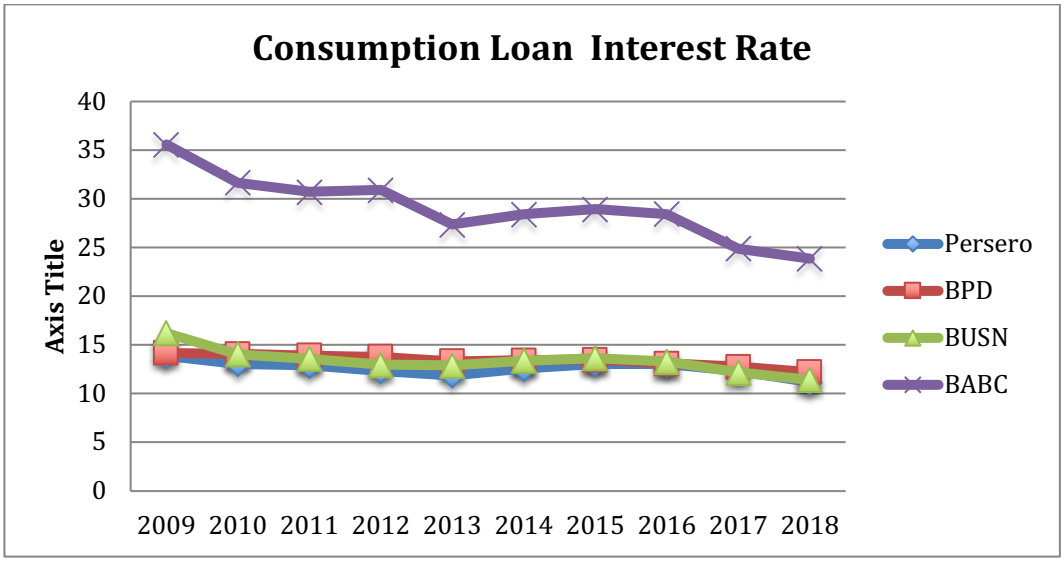

Figure 3. Growth in Consumption Loan Interest Rates for the period 2009-2018

As shown in Figure 3. CLIR for foreign and joint venture banks is much higher than state-owned banks, regional development banks (BPD) and national private commercial banks (BUSN) as shown in Figure 3. CLIR for state-owned banks, BPD and BUSN are in the range of 11% -16%. CLIR of 16% occurred in 2009 by BUSN. The condition of the BUSN bank at that time showed that BUSN was trying to maximize lending and was optimistic about the condition of the Indonesian economy after the global crisis that occurred in 2008.

Before estimating, an important step to take is to test the classical assumptions as a condition for panel data regression. Based on the normality test that has been done, it can be concluded that the data of the amount of credit channeled, GDP, and consumption credit interest rates have to meet the normality assumption. The next step is a multicollinearity test conducted to find out whether or not there are any deviations from the classical assumptions of multicollinearity. The test results show that the tolerance value of the three variables is more than 0.10 and the VIF value is less than 10. Therefore there is no multicollinearity problem in the regression model. Heteroscedasticity test is used to test whether in the regression model there is an unequal variance of the

residuals for all observations. Results from the heteroscedasticity test can be seen from plot graphs between variables with residuals. If there are certain patterns on scatterplots (wavy, widened, and then narrowed), then heteroscedasticity is present. If there are no clear patterns, but there are spread points above and below zero on the Y axis, thens heteroscedasticity has not occured. If the autocorrelation test results of Durbin Watson (DW) values is 1.547, and the DW value is between -2 and +2 then it shows that autocorrelation did not occur.

Panel data is best for detecting and measuring impacts that simply cannot be seen in pure cross-section or pure time-series data (Gujarati and Dawn C. Porter, 2012). Before panel data regression, the data were tested using the MacKinnon White and Davidson (MWD) method. The first step is to form a new regression to get the residual value, and store the residual value (Res1 = resid). The next process is to form a new variable F1 = Y-Res1. Then it is the linear log regression model. This has also to obtained the residual value (Res2 = resid) and a new variable F2-logY - Res2 is formed. Folowing is to create a new variable that needs to be created is Z1 = logF1-F2 and Z2 = antilog (F2 - F1). Next is to perfom regression by entering the variable Z1 in the linear equation regression and Z2 in the log-linear regression equation. Regression results show that both linear and log-linear models show equally good results, with a high coefficient of determination R^2 for each equation, 0.890 and 0.897, respectively. In selecting the best model in the panel data analysis model begins by choosing between the estimation model using the Common Effect Model or the Fixed Effect Model using the Chow test (Widarjono, 2013). The following equation is generated from the estimation of the common effect model:

Y = 1398 LTV – 11082.31CLIR + 0.062GDP + 62862 LTV*CLIR + e
P-value = 0.0007 0.1906 0.0594 0.0012

R-Squared determination coefficient for the common effect model is 0.376. Variables that affect property loans are LTV and LTV interaction variables and consumption credit interest rates. The next step is to make an estimate using the fixed effect model that results in the following equation and p value:

Y = 300882 + 7398.3 LTV – 1208.70 CLIR + 0.0553GDP + 62862 LTV*CLIR + e
P value = 0.5800 0.0042 0.9658 0.0010 0.0355

The coefficient of determination of R-squared for fixed-effect models is 0.890. Based on the results from the Chow test, a probability level of 0.00 is obtained which is smaller than 0.05. Therefore the right model is the Fixed Effect model. The next step is to conduct a Hausman test to choose between Fixed Effect and Random Effect models. After the Hausman test, a chi-square probability value of 0.00 was obtained. It can be concluded that the right model for this study is the Fixed Effect model. These results are not in line with the study by Ardely and Syofa (2016). The results from processing with the fixed effect method obtained a value of 0.890. This shows the ability of all independent variables namely the LTV variable, consumption credit interest rates, GDP and LTV interaction variables with consumption credit interest rates in explaining the change of the dependent variable namely KPR and KPA property loans in Indonesia by 89%, while the remaining 11% explained by other independent variables are not included in the model. KPR type of apartment has the opportunity to grow high, among others. It is influenced by factors like limited land land and practical lifestyle of the community, especially in big cities.

The accommodative macroprudential policy contributed to an increase in bank credit that grew by 11.8%, the highest in the last 4 years. The increase in credit was mainly contributed by loans that supported the production process in the form of working capital loans and investment loans that increased by 12.3%. The direction of macroprudential policy is pursued through various tools. Loan to Value or Financing to Value (LTV / FTV) ratios for Housing Loans (KPR) are relaxed to encourage growth through the property sector. This has a large multiplier effect on the economy. The role of micro, small and medium enterprises (MSMEs) in driving the economy is also increasingly encouraged by increasing the MSME credit ratio target from 15% to 20% in 2018 (Bank Indonesia, 2018).

4. Conclusion

In this study, the most appropriate model in analyzing the role of macroprudential policies in the distribution of property loans in this study is the fixed effect model. Based on the results of panel data regression, it can be seen that LTV as a proxy for macroprudential policy, GDP, CLIR and the interaction of LTV with GDP affects property loans. Based on data analysis, macroprudential policy through the LTV instrument implemented in June 2012 played a role in controlling KPR and KPA property loans in Indonesia. In this study the limitation is the Loan to Value (LTV) variable. This is only in the form of a dummy variable, not in the form of total LTV. Therefore the description of the condition of LTV is limited.

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Entrepreneurship Education and Entrepreneurial Behaviour among Undergraduate Students in Sabah, Malaysia

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Abstract
This study explores the impact of entrepreneurship education in the university on student's entrepreneurial behaviour, in terms of their entrepreneurial attitudes and start-up intention. The paper aims to investigate the perceived influence that various entrepreneurship education courses have had on third-year undergraduate students from business and non-business study programs in University Malaysia Sabah. The questionnaires were distributed via Google Forms, which gathers students' perspectives on their entrepreneurial attitudes (achievement, innovation, personal control and self-esteem), and start-up intention. The results of chi-squared test revealed that innovation, personal control and self-esteem are the most influential impacts of entrepreneurship education among undergraduate students. In addition, the results of One-Way ANOVA showed significant differences among types of student's degree programs in terms of their achievement, innovation, external support and start-up intention. The study also provides qualitative insights from students' perspectives about the challenges that they think could hinder students to start a business. This study hopes to contribute to the university and other institutions of higher learning in Malaysia in preparing the appropriate entrepreneurial education approach for the students towards materialising the government agenda to become 'Entrepreneurial Nation' by 2030.

Keywords: Entrepreneurship Education, Entrepreneurial Attitudes, Start-up Intention

1. Introduction

1.1 The Entrepreneurship Education in the University

Several universities in Malaysia reported a notable proportion of graduates do not find employment even after a year of their graduation, despite of concerted efforts that have been made by the government and universities on entrepreneurial embeddedness in the faculty curricula. Although some researchers have paid attention to factors for entrepreneurial intention among university students, little research has been carried out in relating to perceived factors that drive and hinder start-up intention. Therefore, this study aims to study the significant difference between students of three study programs in the university in terms of their entrepreneurial attitudes and start-up intention. In addition, the study gathers student's perceptions on challenges to start a business via open-ended

question. A total of 168 third-year undergraduate students from three different degree programs, including the entrepreneurship, non-entrepreneurship and non-business program were involved in this study.

In 2016, The Ministry of Higher Education of Malaysia reported that the graduate employability (GE) rate of Malaysian universities over the past five years recorded only minor increases of 2.8 percentage points. The report reveals only 56.5 percent of almost 225,000 graduates in Malaysian universities were reported able to find job within six months of completing their studies (Graduate Tracking Survey, 2016). These thought-provoking numbers convey that the remaining of more than 127,000 graduates of those unemployed every year as quite disturbing and should be treated as an alarm to educators to improve the quality and competencies of students for their future careers. A notable proportion of unemployed graduates of Malaysian universities may portray that a good academic achievement is no longer the only guarantee to get job. Hanapi and Nordin (2014) in their studies on unemployment among Malaysia graduates found that lack of soft skills and personal qualities as the main reasons for not being employed by employers. Previous surveys done by several leading job matching companies confirms the issues, in which JobStreet.com (2012) revealed that 60 percent of surveyed employers mentioned poor personality characteristics among graduates are among the main reasons leading to not hiring them. Furthermore, as revealed by TalentCorp Malaysia (2016), lack of self-esteem, self-initiative and soft skills are among the main factors leading to employability among fresh graduates in Malaysia.

Undoubtedly, concerted efforts have been made by the government and universities to inculcate entrepreneurial mind-set and competencies, through embedding entrepreneurship education as part of the faculty curricula. In fact, developing a holistic, entrepreneurial and balanced graduate becomes the first agenda under the Malaysia Education Blueprint 2015-2025 (Higher Education). The aim is not merely to produce graduate entrepreneurs but to prepare students with entrepreneurial qualities to become an independent and resourceful person in the future. Entrepreneurial education in most universities includes program or activities that seek to develop entrepreneurial behaviour, attitude, skills and values through lectures, hands-on activities, industrial engagement and entrepreneur's talk. It is believed that entrepreneurship embeddedness not only could motivate students towards entrepreneurship career but also could produce graduates with entrepreneurial competencies, that is to behave and think as an entrepreneur (Gibb, et al, 2010). Currently in Universiti Malaysia Sabah, the university has always encouraged the students to engage themselves into entrepreneurial activities by organizing innovation expo, entrepreneurship carnival, creativity competition, as well as collaborating with various entrepreneurial development organizations (EDOs) like MARA, SMECorp, Amanah Ikhtiar, CEOs and successful entrepreneurs of small enterprises, as an effort to create more students with entrepreneurial behaviour and mind-set.

Much research has been done on the start-up intention per se, however, there is still lack of research on the direct outcome of entrepreneurial embeddedness program on student’s entrepreneurial behaviours, skills and attitudes. Therefore, this study aims to explore the impact of entrepreneurship education embedded in faculty curricula towards entrepreneurial attitude and start-up intention among business and non-business undergraduate students in Universiti Malaysia Sabah (UMS). More specifically, this paper has two main objectives, (i) to identify the significant difference between types of student's courses in terms of their entrepreneurial attitudes and start-up intention and (ii) to explore student’s perception on what hinders or delays entrepreneurial start-up in the university. The online questionnaire posted in Google Forms has received 168 responses from final year undergraduate students in UMS. The URL link of the online questionnaire was shared to students in three different faculties via lecturers as well as student club. The findings of this research are expected to give some insights to university educators in developing effective work-based learning and teaching approaches to instill entrepreneurial attitudes and skills among students in preparing them for job market.

1.2 Entrepreneurial Behaviour – Attitudes and Start-up Intention

Entrepreneurship education involves teaching and learning activities that focus on inculcating student's behaviour and mind-set with entrepreneurial competencies, skills and knowledge in pursuing entrepreneurial career (Ekpoh & Edet, 2011; Ooi, Selvarajah & Meyer, 2011). It has been widely viewed by many scholars that the embeddedness of entrepreneurship education in university curricula is a key strategy to instil and mould students' attitudes and

preferences towards entrepreneurial career, i.e., to venture a business (Lee, Chang & Lim, 2005; Izedonmi & Okafor, 2010). Matlay (2008) revealed that over ten year's period under scrutiny with 64 graduates in the research sample, all of the graduates who had undergone entrepreneurship education became entrepreneurs. Previous studies argued the basic entrepreneurial skills can be taught in school or university, but it does not promise to produce a successful entrepreneur (Kuratko, 2003; Johannison, 1991; Rae, 1997). Given these opposite perspectives, it is not surprising that there is an ongoing deliberation about whether universities can able to produce a significant number and quality of future entrepreneurs as wished by the government (Matlay, 2008). Despite of different opinions concerning the role of universities to create future entrepreneurs, many previous studies have showed significant influences of entrepreneurship education towards students' attitudes and entrepreneurial intentions. Tam (2009) and Dell (2008) in their studies have proved that entrepreneurship education has significant impact on student's attitude of pursuing entrepreneurial path. In addition, the studies have found that students who have not exposed to any basic entrepreneurship education showed less interest towards becoming entrepreneur. This indicates that entrepreneurship education able to enhance personal characteristics of an individual, which subsequently creates strong self-confidence to choose entrepreneurship as their future career.

Many primary entrepreneurship scholars considered entrepreneurship studies as a traits-based approach, in which they viewed certain personal attitudes able to differentiate an entrepreneur from a non-entrepreneur. Notwithstanding, Robinson, et al. (1991) argue that the use of a trait-based approach is inappropriate because those characteristics are also meant for identifying the traits of individuals in other fields like salespeople, professionals and managers. Despite of incoherent views about the personal characteristics of an entrepreneur, it is still of interest for this study to include attitude variable into the current research. This is because it is believed that attitudes influence individual's decision towards entrepreneurship among students, which may produce other significant results. Personality traits that were most commonly studied were need for achievement, locus of control and risk-taking propensity, the ones first proposed by works of McClelland (1987) and Brockhaus and Horwitz (1986) as frequently associated with entrepreneurial behaviour. Robinson, et al. (1991) studies classic personality traits like need for achievement and locus of control but investigate and measure these traits as "attitude" which involves cognitive, feelings and behavioural components that a person holds about an event or object. They suggest that attitude model as a better approach to understand the factors of entrepreneurial behaviour, that is start-up intention and growth, in which they find that innovation in business, perceived personal control of business outcomes and perceived self-esteem are all significant predictors of entrepreneurship, though only need for achievement is not significant.

Entrepreneurial intention can be defined as the willingness of an individual to start a business venture (Sesen, 2012; Dell, 2008). It typically involves intuitive inspiration, goal, desire and the feeling of independence (Zain, Akram & Ghani, 2010). Many previous studies have proved that certain entrepreneurial attributes can be antecedents to entrepreneurial intention. Utsch and Rauch (2002) and Koh (1996) explain several important personality traits for entrepreneurship namely, locus of control, need for achievement, risk propensity, innovativeness, self-confidence and tolerance to ambiguity. Some authors have also highlighted the importance of environmental factors in explaining start-up intention, namely physical and emotional support (Fabeil, 2013; Uddin & Bose, 2012). On the other hand, some authors have contended that external context is not significantly related to start-up intention (Ahmed, et al., 2011; Esuh & Najafi, 2014). Although not all studies on external context towards entrepreneurial intention found strong significant relationships, many studies include them at least as control variables that might indirectly influence entrepreneurial intention. These findings imply a need to include external context variables as possible predictors of start-up intention among undergraduates.

Dell (2008) suggests that external factors like the availability of physical resources and emotional support can enhance entrepreneurial self-efficacy and in turn, strengthen their attitude toward entrepreneurship. The absence of this factor is postulated as one of the key challenges to start a business. Kreuger, et al. (2000), drawing from the Theory of Planned Behaviour, highlight how social norms influence what entrepreneurs do, i.e., entrepreneurs' perceptions of how important people in their lives like family and friends influence their attitudes towards start-up intention. These authors argue that support received from the social network is influential not only from a practical point of view (as sources of finance or practical assistance), but also in terms of emotional support (giving confidence, or reassurance that what the entrepreneur is doing is valuable and worthwhile). Krueger's findings

suggest that social norms have at least a moderate effect on entrepreneurial intention, with the influence of social support in entrepreneurs' lives acting as a mediator to their attitudes or decision on start-up intentions. Low and MacMillan (1988) also argued that meaningful research should adopt a more contextual and process-oriented focus, i.e., seeking to understand how people behave throughout the entrepreneurial process and how relationships with external forces affect their decision to start a business. Overall, these factors drawn from the literature suggest that other than person-related factors, external factors in the person's surroundings (physical and emotional support) may contribute to start-up intention.

2. Method

The survey was undertaken via online questionnaire (Google Forms). The samples were conveniently approached, in which the linking address was shared to all final year students in three faculties, via student leaders and lecturers. This sampling technique allows the researcher to gather respondents based on special features the respondents hold (Ricthie & Lewis, 2003). For the purpose of quality of sample, the researcher has set some criteria as bases for the sample selection (Miles & Huberman, 1994). The students whom participated in the survey are among the final year students of three faculties, i.e., Faculty of Business, Economics and Accountancy (consist of entrepreneurship and non-entrepreneurship program), Faculty of Food Science and Nutrition and Faculty of Computing and Informatics (non-business program). These students have had taken the entrepreneurship courses prepared by the University Curricula either as core university or core faculty. The questions included dichotomous and attitudinal of 5-point Likert Scale ranging from 1 (strongly disagree) to 5 (strongly agree). Attitudinal questions were used to ask respondents to indicate their agreeableness towards their entrepreneurial attitude (achievement, innovation, personal control and self-esteem) and intention to start a business. Data were analysed using both the descriptive and ANOVA analysis to test the significant impact between the variables. The One-way ANOVA analysis revealed interesting significant differences between the business non-business undergraduates, in terms of their entrepreneurial attitude and start-up intention. In addition, the study also provides qualitative insights from students' perspectives about the challenges that they think could hinder the students from starting a business in the university. Weber's views (in Bryman, 2004) imply that a combination of both qualitative and quantitative approaches in a study is good for the knowledge gathering process. Both approaches may complement each other in terms of providing relevant data and knowledge derived from both theories and observations of the real world.

3. Results

3.1 Respondents' Profile

Table 1 shows the descriptive analysis of respondents' profile. This study involves s a total number of 168 students, with more than three-quarter are female students (77.4 percent), vast majority are within the age bracket of 20 to 24 (91.7 percent), and mainly are Chinese (25 percent), followed by Malay (23.8 percent) and Dusun (11.9 percent). Almost half of the students involved in this study are among the non-entrepreneurship degree program (49.4 percent), followed by 31 percent of entrepreneurship program students and 19.4 percent are non-business students. The result also indicates that more than half (58.9 percent) of the respondents whom family does not own a business, and less than half of them have had attended training on business or entrepreneurship outside the campus.

Table 1. Respondent's Profile (n=168)

Personal Background		N = 168	Percentage (%)
Age	20 and less	30	17.9
	21 to 24	124	73.8
	25 and above	14	8.3
Gender	Male	38	22.6
	Female	130	77.4
Race	Malay	40	23.8
	Chinese	42	25
	Kadazan	9	5.4
	Bajau	14	8.3
	Dusun	20	11.9
	Indian	4	2.4
	Other Sabah Ethnics	29	23.2
Course in UMS	Entrepreneurship	52	31
	Non-Entrepreneurship	83	49.4
	Non-Business	33	19.4
Family Own a Business	No	99	58.9
	Yes	69	41.1
Attended any Business/ Entrepreneurship Training	No	96	57.1
	Yes	72	42.9

3.2 Entrepreneurial Attitudes and Start-up Intention among Undergraduates

The study aims to investigate to what extent undergraduate students in UMS are different in terms of entrepreneurial attitudes, external support and start-up intention after they attended basic entrepreneurship courses in the university or faculty level. Figure 1 shows the results of One-Way ANOVA analysis, which confirms that students of three types of programs are different in terms of entrepreneurial attitude (achievement, innovation) and start-up intention. Interestingly, students of non-business programs, i.e., the science field students, have a higher level of achievement, though they are not very keen to choose entrepreneurship as their future career. This is logic as they may perceive themselves as 'high achievers' in their professional field, for example to become a future food scientist, engineer, computer programmer, or food technologist, rather than in business field. It is found that start-up intention is more apparent among the students of entrepreneurship program, who also meant to have higher level of innovation, in which mainly of them agreed to the statement 'I feel very energetic working with innovative friends in a dynamic culture background.' This result is parallel with past study from Robinson, et al. (1991) who found that innovation in business, perceived personal control of business outcomes and perceived self-esteem are all significant predictors to start-up intention though only need for achievement is not significant. In addition, Frank, et al. (2007) and Robinson, et al. (1991) in their studies on the significance of personality traits in entrepreneurial orientation suggest that potential entrepreneurs who perceive high need for achievement, internal locus of control and self-esteem influence their start-up intention.

Figure 1. Results of One-Way ANOVA Test of Students' Entrepreneurial Attitudes and Start-up Intention (n=168)

Variables Tested	Overall Mean	Significance Value	Group Mean (Types of Course Attended in UMS)		
			Entrepreneurship Program (n=52)	Non-Entrepreneurship Program (n=83)	Non-Business Program (n=33)
Achievement	**3.841**	**0.000*** **	3.55	3.96	4.00
Innovation	**3.598**	**0.012***	3.78	3.55	3.42
Personal Control	3.786	0.136	3.81	3.84	3.59
Self-esteem	3.942	0.086	3.85	4.03	3.97
Start-up Intention	**3.830**	**0.000*** **	4.14	3.79	3.43

*Convention is *p<0.05, **p<0.01, ***p<0.001*

3.3 Students' Perception on Challenges for Graduates to Start a Business

In relating to students' opinions on the challenges that they think may hinder them from starting a business, Table 2 summarizes the result. Four main challenges appeared to be mainly mentioned by the respondents, relating to finance, skill, personality and external support. In relating to financial-related issues, some respondents mentioned lack of financial to start a business and no savings as challenges for start-up. Tariq, et al (2015) in their study s found that lack of funds causes problems to young graduates in becoming entrepreneurs. Lack of business and management skills was also mentioned by some respondents, especially on the planning, financial management and networking. This implies that students do not acquire the relevant skills that can influence them to choose entrepreneurship as their profession in the future. Some respondents also mentioned certain personality traits like creative, passion, self-confidence, perseverance, and risk-taking as the challenges for them to choose their career as an entrepreneur. These challenges have been widely mentioned in the literature as factors that delay entrepreneurial behaviour or start-up intention of an individual (Tariq, et al., 2015; Rahim, et al., 2015). In addition, some respondents also mentioned about the lack of external supports especially from the family and friends as to hinder them to involve in entrepreneurship. Tushabomwe-Kazooba (2006) in his study on the issues for graduate entrepreneurs concluded that families did not support graduates to become entrepreneurs because they think that is not a secure job.

Table 2. Summarize of Perceived Challenges of Graduates to Start a Business

Challenges (after coding)	Some of the transcripts from the respondents
Financial-related	Lack of capital, not enough money to start a business, lack of financial, financing, do not have stable finance, monetary problem, raising capital, no source of funding, don't have money, budget….
Business and Management Skill (Planning, Financing, Networking)	No planning, lack of networking, lack of business knowledge, lack of experience in business, don't know marketing, don't know where/how to get initial fund/assistance, poor time management …
Personality based	Their own attitude, lack of entrepreneurial interest, no passion, lack of creative idea, shy, not confidence, low determination, lack of communication skill, not creative, not able to take risk, fear of failure, like to be employed, lazy, afraid to do something new, …
External Supports	Lack of support from family members, too much government aids, loneliness in making decision, lack of trust from people, …

4. Conclusion

This paper summarises findings from those studies in two main areas: (i) the outcome of entrepreneurship education on student's entrepreneurial attitudes and start-up intention, and (ii) student's perception on challenges to start entrepreneurial activities in the university. The main purpose of this study is to investigate the influence of entrepreneurship education in the university, i.e. the embeddedness approach has able to develop student's mind-set and personality to become an entrepreneurial person which subsequently pursues them to become entrepreneur once graduated. For the purpose of this study, entrepreneurship embeddedness refers to teaching entrepreneurship skills in creative and innovative manner not merely to produce an entrepreneur, but more to inculcate entrepreneurial personality and mind-set among students, and hopefully with these spirit and characteristics the students are well equipped with suitable ability to choose entrepreneurs as their profession. In other words, entrepreneurship education is introduced as a platform to develop more entrepreneurs. The study reveals that three out of four entrepreneurial attitude variables, i.e., innovation, self-control, and self-esteem have significant influence on start-up intention, and in fact, some of them mentioned several personality-based factors that if absence, may hinder a person to become entrepreneur. This shows that they aware the importance of having suitable attitude to become entrepreneurs. Logically, the study also finds significant differences between three types of students in terms of their start-up intention, i.e., students of entrepreneurship programs are more likely to become entrepreneurs compared to students of non-entrepreneurship and non-business program. In addition, it is interestingly to find that most students agreed that ‘innovation' is a significant attitude to become an entrepreneur, though ‘risk taker' has also dominated their perception towards an entrepreneurial person. The main factors that perceived by respondents as challenges to become entrepreneur involves the financial-based, the skill-based, the personality-based, and external support. These challenges have been also found in many previous researches on entrepreneurial intention, not only focus on the undergraduates or young entrepreneur. Overall, it can be concluded that the undergraduates surveyed in this study view person-related factors, i.e., the entrepreneurial attitude and skill as the significant influence towards entrepreneurship, though financial and external support play modest influence. It is hoped that this study provides solution to reduce the perceived challenges or barriers especially on the development of appropriate skills that empower students to plan, start and run a small business in the university. The university curricula should be emphasised on teaching and learning activities that stimulate an environment that is conducive to develop entrepreneurial attitudes. In addition, adequate business and technical facilities in terms of source of funding, business registration, incubator, and business space are important to students especially to the non-entrepreneurship program students who perceived external support as the most significant to them. Finally, the analysis of the influence of entrepreneurial attitude and start-up intention in this study is limited in that it focuses primarily in one university only, i.e. among the undergraduates in Universiti Malaysia Sabah. Nevertheless, this study has contributed to the literature in relating to the willingness of students from different courses in university to become entrepreneur, as well as the barriers perceived by most undergraduates in becoming an entrepreneur. In future analyses, we hope to explain further on the teaching and learning approaches that preferable among undergraduates to stimulate their entrepreneurial intention.

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The Role of Business Environment on the Establishment of Small and Medium Scale Enterprises in Taraba State

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Abstract
The research study examines the role of business environment on the establishment of small and medium scale enterprises in Taraba State. To achieve that the following research objectives were formulated; (i) to determine the impact of external business environmental on the developing SMEs in Taraba state, (ii) to evaluate the existing SMEs in Taraba State, (iii) to analyze problems of developing of SMEs in Taraba state, (iv) Examine the link between business environment and SMEs In Taraba State. The research method adopted was quantitative technique were Data collected were and analyzed using Statistical Package for Social Scientists (SPSS) Version 26. A total of three hundred and twenty-four (324) copies of the questionnaire were administered, out of which three hundred and sixteen (316) copies representing (97.5%) of the questionnaire were properly completed and retrieved while eight (8) copies representing (2.5%) were not retrieved. The data were presented in tables as frequency distribution in the data analysis; the techniques of percentage frequencies, mean and standard deviation were used. The hypotheses were tested with chi-square $(\chi^2)$and multiple regression method at 5% significance level. The result shows that gender, age, education level, risk-taking and employee's skills have no significant relationship with business growth while years of experience with (P-value =0.032) have a significant relationship with business growth. The χ^2 test also revealed that there was a statistically significant association existing between size of sales (P-value=0.001< 0.05), gained profit (P-value=0.0026 < 0.05), credit control (P-value=0.015< 0.05), location (P-value=0.009< 0.05) and access to fund (P-value=0.014< 0.05) with business establishment in the business environment. Regression analysis was used to check relative contribution of business environment (Internal Factors) on Business Growth Using Regression Analysis. The result indicated that size of sales, credit control, financial management practices have significant effect on the business growth of SMEs with P-value< 0.05. Furthermore, from the regression output for effect of external factors on business growth, it also revealed that location, access to fund has significant effect on the business growth of SMEs with P-value< 0.05. regression analysis also indicated that government regulation, government agency, sundry bill, access to fund and bureaucratic process have significant effect on business growth in Taraba State. Consequently, both internal and external business environmental factors have significant effect on the establishment of SMEs in Taraba state.

Keywords: Business Environment, Establishment of SMEs and Taraba State

1.1 Introduction

Business environment plays a very significant role in the establishment, establishment and growth of any business enterprise. Business environment, therefore, constitutes both the internal and external forces that promote or impede on the growth of any business within a given environment. The success of any business enterprises solely

depends on the environmental factors that influence business activities which include small and medium scale enterprises (SMEs). This research, therefore, attempts to study the role of business environment on the establishment of small and medium scale enterprises (SMEs) in Taraba State.

Small and medium scale enterprises (SMEs) have been recognized as indispensable components of economic establishment in both developed and developing economies. This subsector of the economy is globally acknowledged to contribute substantially in enhancing employment creation or generation, poverty alleviation, equitable distribution of resources, income redistribution, technical and technological innovation, entrepreneurial skills establishment, more uniform industrial and economic region. Moreover, SMEs have been touted strategic in ensuring and encouraging rapid industrialization and reversal of rural-urban migration (Ezema, 2014).

SMEs are businesses that have turnover of less than 100 million per annum and/or less than 300 employees. The term SMEs have been described by different authors in different ways, the Nigeria Bank for commerce and industry-defined a small scale enterprise as one whose capital does not exceed ₦750,000 (Imeokparia and Ediagbonya, 2014). Their increasing number in the business society is due to less capital requirement, less labour, low technological knowledge and a little managerial ability needed to establish such SMEs (Essien, 2014).

SMEs represent about 90% of the manufacturing sector in terms of the number of enterprises; they are distributed in Nigeria by clusters within regions and thus contribute approximately 50% of the GDP in Nigeria.

1.1 Statement of Research Problem

SMEs is key to the contribution of National GDP of every Nation and it is a determining factor in the classification of Nation as developed or under developed. SMEs in Nigeria have been classified to suffered low and slow growth over the years this is seen as a result of several challenges like economic and political instability, corruption, insecurity, high rate of poverty, poor infrastructures, etc. the challenges can be sum up to be business environment. Hence this study to examine the relationship between business environment and the establishment of SMEs in Taraba State.

Therefore, there is the need to seek further solution to these problems as its grossly hamper SMEs establishment in Nigeria. As such, given this state of nature in the business environment, the focus of this study is to examine the role business environment plays in the establishment of SMEs as relate to Taraba state.

1.2 RESEARCH OBJECTIVES

The objectives of this study are;

(i) to determine the impact of external business environmental on the developing SMEs in Taraba state.
(ii) to evaluate the existing SMEs in Taraba State
(iii) to analyze problems of developing of SMEs in Taraba state.
(iv) Examine the link between business environment and SMEs in Taraba State

1.3 Research Questions and Hypotheses

In order to achieve the objectives of the study the following research questions were developed:

(i) What is the impact of external business environmental on the developing SMEs in Taraba state?
(ii) Is there increase on the already existing SMEs in Taraba State?
(iii) What are the problems of developing of SMEs in Taraba state?
(iv) Is there any link between business environment and SMEs in Taraba State?

1.4.1 Statement of the Hypothesis

H0: Business environmental has no significant effect on the establishment of SMEs in Taraba state

Hi: Business environmental has a significant effect on the establishment of SMEs in Taraba state

1.5 Significance of the study

i. Contribution to practice

The study would serve as a useful guide to policy formulators, management practitioners, executive, corporate managers most especially in SMEs to understand how business environment could impact positively in their business policies, leadership styles, recruitment and selection, innovation and pricing aid or enable, the relationship and the extent of its effect on the attainment of establishment by the SMEs. The study would also enable the SMEs to proactively respond to changes within the environment more effectively as well as enable them implement better business strategy for their operation and establishment.

ii. Contribution to Research

Pervious research works have examined different perspective to the role of business environment in an SMEs establishment in an economy but no close attention was given to Taraba State, hence this study attempts to study would sparked up research on the role of business environment in the establishment of SMEs in Taraba, its challenges and prospect in advancing the Taraba State economy.

ii. Contribution to Knowledge

The pool of knowledge will be enhanced on the fact that lack of control system that moderate business environment has negatively affect the establishment of SMEs in Nigeria. Hence the need to create business environment friendly is imperative.

2. Literature Review

2.1. Theoretical Framework

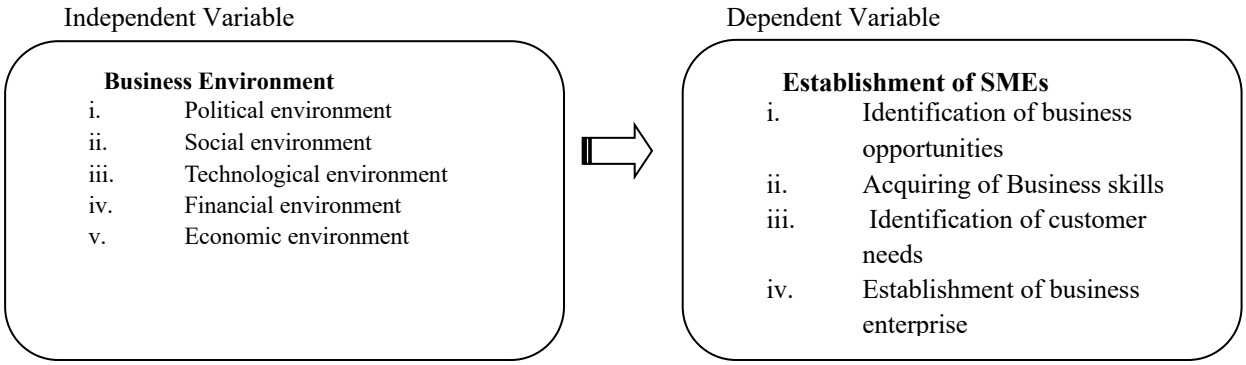

Figure 2.1 Theoretical framework of research
Source: Researcher's approach 2019

The theoretical framework in Figure 2.1 synthesizes the key words of the study, through an analysis of the relevant theory Business environment is a construct that impacts establishment on the small and medium enterprises. The framework is derived from complexity theory (independent variable) may be linked to establishment of small and medium enterprise (dependent variable) Every new SMEs organization passes through stage of business environment in order to survive o establishment process.

2.1.1 Complexity Theory Approach

Complexity was defined as the measure of heterogeneity or variety in environmental, sub-factors such as customers, suppliers, socio-politics and technology (Chakravarthy, 1997). As soon as complexity increases, the

capacity with which to understand and make use of information to plan and predict becomes more difficult (Black and Farias, 1997).

The business environment is comprised of a set of relationships between agents or stakeholders in the environment. Hence, these interactions continuously "co-create" the business environment the business exists. The business environment is changing faster than ever before, with such change occurring in two major dimensions, complexity and turbulence (Conner, 1998).

As all systems is due to increase in complexity over time, the increasing complexity often leads to more change (Conner, 1998). As the system becomes more complex, making sense of it becomes more difficult (Black and Farias, 1997).

A stable environment changes little, but when it does, the change is predictable. In unstable environments, there are many unanticipated changes. Turbulence is the natural state of the business environment (Mason, 2007). It is caused by changes in, and interaction between, the various environmental factors especially because of advances in technology and the confluence of computer, telecommunications and media industries. The result of this growth in business environmental turbulence has been the reduction of orderly competition, an increasing need for information, innovation and quicker cycles of establishment, and more difficulty in predicting customer, product and service requirements. Complex and turbulent business environments are not desirable, but since many businesses are uncertain about how to cope with such situations, it only will make sense to identify ways in order to handle such environments.

2.2 The Role of Business Environment and Establishment of SMEs in Nigeria

The literature on the establishment and growth of firm has been identified severally to be influenced by certain factors. These factors have been classified by Brüderl et al. (1992) as follows: (i) Individual specific factors; (ii) firm-specific factors and (iii) environmental factors. The individual characteristics of the founder are identified by the human capital theory as pre-requisites for the establishmental growth of SMEs. These characteristics are described in the literature by researchers from different fields. For example, sociologists tend to identify socio-demographic attributes of the founder; psychologists tend to list the personality traits.

As for the enterprise itself, most studies on the growth and survival of firms primarily find that the age and size of a firm seemed to affect its survival (Henderson, 1999) positively. For firm age, it is argued that new entrant's firms face a phenomenon known as the 'liability of newness' effect. This perspective was of the opinion that new firms face a greater risk of failure as compared to older ones. This is because older and more established firms are likely to have more developed routines and established processes and greater access to resources in comparison to younger and less established firms (Sorensen & Stuart, 2000). On the other hand, other studies have found that survival may decrease with firm age. The 'liability of adolescence' effect proposed by Fichman and Levinthal (1991) and the 'liability of senescence' effect proposed by Hannan (1998) explain this relationship. The 'liability of adolescence' proposed an inverted U shaped, rather than linear, risk pattern. This suggests that firms are shielded from failure at first due to the initial resource endowments. However, firms may no longer be protected when these resource endowments become less adequate as they are confronted with a new market environment, leading to increased firm exit-risk during adolescence (Pérez et al., 2004). The mortality risk is however, not expected to start decreasing after the period of adolescence until firms adapt to the environment and consolidate their position in the market (Pérez et al., 2004). For the 'liability of senescence,' Hannan (1998) posited that the probability of survival decreases over time and therefore older firms face a relatively high chance of market exit.

Besides the traditional factors of firm age and size, organizational strategies are found to have an impact on the establishment and growth of SMEs. Geroski et al. (2010) showed that there are two divergent views, based on economic and ecological arguments, regarding the impact of firm strategies on establishment and growth. While economists base their argument on the adaptive role of change by stressing that survival of firms is dependent on the success in *adapting* to new ways of doing business; ecologists on the other hand, emphasize inertia or *resistance to change* by arguing that firms that do not change are more likely to survive. This latter argument

stresses that the greater the magnitude of change, the higher the likelihood of firm exit. It is in part linked to the scale of adaptive response by the firm to environmental stimuli.

3. Research Methodology

3.1. Research Design

The study adopted quantitative paradigm using the survey design. This research design was permissible for employing a coherent research instrument for gathering information and generating data that were drawn in this study. The population for the study consists of the small and mediums enterprises (SMEs) that operate their businesses in Jalingo, the capital of Taraba State and also registered with Small and Medium Enterprises Establishment Agency of Nigerian population for the study stand 1698.

The sample size for this study was established with the use of the Taro Yamane (1967) statistical formula. This formula relates the population size to the level of significance as illustrated below:

$$n = \frac{N}{1 + \left(e^2\right)N}$$

Where:
n= Sample Size
N=Overall Population
e= Tolerated/assumed error limit 0.05 on the basis of 95% confidence Interval

$$n = \frac{1698}{1 + \left(0.05^2\right)1698}$$
$$n = \frac{1698}{1 + 4.245} = \frac{1698}{5.245}$$
$$n = 323.7368 \approx 324$$

The data collected were analyzed using Statistical Package for Social Scientists (SPSS), version 25.0. Regression analysis was conducted to ascertain the role of internal and external business environment in the establishment of SMEs in Taraba State. All statistical tests were performed using two-sided tests at the 0.05 level of significance. P-values of less than 0.05 were considered statistically significant.

4. Data Analysis

Table 1: Independent variable (Business Environment)
SA = Strongly Agree; A= Agree D= Disagree SD=Strongly Disagree

S/N	ITEMS	SA	A	D	SD	Mean	Std	Remark
a.	I have access to information on technologies to support my business	48 (15.2%)	135 (42.7)	117 (37.0)	16 (5.1%)	2.68	.790	Disagree
b.	The government support is not sufficient	144 (45.6%)	106 (33.5%)	60 (19.0%)	6 (1.9%)	3.23	.820	Agree
c.	Capital is not sufficient to maintain and expand the business	111 (35.1%)	117 (37.0%)	77 (24.4%)	11 (3.5%)	3.04	.857	Agree
d.	I have access to customers	117 (37.0%)	110 (34.8%)	75 (23.7%)	14 (4.4%)	3.04	.886	Agree
e.	I have access to information on government regulations that are relevant to my business	85 (26.9%)	103 (32.6%)	89 (28.2%)	39 (12.3%)	2.74	.990	Disagree

f.	New technology is attainable	97 (30.7%)	101 (32.0%)	83 (26.3%)	35 (11.1%)	2.82	.992	Disagree
g.	I have access to information on market	97 (30.7%)	97 (30.7%)	93 (29.4%)	29 (9.2%)	2.83	.971	Disagree
h.	I have access to supplier	136 (43.0%)	127 (40.2%)	48 (15.2%)	5 (1.6%)	3.25	.766	Agree
i.	I got business permit and other permits easily and quickly	86 (27.2%)	108 (34.2%)	98 (31.0%)	24 (7.6%)	2.81	.923	Disagree
j.	Existing technology is easily maintainable	56 (17.7%)	107 (33.9%)	122 (38.6%)	31 (9.8%)	2.59	.891	Disagree
k.	I have access to information on finance sources	83 (26.3)	105 (33.2%)	110 (34.8%)	18 (5.7%)	2.80	.895	Disagree
l.	I have reliable business network to run the business	121 (38.3%)	141 (44.6%)	50 (15.8%)	4 (1.3%)	3.20	.744	Agree
m.	The government does not provide any solid assistance to the SMEs	153 (48.4%)	107 (33.9%)	47 (14.9%)	9 (2.8%)	3.28	.819	Agree
n.	SMEs are not carried along on the disbursement of financial support by government agencies	142 (44.9%)	109 (34.5%)	54 (17.1%)	11 (3.5%)	3.21	.847	Agree
o.	The existing government programs on SMEs are not helpful	139 (44.0%)	117 (37.0%)	54 (17.1%)	6 (1.9%)	3.23	.797	Agree
p.	The company struggles to get credit from banks	138 (43.7%)	146 (46.2%)	32 (10.1)	0	3.34	.653	Agree
q.	Theft and burglary are on the rise	131 (41.5%)	121 (38.3%)	50 (15.8%)	14 (4.4%)	3.17	.851	Agree
r.	Payment of multiple taxes is disturbing	137 (43.4%)	121 (38.3%)	52 (16.5%)	6 (1.9%)	3.23	.789	Agree
s.	Status of road in the location is good	133 (42.1%)	123 (38.9%)	52 (16.5%)	8 (2.5%)	3.21	.804	Agree
t.	Electricity supply is epileptic	140 (44.3%)	135 (42.7%)	35 (11.1%)	6 (1.9%)	3.29	.738	Agree

Table 1 showed the experience in running the business and the actual condition of the business. The item statement considered include I have access to information on technologies to support my business with a mean score (2.68), the government support is not sufficient with mean score (3.23), capital is not sufficient to maintain and expand the business with mean score (3.04), I have access to customers with mean score (3.04), I have access to information on government regulations that are relevant to my business with mean score (2.74), new technology is attainable with mean score (2.82), I have access to information on market with mean score (2.83), I have access to supplier with a mean score (3.25), I got business permit and other permits easily and quickly with a mean score (2.81), existing technology is easily maintainable with a mean score (2.59), I have access to information on finance sources with a mean score (2.80), I have reliable business network to run the business with a mean score (3.20), the government does not provide any solid assistance to the SMEs with a mean score (3.28), SMEs are not carried along on the disbursement of financial support by government agencies with a mean score (3.21), the existing government programs on SMEs are not helpful with mean score (3.23), the company struggles to get credit from banks with a mean score (3.34), theft and burglary are on the rise with mean score (3.17), payment of multiple taxes is disturbing with a mean score (3.23), status of road in the location is good with a mean score (3.21) and Electricity supply is epileptic with a mean score (3.29). It can be deduced from the above that 57.9% of the respondents agree that they have access to information on technologies to support their business while 42.1% disagree, 79.1% agree that the government support is not sufficient while 20.9% disagree, 72.1% of the respondents agree that capital is not sufficient to maintain and expand the business while 27.9% disagree, 71.8% of the respondents agree that they have access to customers while 28.1% disagree, 59.5% of the respondents agree that they have access to information on government regulations that are relevant to their business while 40.5% disagree, 62.7% agree that New technology is attainable while 37.4% disagree, 61.4% agree that they have access

to information on market while 38.6% disagree, 83.2% agree that they have access to supplier while 16.8% disagree, 61.4% agree that they got business permit and other permits easily and quickly while 38.6% disagree, 51.6% agree that existing technology is easily maintainable while 48.4% disagree, 59.5% agree that they have access to information on finance sources while 50.5% disagree, 82.9% agree that they have reliable business network to run the business while 17.1% disagree, 82.3% agree that the government does not provide any solid assistance to the SMEs while 17.7% disagree, 79.4% agree that SMEs are not carried along on the disbursement of financial support by government agencies while 20.6% disagree, 81% agree the existing government programs on SMEs are not helpful while 19% disagree, 89.9% agree the company struggles to get credit from banks while 10.1% disagree, 79.8% agree that Theft and burglary are on the rise while 20.2% disagree, 81.7% agree that Payment of multiple taxes is disturbing while 18.4% disagree, 81% agree that Status of road in the location is good while 19% disagree and 87% of the respondents agree that Electricity supply is epileptic while 13% disagree.

Table 2 : Dependent variable (Establishment of SMEs)

VE = Very easy; E = Easy; D = Difficult; VD = Very difficult

S/N	ITEMS	VE	E	D	VD	Mean	Std	Remark
a.	Firm registration	150 (47.5%)	121 (38.3%)	37 (11.7%)	8 (2.5%)	3.31	.775	Agree
b.	Licenses for start of business	121 (38.3%)	116 (36.7%)	63 (19.9%)	16 (5.1%)	3.08	.883	Agree
c.	Customs regulations	83 (26.3%)	107 (33.9%)	95 (30.1%)	31 (9.8%)	2.77	.951	Disagree
d.	Regulations on employment	111 (35.1%)	125 (39.6%)	70 (22.2%)	10 (3.2%)	3.07	.835	Agree
e.	Health and safety regulations	142 (44.9%)	123 (38.9%)	43 (13.6%)	8 (2.5%)	3.26	.787	Agree
f.	Tax regulations	88 (27.8%)	97 (30.7%)	95 (30.1%)	36 (11.4%)	2.75	.988	Disagree
g.	Environmental regulations	76 (24.1%)	101 (32.0%)	103 (32.6%)	36 (11.4%)	2.69	.963	Disagree

Table 2 showed evidence based on experience in running the business. The item statement includes Firm registration with a mean score (3.31), Licenses for start of business with a mean score (3.08), Customs regulations with mean score (2.77), Regulations on employment with mean score (3.07), Health and safety regulations with a mean score (3.26), Tax regulations with a mean score (2.75) and Environmental regulations with a mean score (2.69). It was evident from the table that 85.8% are of the opinion that firm registration is easy while 14.2% opined that firm registration is difficult, 75% are of the view that Licenses for start of business are easy while 25% says is difficult, 60.2% opined that Customs regulations is easy while 39.9% are of the view that is difficult, 74.7% are of the view that Regulations on employment is difficult while 25.4% says is difficult, 83.8% of the respondent says that Health and safety regulations are easy while 16.2% are of the view that is difficult, 58.5% opined that tax regulations are easy while 41.5% says is difficult and 56.1% of the respondents are of the opinion that Environmental regulations are easy while 44% says Environmental regulations is difficult.

5. Conclusion and Recommendations

5.1 Conclusion

The business environment has impact on the establishment of SMEs in Taraba state as showcase by the negative impact of government agency on security measure that has not been up to expectation as business owner's complained of both business environment, likewise the effect of inadequate infrastructures, lack of access to funding and financial inadequacy affects the performance and establishment of SMEs.

The external environmental factors are the major factors influencing the establishment and performance of SMEs in Taraba states.

5.2 Recommendation

Business environmental factors influencing the establishment and performance of SMEs are many and varied; therefore, this study could not exhaust issues regarding SMEs development and environmental factors. Since this study considered and is limited to only Taraba state. The study recommended further researches on the following.
a) A Comparative study on the impact of business environment on SMEs performance in the North-eastern states of Nigeria should be carried out.
b) Study on the impact of government agencies assigned to supervise SMEs and disburse funds for SMEs support should be carried out in Taraba and the north-east state of Nigeria.

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Ethnic Consumer Markets and Movie Marketing: An Empirical Study on Marvel's 'Black Panther' and Predictive Analytics of Ethnic Consumer Behavior of Moviegoers

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Abstract
The purpose of this study was to examine the movie, Marvel's *Black Panther* and the predictive analytics of ethnic consumer behavior of moviegoers We examined box office receipts and trends on movies and box office successful films. The problem identified as a basis for this study is to examining marketing strategy and tactics of movie marketing in terms of traditional and non-traditional media strategy to moviegoers. This study is a continuation of the researchers' prior research on movie marketing and strategy and regression model predicting box office revenue. The overall objective of this research is threefold. First objective we examine what are the key ad variables that influence movie goers to see the movie. Second, the objective examined, how many key ad factors are a major influence on movie goers to see the movie. Last, the objective examined was how many key ad variables were an influence both online and offline ticket sales to see the movie. The study sample was taken across the country. We used a three-step process in the research design. This study had a protocol of studies. First, researchers conducted a pilot study with a (N = 147) moviegoers. Second, the formal was conducted on a larger size sample (N = 372) of moviegoers. The researchers used three statistical test designs: (a) descriptive statistics; (b) principle component analysis (PCA); and a (c) structural equation modeling (SEM). The results revealed two key findings. First, there were three factors that influence movie goers of the *Black Panther* movie: (1) *Combination PR Activities*; (2) *Traditional Movie Marketing Ads* and (3) *Current and Future Movie Preferences*. Second, we found that using the movie ad variables as endogenous variables, they were strong influences on moviegoer frequency. The use of social media to get information about movies was prevalent in the data.

Keywords: Ethnic Consumer Markets, Black Panther, Moviegoers

Introduction

Target audiences have just as much of a wide-reaching impact on advertising as target markets have on marketing in general. Every tiny detail of a well-crafted advertisement is specifically chosen to appeal to the target audience (Ingram, 2018). For marketers, whatever their companies' marketing strategies are, the main purpose of their marketing activities is to influence consumers' perception and attitude toward a brand, establish the brand image in consumers' mind, and stimulate consumers' actual purchasing behavior of the brand, therefore increasing sales, maximizing the market share and developing brand equity (Zhang, 2015).

Marvel's most important black superhero, *The Black Panther*, has evolved a lot over 50 years. The *Black Panther* has gone from being an under-utilized figure in the background of Avengers group shots to arguably being the most fearsome strategist in the Marvel Universe. His elevation to Marvel's top tier is a fascinating meta-story (Narcisse, 2016). With *Black Panther*, Disney has once again deciphered a winning code for the future of cultural marketing, tapping into the unmet needs of an underserved market (Cheung, 2018). Given the projected rise of multicultural consumers and multicultural influenced consumers in the U.S. in the decades ahead, these groups represent a significant spending power and should be high on brand marketers' radars as the growth drivers of the future. This can be welcome news for marketers who are seeking new opportunities and new markets (Lakusta & Ratyosyan 2016).

The movie, *Black Panther*, fits into the category of new customer segments with products that have already proved successful. The movie took proven action movie tropes to a new market demographic (Wise, 2018). The unwavering support and rally for *Black Panther* show that this market segment will support a message that's told right and most importantly, told differently. The black community was swift to back and show support because of the positive representation of blacks in the movie (Iyare, 2016). Disney built a fantastically solid foundation, then tapped into the magical Marvel hype machine to amplify the film's inherent strengths (Beer, 2018).

The purpose of this study was to examine the predictive analytics of ethnic consumer behavior of moviegoers on the movie, Marvel's *Black Panther*. A market research study was conducted to examine differences in consumer behavior of ethnic movie goers and the effects of movie marketing on them. This study proposes the following research questions that guided this study (1) What are the key ad variables that influence movie goers to see the movie? (2) How many key ad factors are a major influence on movie goers to see the movie? (3) How many key ad variables were an influence both online and offline ticket sales to see the movie?

The present research asks which ad variables can influence people to see a movie and how they impact ticket sales. The literature review demonstrates a lack of scholarly studies on the subject of ethnic movie marketing. However, it shows that ethnic marketing in retail and service industries is effective for customers who value the brand's knowledgeability and representation as well as ingenuity. These findings suggest the all parts of *Black Panther's* advertising campaign, including social media, traditional marketing, personal offers, and movie reviews, informed ethnic consumer choices. The most prominent, however, was word of mouth marketing initiated by the community's interest in self-identification.

In order to reach the goals of this study and address the stated objectives, a quantitative study was done. The study sample ($N = 372$) was taken across the country. The researchers used a three-step process in the research design. The reliable research instruments included: a 15-item survey instrument, a 5-point Likert scale, and a close-ended questionnaire. The received data was analyzed with the help of quantitative analysis software to conduct statistical tests, determine frequencies, indicate comparisons based on the crosstab analysis, and provide the results of independent t-Test, ANOVA, and PLS-SEM modeling for regression. The findings from the complex data analysis were used to validate the purpose of the study.

Background of the Study

In the winter of 2018, the movie *Black Panther* was released in theaters. A part of one of the most popular comic-based movie franchises, the film featured a large cast of Black actors. (Lang & Lopez, 2018). This phenomenon raises a number of questions that are important for understanding what makes targeted marketing successful. First of all, one may inquire what key ad variables impact people's choice to see a particular movie. Second, it is possible to see how many of these aspects are influential. Finally, online and offline ticket sales can be reviewed to analyze the most notable ad factors. The literature on this subject considers various products, and a gap in studying films made for Black audiences is apparent.

The film *Black Panther* reached a number of film industry milestones. For example, it is the second largest grossing movie from the Marvel cinematic universe (MCU) after the first *Avengers* movie (Mendelson, 2018). In the world of comic-based movies, *Black Panther* quickly leveled with films that featured the most popular characters ever, *Batman* and *Iron Man* (Mendelson, 2018). While *Batman* and *Iron Man* have a large fanbase from comics and popular culture, characters from *Black Panther* did not have a similar level of social capital prior to the 2018 movie. Nonetheless, *Black Panther* became the most popular movie that centered on one superhero (non-sequel solo film). Apart from quickly raising domestic and international attendance numbers, the film was also nominated for multiple Oscars, winning three of them (IMDb, 2019). The number of records that the film set is interesting to review as it shows what moviegoers may be influenced by when choosing what film is worth watching. One can see that *Black Panther* was a success from a filmmaking and marketing standpoint. It received high scores among the critics and the audiences and won prominent awards (IMDb, 2019). The numbers, however, do not reveal the amount of interest that the movie accumulated. In the United States, many people united their entire communities to watch the movie. Celebrities, prominent businesspeople, and citizen-initiated campaigns for children to attend the cinema (Lang & Lopez, 2018). The excitement about *Black Panther* shows how the advertising was able to tap into the ethnic consumer market.

Literature Review

The search for relevant scholarly studies on this subject has revealed a lack of research about ethnic consumers' decisions in the industry of filmmaking. Nevertheless, ethnic marketing is not a new term in the field, and some information can be found when looking through the findings in other industries. For example, Xu, Shim, Lotz, and Almeida (2004) examined the cultural background of Asian-American youth in relation to their consumer choices. The authors concentrated on two industries, food and entertainment, and considered the opinions of one's family and friends. As a result of exploratory factor analysis, Xu et al. (2004) determined that young consumers are motivated significantly by both constant and situational influences. A sense of cultural identity is a factor that impacts people's decisions to participate in culture-driven activities. Furthermore, friends and communities encourage people's ethnic consumer choices and shape their consumption behavior regardless of their efforts – the mere presence of Asian Americans in groups with other Asian Americans is a factor that contributes to more ethnicity-specific activities (Xu et al., 2004). This data explains how social media marketing for *Black Panther* influenced the numbers of Black moviegoers.

Another view of ethnic minority marketing is presented in the study about the Latinos population in the U.S. Peñaloza (2018) uses historical records to see how ethnic marketing shapes and informs the decisions of consumers. The scholar notes that the audience, whether it watches a movie or an advertisement, is applying their personal knowledge and understanding of the current political events when thinking about the events depicted in the piece of media. Therefore, companies should be aware of the contemporary issues existing in the world when choosing an approach to showing their product. The case of *Black Panther* is relevant to this study because it was released at a time when the United States had increased tensions between ethnicities (Lang & Lopez, 2018). As Peñaloza (2018) highlights, the correct appeal to such issues can produce a positive response and increase the popularity of the media piece. *Black Panther's* marketing showcased the cast of the movie, depicting both male and female characters in a positive light, while also avoiding tense interracial conflicts.

The research about ethic attributes of businesses and their appeal to ethnic consumers shows the importance of customer service and personalized marketing. Huang, Oppewal, & Mavondo (2013), while examining a different minority group (Chinese Australians), come to conclusions that are similar to previous studies. The authors' correlation calculations demonstrate that customer service and the knowledgeability of people who provide the service are vital to consumers' positive decisions (Huang et al., 2013). Thus, people's ethnic consumer decisions may depend on the feelings that product marketing invokes. The study finds that the ethnicity of service providers and their knowledge of culture play an essential role in the client's perception of the business' legitimacy. Applying these factors to the advertising activities of *Black Panther*, it is clear that the movie's marketing addressed these concerns. The mostly Black cast of the film, as well as its commitment to employing Black people, resemble the points of Huang et al. (2013) about hiring teams of appropriate ethnicity.

A study of young Black consumers' decisions living in the UK investigates the significance of brand personification. Gbadamosi (2015) gathers data from Black teenagers in relation to their consumer choices and ethnic identity. The researcher finds that customers with a need for social acceptance based on their identity make specific ethnicity-driven choices (Gbadamosi, 2015). Such symbolic consumption is explained by people's desire for self-construction since young people strive to create a balance between their ethnic and national identity as well as positive personal characteristics and culture-based narratives. Therefore, the use of marketing by *Black Panther t*hat focused on displaying influential Black actors in roles of power developed a story that was appealing to young minority populations. As Gbadamosi (2015) argues, celebrity endorsements and marketing communications, and social need are among the factors that formulate the relevance of certain brands and events. Thus, the recognition of *Black Panther* as a major event in the history of comic-based and action films could further contribute to moviegoers' decisions.

Another type of marketing, consumer reviews, is done by people who have watched the movie. Here, the relevance of ethnicity to consumers' choices needs examination as well. Lin and Xu (2017) investigate the power that word-of-mouth and its specific aspects can have on people's purchasing outcomes. The authors demonstrate that reviewers' ethnicity is one of the major factors that contribute to people's final decisions in engaging with services or products. Applying this finding to present research questions, one may argue that community work done by both marketers and activists was an essential contributor to the final decisions of moviegoers. The use of reviews as an advertising tactic is especially relevant to movies that display some new ideas or raise concerns from some groups. *Black Panther* introduced many Black characters to the Marvel Comics Universe (MCU), and its release happened during political tensions in the US (Lang & Lopez, 2018). Thus, the value of reviews was significant in discussing the quality of the picture and making future viewers commit to seeing the film.

People's motivations for attending a movie theater may differ from one person to another. However, some similarities in moviegoers' decisions can be researched in more detail. Flynn (2018) argues that a film's novelty, connections to a larger franchise, and a sense of community have an impact on people's choices. Kara (2018) found that the movie *Black Panther* was a lot more than just a movie, but a movement that would bring forth discussions on racism, injustice, colonialism, and sexism. Because of these factors, this is why the movie was so important not just to the black community but the mainstream community as well. *Black Panther*, in particular, is a movie that contains elements of all mentioned aspects. It introduces something new in the form of a new major character. It is a part of the MCU, and the franchise's fans are influenced to attend due to their interest in the overarching narrative. Social media and community interest are also important – people's discussion of the film increases the interest and creates a sense of participation in an event (Flynn, 2018). *Black Panther* was among the films that gathered attention both from comic fans and casual moviegoers (Lang & Lopez, 2018). As a result, the combination of these factors supported by ethnic marketing led to the movie's box office success.

THEORETCIAL FRAMEWORK AND MODELS

Theoretical Model

The following theoretical model is presented with the proposed factors and items for the study. The model proposes that eight integrated marketing communication factors influenced movie ticket purchases for the *Black Panther*

movie. We determined these eight advertising and PR factors have an influence on movie ticket purchases for *Black Panther* (see Figure 1).

Three research questions guided this investigation. This study proposes the following research questions that guided this study. The research questions that drive the investigation of the study are as follows: (a) R1: *What are the key ad variables that influence movie goers to see the movie*; (b) R2: *How many key ad factors are there that are a major influence on movie goers to see the movie*; and (c) R3: *How many key ad variables were an influence both online and offline ticket sales to see the movie?* Lastly, the hypothesized conceptual model of the study is presented. The model proposes that eight integrated marketing communication factors influenced movie ticket purchases for the *Black Panther* movie (see Figure 2).

Figure 1. Hypothesized Theoretical Model:
The Eight Integrated Marketing Communication Advertising Factors

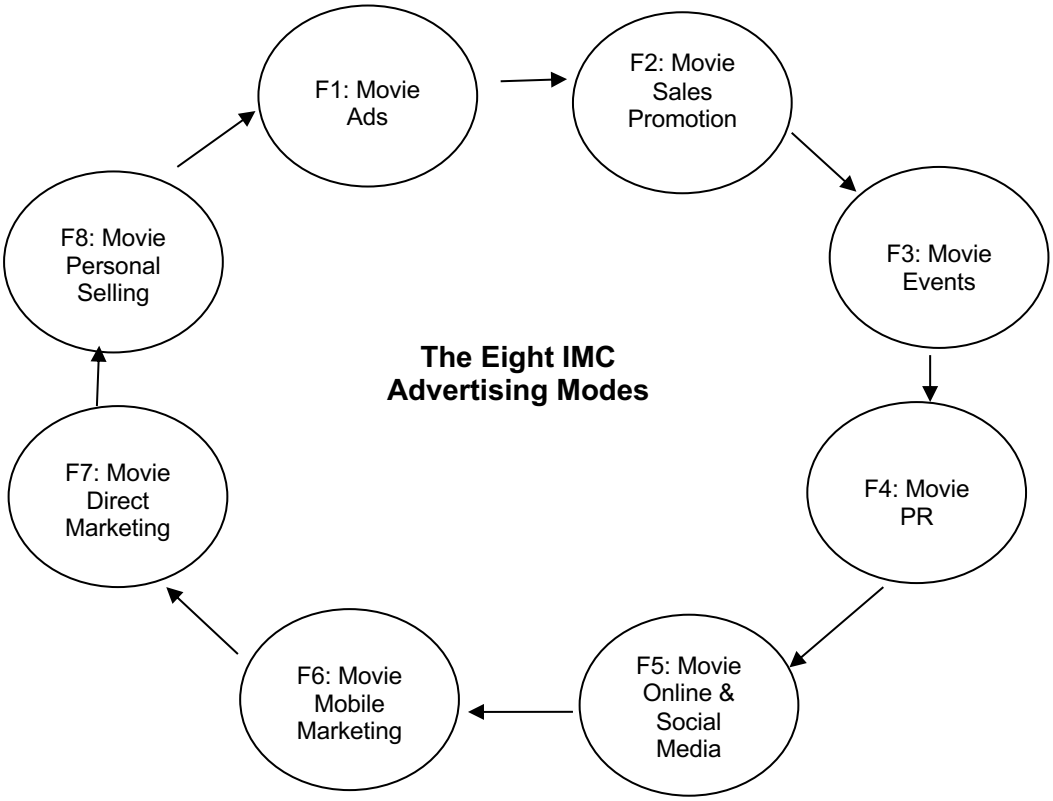
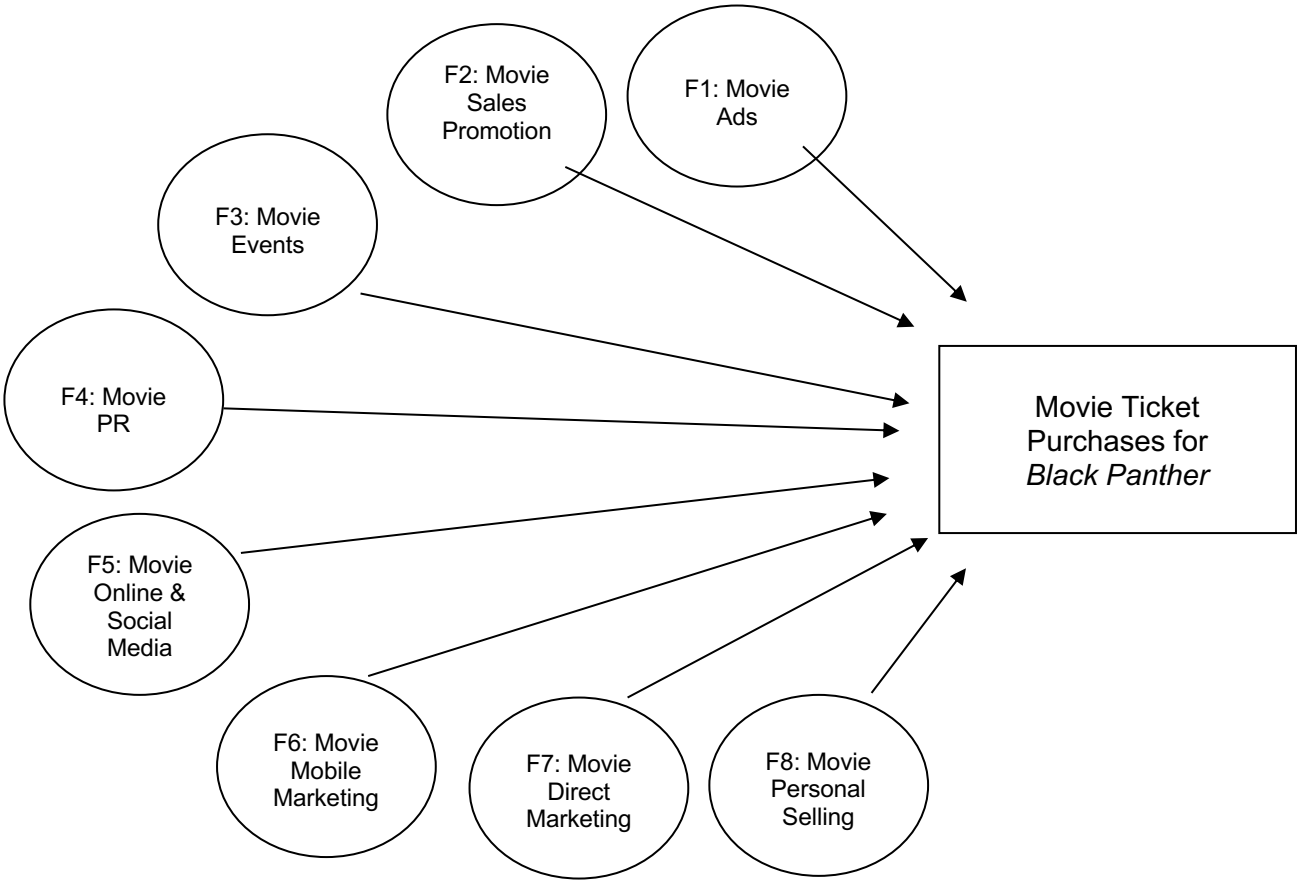


***Figure 2*:** Hypothesized Conceptual Model of the Study for Consumer Behavior



Research Questions/Hypotheses

The first objective of this research was to identify the key advertising factors in that influenced moviegoers to the movie *Black Panther*. Our three research questions asked what key factors and variables influence moviegoers to see the movie. The researchers were interested in the key items (e.g., social media, sneak previews, merchandising and etc.) that was an influence on moviegoers to see the film. Three research questions guided this investigation. This study proposes the following research questions that guided this study:

- RI: What are the key ad variables that influence moviegoers to see the movie?
- R2: How many key ad factors are a major influence on moviegoers to see the movie?
- R3: How many key ad variables were an influence both online and offline ticket sales to see the movie?

Hence, the researcher's wanted to explore the key advertising items that influenced moviegoers.
There have been no prior studies that examined the key advertising items that influenced consumers to see this film. The researchers explored a variety of means through which advertising can be influence a moviegoer to see this film.

METHODOLOGY

Research Methodology

Sample and Data Collection. The sample was limited to moviegoers who had seen the *Black Panther* movie. This research involves a study undertaken to examine integrated marketing communications influence on consumer behavior with the movie, *Black Panther*. Two studies were involved with this research. We conducted a pilot study (n = 146) and a formal study (n = 372). The surveys were administered via internet through SurveyMonkey.com. The survey was developed with the help of a research team, literature review, researchers, and consumer research on online consumers. Guided by some of the previous research, this study has designed a research methodology to empirically test consumer's experience marketing construct that was developed and defined earlier in the conceptual formation phase. This study was collected nationwide in the United States. At the completion of the data collection from 500 participants across the country, 372 completed surveys were taken resulting in a 71-percent response rate.

Research Design. A review of the existing literature revealed no scales that had previously been used to capture the emphasis on the movie, *Black Panther.* Following the development of the scale (DeVellis 1991), survey questions were generated and subsequently developed for the first-generation instrument. To accomplish this goal, this study has employed a two-step methodology. First, from a review various scholars' articles, the research conducted a pilot study, then a formal study. This research has generated 38 items in the questionnaire which was tested through following the face validity.

Instrument. The participants were asked to rate the 38 IMC ad items relating to the movie, *Black Panther*. The instrument used for this the study is a researcher-developed first-generation instrument that was validated for reliability. The researcher-designed instrument also collected demographic information such as gender, age, marital status, education level and other data. This study has also conducted a pilot study with 146 respondents from around the country in the United States. Based on the results from the pilot study, researchers made some minor adjustments to the instrument. In addition, each of the named items was measured using a seven-point rating scale (1 = *Strongly agree*; 2 = *Agree*; 3 = *Somewhat agree*; 4 = *Neither agree nor disagree*; 5 = *Somewhat disagree*; 6 = *Disagree*; and 7 = *Strongly disagree*). Second, a formal study was conducted with 372 respondents from around the country in the United States.

Statistical Analyses Design

Variables. A series of demographic variables were used in analyses, including the moviegoers' age, educational level, gender, marital status, and movie attendance frequency. Other variables included were the favorite movie types, and how many times they saw the *Black Panther* movie. Integrated marketing communication (IMC) advertising items from the conceptual model. They identified during factor analysis were used in each hypothesis test. Those items assessed the *Black Panther* moviegoers' views of IMC in terms of what ads influenced their decision to see the movie. All 31 IMC items were measured using a seven-point Likert scale.

Data Analysis Procedures

Analysis. Analysis of the data involved descriptive statistics, factor analysis, analysis of variance, and regression analysis. The research team collected the data and it was cleaned and analyzed with the three statistical software packages, SPSS Version 23.0 (Statistical Package for the Social Sciences), Smart PLS-SEM 3.8.2, and AMOS Version 23.0 (Analysis of Moment Structure).

The IMC factors were developed from a pool of 31 items included in the survey used for the study. The IMC items were selected based on theoretically supported measures of IMC advertising items present in the literature. The variables and items were validated through a multivariate statistical analysis. A proposed theoretical model was developed for the purpose of applying a Structural Equation Modeling (SEM). The software used for the data

analysis were SPSS, AMOS and Smart PLS-SEM. The software was used to confirm the theoretical model and model goodness of fit.

Thirty-one items representing aspects of IMC ads were subjected to exploratory factor analysis using principal component analysis with a varimax rotation. Scores for three factors of the 31 items were reverse coded to standardize the direction of responses. A factor loading of 0.30 or higher and an eigenvalue of 1 were used to determine salient factors (Kline 1998).

Comparison of factor-to-item loadings resulted in three factors. However, some IMC items three were dropped due to low coefficient weights. This resulted in a strong conceptual coherence and the literature and low internal reliability. The remaining three factors demonstrated acceptable reliabilities for exploratory research, all exceeding 0.60.

There are a number of fit indices that have been developed by the researcher to evaluate the model fit. This research used chi-square statistic/degree of freedom as well as model fit indices such as comparative fit index (CFI-) (Bentler, 1990), non-normed fit index (NNFI) and root-mean-square residual (RMSEA) were examined to evaluate the adequate fit of models. Hu and Bentler (1999) and Kline (1998) highlighted that X2/df less than 3 is considered a good fit. For CFI and NNFI, values should be closer to one be considered a good fit. A value of less than 0.5 for RMSEA indicates good fit.

RESULTS

Descriptive Results: Study 1 Results

There were 146 respondents to the study; 60 were male and 86 were female (41/1% and 59% respectively). Of these respondents most of them were under 30 years old (43.9 %). The predominant ethnicity was African American (77%) and most of the respondents had an education of a bachelor's degree (42%). 46% of moviegoers were single and 41.1 % were married. 50% of those surveyed indicated they saw the movie one time, while the other 50% saw the movie more than once (up to six times), and 2.7% did not see the movie at all. The favorite movie genre for both male and female respondents was action. Adventure and animation were the other top genres for males, while superhero and comedy were the other top genres for females.

The demographic data was analyzed using descriptive statistics, which measures central tendency and dispersion. The rationale for this was to examine characteristics between group differences. We wanted to examine and measure the influence of media ads on moviegoers who attend the movie, *Black Panther*. The moviegoers were asked to complete a survey (36-item instrument) to get their opinions what advertising commercials had an effect on them. A total of 146 moviegoers were recruited from around the nation for this formal study. The tables illustrate the descriptive statistics of the sample: gender, age, ethnicity, movie attendance frequency and others. A summary of descriptive statistics for the sample is shown (see Tables 1 to 3).

Table 1: Study 1 - Descriptives of Gender and Age Demographics ($N = 146$)

Moviegoers Gender	**Frequency**	**Percent**
Males	60	41.0%
Females	86	59.0%
Moviegoers Age	**Frequency**	**Percent**
18 - 29	64	44.0%
30 - 39	33	22.6%

40 - 49	24	16.4%
50 - 59	19	13.0%
60 and older	6	4.1%
Total	146	100.0%

Table 2: Study 1 - Descriptives of Ethnicity, Education Level and Movie Attendance ($N = 146$)

Moviegoers Ethnicity	**Frequency**	**Percent**
African Decent	14	9.6
African American (Black)	112	77.0
Afro Hispanic/Latino	17	11.6
Haitian	1	.7
Jamaican	2	1.4
Moviegoer Education Level	**Frequency**	**Percent**
Did not finish High School	7	4.8
High school diploma	25	17.1
Some college	16	11.0
Associates	61	42.0
Bachelors	26	18.0
Masters (Graduate)	11	7.1
Post-Graduate (Professional)	7	4.8
Moviegoer Attendance Frequency	**Frequency**	**Percent**
One time	73	50.0
Two times	37	25.3
Three times	16	11.0
Four times	9	6.2
Five times	5	3.4
Six times or more	2	1.4
Total	146	100.0%

Initial Exploratory Factor Analysis. (EFA), The researchers conducted the initial exploratory factor analysis (EFA). The researchers used SPSS 23.0. A principal component analysis (PCA) with a varimax rotation was used for extraction. The rationale for using the PCA was for when the research purpose is *data reduction* or *exploration* and when the research is a *variance-focused approach* (Garson, 1998; Brown, 2006; Hair et al, 1998). For establishing the criteria for the EFA, we set a benchmark of a minimum coefficient of .3 or higher for the factors. This indicates some of the scale factor loadings measured for this PCA (29 items) met and surpassed the minimum standard for the benchmark coefficient score of greater than .3.

Thus, the factor loadings were considered a reasonable measure in the factor (Rummel, 1970; Mulaik, 1972). For the pilot study, the observed scree test in the EFA suggested an optimal solution of four factors. In order for the researchers to properly assess the validity of the factor solutions, coefficient patterns for each factor, and the theoretical four-factor solution was tested using the statistical properties. To establish the factor names, we conducted a subsequent factor analysis.

In the PCA, the Kaiser-Meyer-Olkin Measure (KMO) of sampling adequacy resulted in a .883, thus above the commonly recommended value of .3; the Barlett's test of sphericity was significant $\chi 2$, df (171) = 1758, $p < .000$. In terms of PCA, a finding that indicators have high loadings on the predicted factors indicates *convergent validity* conceptually. Interestingly, a few items loaded into more than one factor, which indicates good *discriminant validity.* Eigenvalues (λ) are a statistic used in the factor analysis to show how much variation in the group of variables is accounted for by a particular factor (Mulaik, 1972; Rummel, 1970; Tabachnick & Fidell, 2007). The researcher made the decision for the standard for an eigenvalue score is greater than 1.0 (Vogt, 1993). (see Table 3).

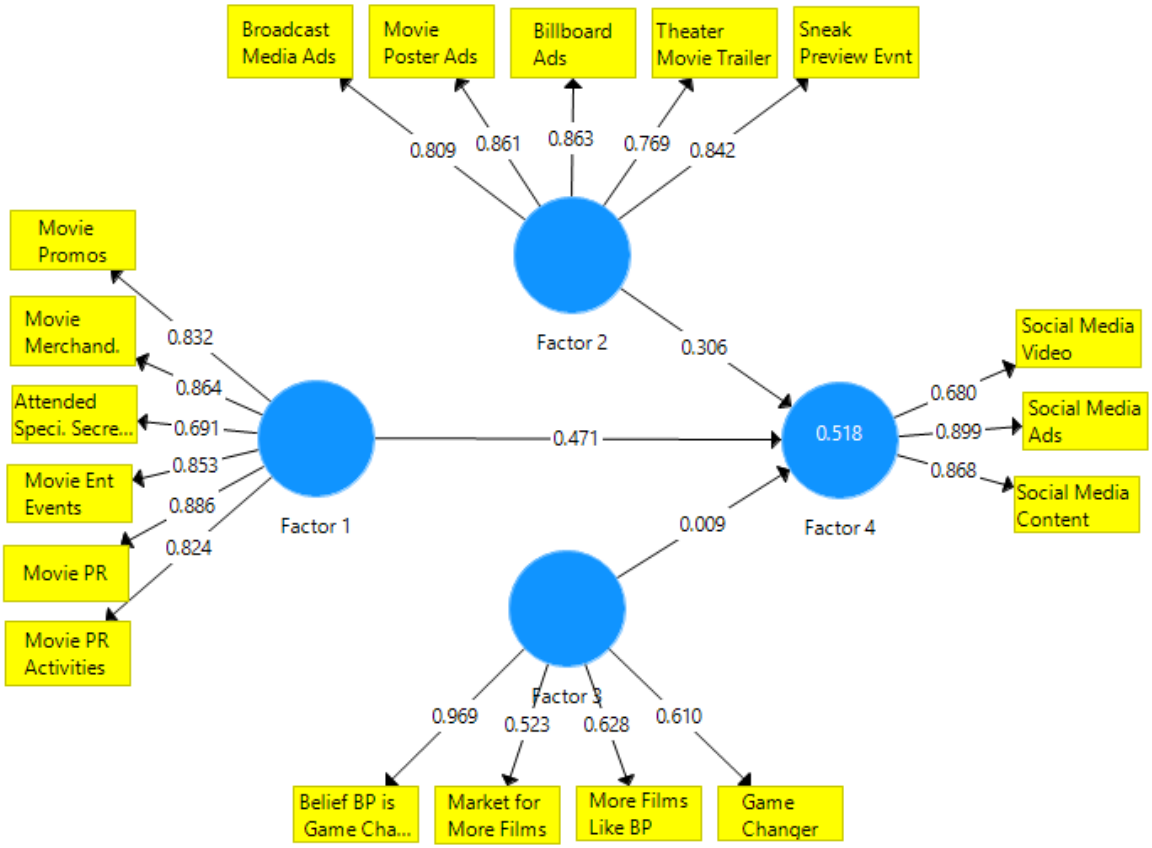
Table 3: Study 1 – Exploratory Factor Analysis (N = 146)

Factors and Variable Items	F1	F2	F3	F4
V27-Movie Entertainment events (African attire parties and etc.)	.844			
V28-Movie public relations (PR) activities for *Black Panther*	.806			
V24-Merchandising (e.g. movie licensed toys, t-shirts, books, and etc.) influence	.716			
V21-Movie promotions (e.g. contests, sweepstakes) played a major influence	.699			
V29-Movie PR activities (e.g. TV appearances)	.693			
V26-Movie Culture Influence- African culture and imagery was an influence	.643			
V25–Movie Screening-Attended a special screening party for the *Black Panther*	.629			
V18-Movie Broadcast media ads for *Black Panther* played a major influence		.840		
V22-Movie-in-theater movie trailer of movie played a major influence		.740		
V19-Movie poster ads for *Black Panther* played a major influence		.713		
V23-Movie sneak preview showing events for movie played an influence		.651		
V20-Movie Billboard ads (e.g. regular, digital) for *Black Panther* was an influence		.601		
V36-Movie Support-Would you support a sequel to *Black Panther*			.881	
V35-Movie Prefer/Like to see more films like *Black Panther* films			.872	
V34-Movie Market-There is a market for more diverse films in Hollywood.			.666	
V33-Movie Breakthrough-Believe that *Black Panther* is a game changer.			.635	
V32-Movie Social media content influence (Twitter and Instagram)				.656
V31-Movie Social media ads (Facebook and etc)				.654
V30-Movie Social media video ads (YouTube)				.636
Eigenvalues	8.118	2.766	1.198	1.020
% of Variance	42.72	14.56	6.304	5.370

Note: Results of 3-factor solution (and 19 items) with principle axis factoring extraction method with a varimax rotation and a Kaiser Normalization. Benchmark for this study, a minimum coefficient of .3 and higher will be used as the standard.

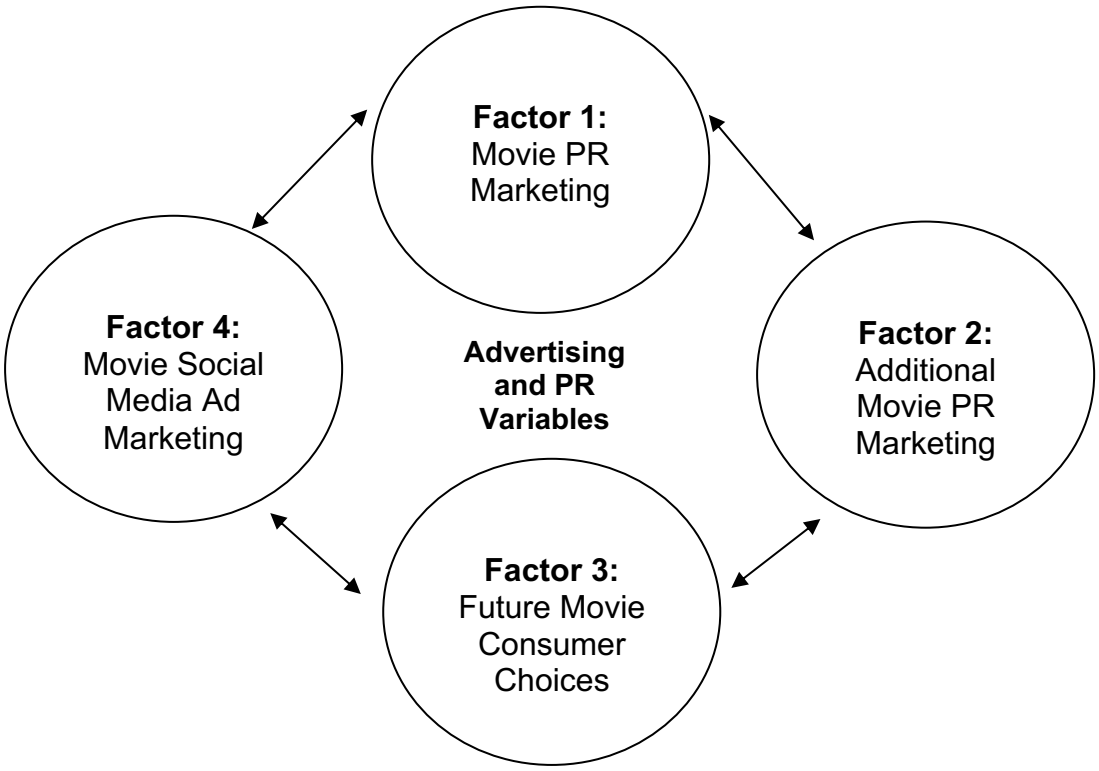
For this study, the researchers conducted Partial Least Squares Structural Equation Model (PLS-SEM). This was used for: (a) confirm the conceptual model with the latent variables; and (b) examine the relationships between latent variables. This was used to confirm the conceptual model with the latent variables and to examine the relationships between latent variables. The revised theoretical model indicates four factors: (a) *Movie traditional IMC marketing*; (b) *Movie sneak preview and offer ads marketing*; (c) *Post/future purchasing behavior*; and (d) *Movie alternate media marketing.*

Figure 3: Study 1 – Partial Least Squares-Structural Equation Modeling
Confirmatory Factor Analysis



The researchers wanted to examine the path coefficients between the individual variables in each of the four factors. The evaluation of the PLS-SEM results begins with an assessment of the reflective measurement models (e.g., Factor 1, Factor 2, Factor 3, and Factor 4). Figure 3 shows the results and evaluation path coefficient outcomes. We find that all three reflective measurement models meet the relevant assessment criteria. More specifically, the outer loadings were mixed indicating the indicators exhibit a below marginal level of reliability (e.g., > 0.50). However, each of the individual items in each factor had high coefficient loadings above 0.50, providing support for the each of the factors. The factor items had values of 0.865 and higher, which is clearly above the expected minimum level of 0.70 which is acceptable. We found some significant relationships with a few of the factors. We found two factors that indicated a strong relationship. We found Factor 1 had a moderately strong relationship with Factor 4, a path coefficient of 0.471. This indicated a relationship with the two factors was moderately strong. Next we found the Factor 2, had a below moderate relationship with Factor 4 with a path coefficient of 0.306. This indicates the relationships was not strong between the two factors. This indicated a moderate relationship with the two variables. As for the other factors, we did not find any other significant relationships (see Figure 3). Thus, the strong relationship and path coefficient was with Factor 1 and Factor 4. The factors have been renamed and revised (see Figure 4).

Figure 4: The Revised Theoretical Model



RESULTS

Descriptive Results: Study 2 Results

The demographic data was analyzed using descriptive statistics, which measures central tendency and dispersion. The rationale for this was to examine characteristics between group differences. The objective for the descriptive statistics is to transform large groups of data into a more manageable form (Huck, Cormier & Bounds, 1974). We wanted to examine and measure the influence of media ads on moviegoers who attend the movie, *Black Panther*. The moviegoers were asked to complete a survey (36-item instrument) to get their opinions what advertising commercials had an effect on them. A total of 372 moviegoers were recruited from around the nation for this formal study. The tables illustrate the descriptive statistics of the sample: gender, age, ethnicity, movie attendance frequency and others. A summary of descriptive statistics for the sample is shown (see Tables 4 to 6).

Table 4: Study 2 - Descriptives of Demographics of Moviegoers (a) ($N = 372$)

Moviegoers Gender	**Frequency**	**Percent**
Males	186	50.0%
Females	186	50.0%
Moviegoers Age	**Frequency**	**Percent**
18 and younger	8	2.2%
19 - 24	66	18.0%

25 - 29	103	28.0%
30 - 35	70	19.0%
36 - 39	31	8.3%
40 - 45	29	8.0%
46 - 49	18	5.0%
50 - 55	24	6.5%
56 - 59	15	4.0%
60 and older	8	2.2%
Total	372	100.0%

Table 5: Study 2 - Descriptives of Ethnicity of Moviegoers (b) ($N = 372$)

Moviegoers Ethnicity	**Frequency**	**Percent**
African American (Black)	165	44.4
Indian (Native American)	57	15.3
Afro Hispanic/Latino	43	11.5
Other Ethnicity	35	9.4
African descent (all surrounding lands)	32	8.5
Indian (India)	11	3
Hispanic	9	2.4
Middle Eastern	6	.3
Asian	5	1.6
Haitian	4	1.3
Jamaican	3	1.1
White	2	.8
Hebrew	1	.3
Moviegoers Education	**Frequency**	**Percent**
Did not finish High School	2	.5
High school diploma	39	10.5

Some college	71	19.1
Associates	40	11.0
Bachelors	150	40.3
Masters (Graduate)	59	16.0
Post Graduate (Professional)	11	3.0
Total	372	100.0

Table 6: Study 2 – Descriptives of Movie Attendance Frequency (c) (N = 372)

Movie Attendance Frequency	**Frequency**	**Percent**
One time	94	25.3
Two times	116	31.2
Three times	73	20.0
Four times	45	12.1
Five times	12	3.2
Six times or more	32	8.6
Total	372	100.0%

Exploratory Factor Analysis for Study 2

The purposes of Study 2 were to: (a) retest and replicate the factor structure of the instrument via exploratory factor analysis (EFA); (b) retest the measurement model derived from the EFA in Study 1 through a confirmatory factor analysis (CFA); and (c) to assess the internal consistency of the RMS factors. For conducting the statistical analyses of the data were performed using SPSS 23.0 software. AMOS 23.0 software was used for the Structural Equation Modeling (SEM) was used to conduct the SEM. For this study, we conducted SEM. This was used for: to confirm the conceptual model with the latent variables and examine the relationships between latent variables.

To test for measurement invariance, the instrument was subjected to a two-phase confirmatory factor analysis approach. First, we tested the reflective measures and found that the completely standardized factor loadings were statistically significant, as shown in Table 7. A review of the items loading on the three factors is suggestive of convergent validity, as all items loaded at 0.50 or greater and had statistically significant t-values ($p < .05$). The respective items for all measures are listed in Table 2.

Second, we conducted PCA, the model revealed a three-factor model, and the final model was the free (unconstrained) three-factor measurement model. The reported coefficient alphas range from 0.806 to 0.827 and are within the acceptable range of the minimum cutoff (.300). However, when the results conducted the EFA this time, the factor structure significantly differed from both the hypothesized model and the EFA in Study 1 (see Table 7).

The results of EFA were consistent. In the PCA, the Kaiser-Meyer-Olkin Measure (KMO) of sampling adequacy resulted in a .913, thus above the commonly recommended value of .3; the Barlett's test of sphericity was significant $\chi 2$, df (120) = 3739.139, $p < .000$. Concerning the PCA, a finding that the indicators have high loadings on the predicted factors indicates *convergent validity* conceptually. Interestingly, a few items loaded into more than one factor, which indicates good *discriminant validity.* The researcher made the decision for the standard for an eigenvalue score is greater than 1.0 (Vogt, 1993).

This three-factor model accounted for a total of 73.0% of the variance in factor scores. Thus, structure coefficients were used to develop factor labels, which were named as such: (a) Factor 1: *Combination PR Activities* consisted of nine items reflecting ad influence on moviegoer behavior for *Black Panther*; (b) Factor 2: *Traditional Movie PR Activities* consisted of six items reflecting five basic consumer behavior beliefs; and Lastly, Factor 3: *Current and Future Preferences* consisted of four items reflecting three basic consumer behavior beliefs (see Table 7).

Table 7: Study 2 - Results of the Factor Analysis (N = 372)

Factors and Variable Items	F1	F2	F3
***V27-Movie Entertainment events (African attire parties etc.)**	**.806**		
V24-Merchandising (movie licensed toys, t-shirts, and etc.) influence	.757		
V28-Movie public relations (PR) activities for '*Black Panther'*	.754		
V25-Movie special screening party for the '*Black Panther'* (attended)	.745		
V29-Movie PR activities (e.g. TV appearances)	.688		
V32-Movie Social media content influence (Twitter and Instagram)	.665		
V31-Movie Social media ads (Facebook and etc.)	.648		
V21-Movie promotions (e.g. contests, sweepstakes) played a major influence	.612		
V26-African culture and imagery in movie played a influence in my decision	.584		
V22-Movie in-theater trailer played a major influence		**.745**	
V19-Movie poster ads for '*Black Panther'* played a major influence		.744	
V20-Movie Billboard ads (e.g. regular, digital) for movie played an influence		.672	
V18-Movie Broadcast media ads for '*Black Panther'* played a major influence		.650	
V23-Movie sneak preview for movie played a major influence decision		.625	
V30-Movie Social media video ads (YouTube)		.506	
V35-Like to see more films like '*Black Panther'* with black superhero films?			**.827**
V36-Would you support a sequel to '*Black Panther*?'			.789
V34-There is a market for more diverse films in Hollywood.			.744
V33-Believe that '*Black Panther'* is a game changer.			.724
Eigenvalues	7.480	1.334	1.047
% of Variance	46.75	8.339	6.544

Note: Results of 3-factor solution (and 19 items) with principle axis factoring extraction method with a varimax rotation and a Kaiser Normalization. Benchmark for this study, a minimum coefficient of .3 and higher will be used as the standard.

Confirmatory Factor Analysis and Structural Equation Model Analyses

A confirmatory factor analysis (CFA) was conducted to assess the construct validity of the model. The researchers wanted to assess convergent validity and determine confirmation of the existence of a construct model. To assess convergent validity, the loading estimates and construct reliability were investigated. To assess convergent validity, we used SPSS AMOS 23 analyze the data. It was used to assess and test using the measurement model by determining the significant t-value of each item's estimated pattern coefficient in the construct factor (see Figure 5).

A structural equation model (SEM) was conducted to examine the predictability of the moviegoer's reaction to the influence of advertising models for seeing the movie, *Black Panther*.

The CFA was also performed to measure the unidimensionality, convergent and discriminant validity in the RMS instrument. The CFA results provide overall fit indices ($\chi 2 = 971.11$). The $\chi 2$ test in the table also clearly shows compelling results that the sample was not drawn from the hypothesized population. Based on the GIF results, the statistical test supports the rejection of the hypothesized model.

The RMSEA coefficients was close to meeting the benchmark of the desired confidence intervals (.04 –.11 and .06 –.08, respectively). RMSEA (root mean square error of approximation) = 0.122, GFI (goodness-of-fit) = 0.78, AGFI (adjusted goodness-of-fit) = 0.72, CFI (comparative fit index) = 0.87. RMR (root mean square residual) = 0.39 and NFI (normed fit index) = 0.82. Table 8 presents the results of the CFA analysis and the fit statistics results.

Figure 5 SEM Results for the Black Panther Advertising Media Influences (*k* = 19 Items)

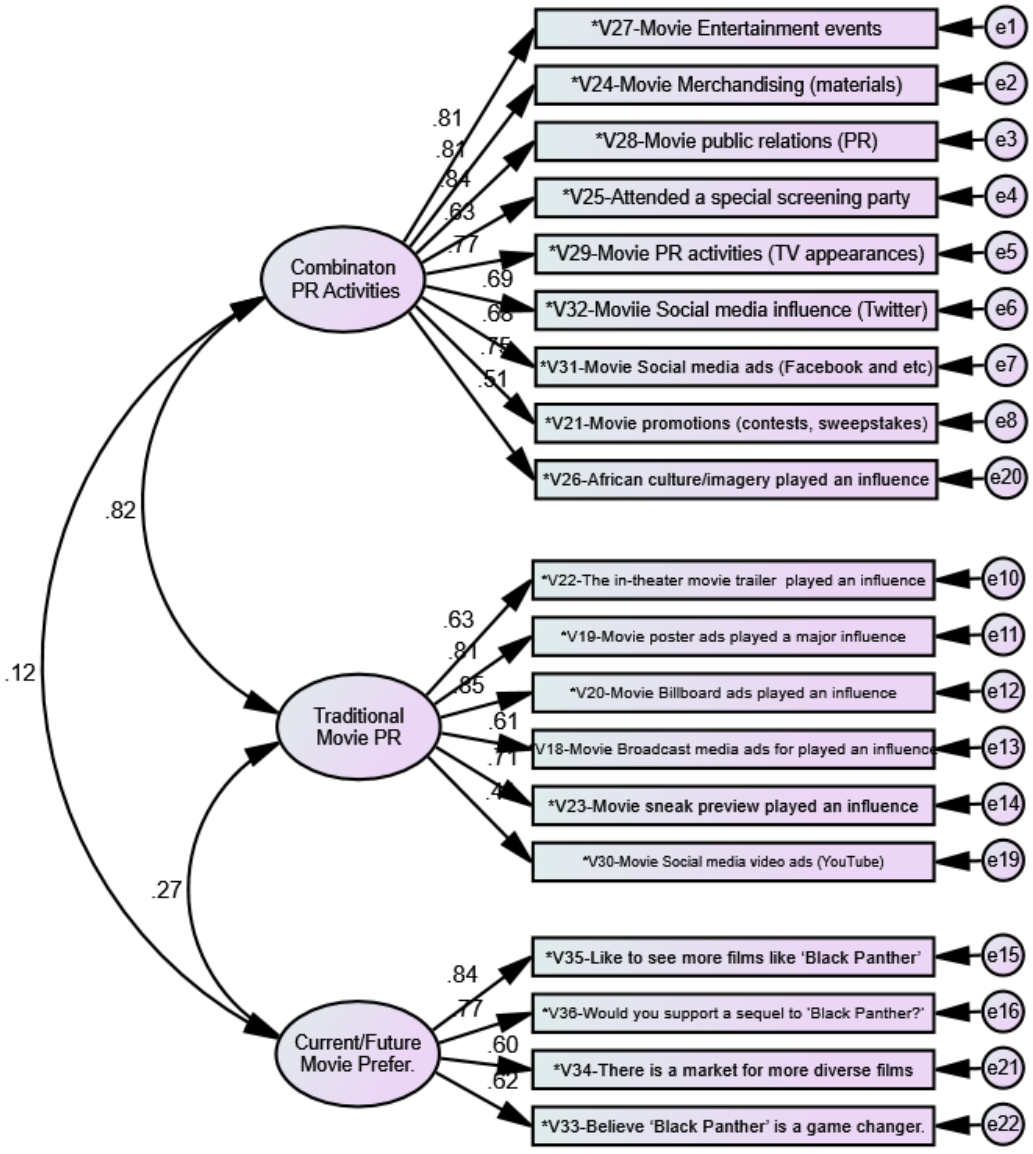
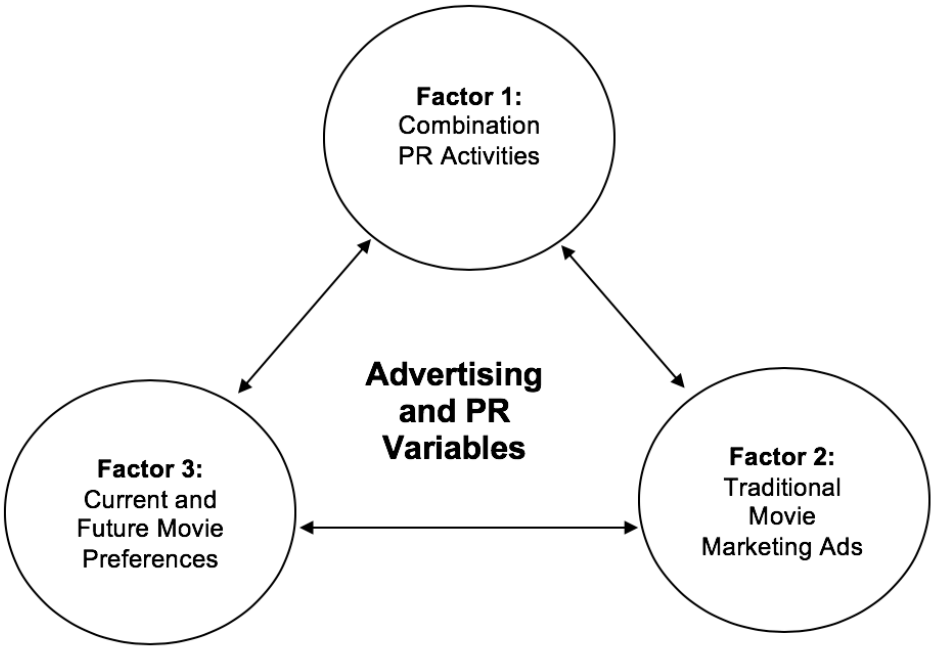


Table 8: Study 2 - AMOS ® Goodness-of-Fit Statistics

Goodness of Fit Statistics	Value	
$\chi 2$ test (df = 146)	971.11	(p = 0.0000001)
RMSEA – Root Mean Square Error of Approximation	0.122	(test of close fit p = 1.00)
RMR – Root Mean Square Residual	0.39	
GFI – Goodness-of-Fit Index	0.78	
AGFI - Adjusted Goodness-of-Fit Index	0.72	
CFI – Comparative Fit Index	0.87	
IFI – Incremental Fit Index	0.87	
NFI – Normed Fit Index	0.82	
PCFI – Parsimony Goodness-of-Fit Index	0.74	
PNFI – Parsimonious Normed Fit Index	0.72	
TLI – Tucker-Lewis Index	0.84	
AIC – Akaike Information Criterion	1059.11	
BCC – Browne-Cudeck Criterion	1063.97	
BIC – Bayesian Information Criterion	1232.83	
CAIC – Consistent AIC	1276.83	

(N = 372)

Figure 6: The Finalized Theoretical Model



Regression Modeling

A linear regression was conducted to determine if the factor items as predictor variable influence on the dependent variable, *movie attendance frequency* to see *Black Panther*. We applied linear regression models to test how the gender influences management decisions. Table 9 shows the results of the regression of the three factors. In the regression analysis, none of the regression assumptions are violated.

The results of the regression model showed that in Factor 1, the item, V25-*Special screening activities* was a significant influence on moviegoers with movie attendance frequency to see *Black Panther*. Next, the factor item, V26-*African culture and imagery* was a significant influence as well on movie attendance frequency. In Factor 2, the item, V22-*In-theater movie trailer ad* was a significant influence on moviegoers with movie attendance

frequency to see *Black Panther*. Lastly, in Factor 3, had three significant items, V35- *Like to see more films (Black Panther),* V36: *Would support a sequel,* and V33: *Believe BP was a game changer* were a significant influence on moviegoers with movie attendance frequency to see *Black Panther*. The regression results some factor items were a significant influence as a predictor variable in the data (see Table 9). Also see Figure 6 and Figure 7 for the finalized theoretical model and conceptual model.

Figure 7: The Finalized Conceptual Model

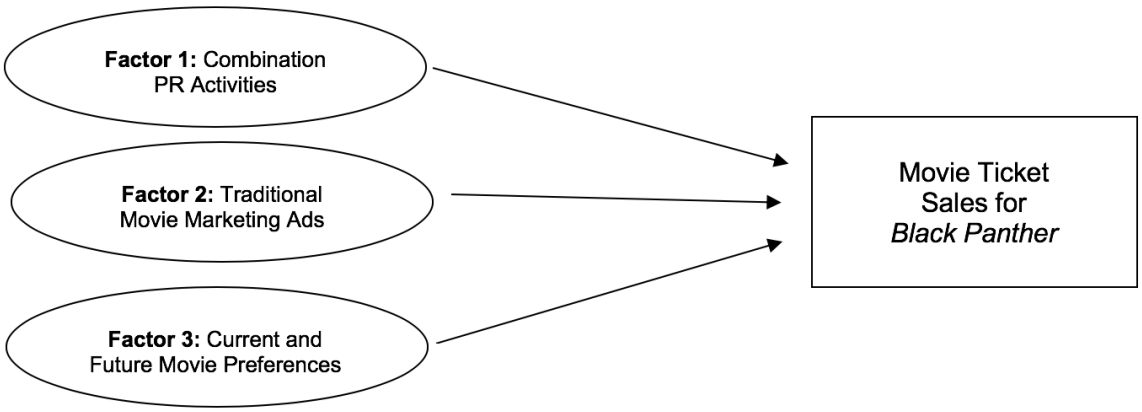


Table 9: Study 2 – Factor Regression Modeling on Movie Attendance Frequency (*N* = 372)

Factor 1 Variables	***B***	***SE B***	**β**	***t***	***p***
V27: Movie entertainment events influence	-.087	.065	-.112	-1.341	.181
V24: Merchandising (movie) influence	-.005	.038	-.006	-.073	.942
V28: Movie PR activities influence	-.065	.078	-.079	-.837	.403
V25: Special screening influence	-.155	.051	-.205	-3.038	*.003
V29: Movie PR activities (TV appearances)	.095	.070	.114	1.365	.173
V32: Social media content influence (Twitter)	-.027	.059	-.034	-.456	.648
V31: Social media influence content (Facebook)	-.019	.061	-.023	-.310	.757
V21: Movie promotions (ads) influence	.059	.059	.072	.984	.326
V26: African culture and imagery influence	.105	.050	.125	2.088	*.038
Factor 2 Variables	***B***	***SE B***	**β**	***t***	***p***
V22: In-theater movie trailer ad influence	.123	.059	.137	2.085	*.038
V19: Movie poster ad influence	-.045	.071	-.051	-.637	.524
V20: Billboard ad influence	-.138	.068	-.158	-2.022	.044
V18: Broadcast media ad influence	.111	.059	.123	1.899	.058
V23: Sneak preview events influence	.002	.058	.002	.035	.972
V30: Social media video influence (YouTube)	.035	.050	.038	.689	.491
Factor 3 Variables	***B***	***SE B***	**β**	***t***	***p***
V35: Like to see more films (*Black Panther*)	.288	.076	.254	3.783	*.000
V36: Would support a sequel	.383	.079	.310	4.859	*.000
V34: There is a market for more films (BP)	.067	.069	.054	.969	.333
V33: Believe BP was a game changer	-.268	.063	-.242	-4.244	*.000

DISCUSSION

In this research, the objective of this research was to identify the key advertising factors in that influenced moviegoers to see the movie *Black Panther*. The results of the study reveal some five key findings. First, the conclusions of the research suggest some both expected and unexpected results. The results indicate the there are some significant variables that influence movie goers to see Marvel's *Black Panther* movie.

Second, the results indicated one fourth of the moviegoers saw *Black Panther* as least once; however, one third of the moviegoers saw Black Panther at least twice. Conversely, movie mail ads and movie sneak preview events have an influence on moviegoers, the results indicated both played a major influence in their decisions.

Third, we found three factors influenced moviegoers to see the movie, *Black Panther*: (1) *Combination PR Activities*; (2) *Traditional Movie Marketing Ads*; and (3) *Current and Future Movie Preferences*. These factors influence people to see the film.

Fourth, we also found when we used the movie ad variables as endogenous variables, there were two that were a strong influence on movie goer frequency: (1) V25-*Attended a special screening party for the 'Black Panther'* and (2) V26-*African culture and imagery in movie played a major influence in my decision.* We found that predictor variables in Factor 1 on Movie Frequency.

Lastly, we found the predictor variables in Factor 2 (*Traditional Movie Marketing Ads*) and Factor 3 (*Current and Future Movie Preferences*) had a strong influence on moviegoer frequency. Based on the results we found when used the movie ad variables as endogenous variables, there were three that were a strong influence on movie goer frequency: (1) V22-*The in-theater movie trailer of movie played a major influence*; (2) V35-*Like to see more films like 'Black Panther' with black superhero films*; and (3) V33-*Believe that 'Black Panther' is a game changer.*

From our results, it appears that viewing the movie, *Black Panther* that three advertising factors play a strong role in why moviegoers saw the film. This research contributes to the progress of formulating and measuring the constructs of movie marketing advertising and integrated marketing communications (IMC). Notwithstanding, the movie ad items used for measuring these constructs in the moviegoer consumer behavior were tested and refined. Our instrument proved reliability and validity. This research was confirmed and could be used by further studies detecting the relationships among these constructs in an extended context.

CONCLUSIONS

This study explored the advertising influences on moviegoers of Marvel's, *Black Panther.* The aim of this was to explore advertising modes and their influences on consumer behavior of moviegoers. This study is one of few studies to examine ethnic consumers and it influence on moviegoer behavior. While several of the prior studies emphasized the multidimensional nature of consumer behavior in terms of consumer satisfaction, consumer trust, and consumer loyalty, this research sought to examine how movie advertising channels influence moviegoers to see *Black Panther*. From a theory development perspective, finding three distinct integrated marketing communications (IMC) dimensions (advertising, sales promotion, promotions, direct marketing and etc.) affirms their influence on ethnic moviegoers. This study examined their consumer behavior decisions with movies.

Based on our findings, there were three conclusions from this study. First, moviegoers saw *Black Panther* at least twice at minimum. Second, movie mail ads and sneak preview events have an influence on moviegoers. Lastly, we found there were three factors influence people to see the film: combination public relationship (PR) activities; traditional movie marketing ads and current and future movie preferences.

Also, we found some four significant factor items that influence movie attendance for *Black Panther*. Our findings show there was some significant influences on ticket sales and movie attendance: special screening parties for 'Black Panther'; African culture and imagery in movie played a major influence on moviegoer decisions; and in-theater movie trailer of movie played a major influence. For future consumer behavior and choices there were two key findings. First, ethnic consumers like to see more films like *Black Panther* with black superhero films. Second, ethnic consumers believe that *Black Panther* is a game changer. The findings suggest that Hollywood filmmakers should pay close attention to the ethnic consumer segments, their movie choices and the ads that influence their consumer behavior.

This research contributes to the progress of formulating and measuring the constructs of ethnic consumer behavior based on ad influences such as advertising, sales promotion, promotions, direct marketing and etc. Similarly, the

IMC items measuring these constructs in the moviegoer retailing were tested and refined. Our first-generation instrument proves to be reliable and valid, and confirmed the research can be used by further studies detecting the relationships among these advertising constructs in an extended context.

Implications

The findings also provide some key managerial implications. The fundamental premise of the finalized model was that movie theaters and retailers should understand comprehensively the critical factors necessary to achieve maximize movie attendance with ethnic consumers. By recognizing and analyzing these diagnostic indicators, movie theaters retailers will be better able to formulate and implement their strategic plans. Lastly, movie theater retailers can learn about the uncovered relationships between service quality and customer satisfaction, trust, and loyalty, retailers can effectively allocate their resources and develop a rational plan to improve their service quality under specific business circumstances.

Limitations

Although the results presented in this study are useful in understanding the relationships between service quality and consumer behavioral factors items such as advertising, sales promotion, promotions, direct marketing and etc., there exist some limitations that need to be addressed.

First, the sampling frame was done entirely online. Offline moviegoer consumers were missed for our study. This may lead to loss of generalizability, since offline consumers were not a part of the whole movie theater retail customers' population. Second, the sample of this study used appears to more homogenous and yielded reliable data, it would be quite fruitful to include more diverse demographics and control variables, which lead to more generalizable results. This would allow for possible segmentation groups in terms of consumers' advertising influences and preferences.

Future Research

Future studies could use a more representative sample of offline ticket sales with moviegoers, which lead to some interesting findings. Secondly, future studies could focus on more advertising dependent variables and development of a hypothesized model, (e.g. satisfaction, brand trust, and brand loyalty) as opposed to a singular focus on ticket sales and movie attendance. These variables would most likely to be influenced by other advertising variables other than (advertising, sales promotion, promotions, direct marketing and etc.), which were not the focus of this study.

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The Relationship Between Board Diversity, Ownership Structure and Bank Performance In Tunisian Market

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Abstract
This research focuses on the impact of internal governance mechanisms on the performance of listed Tunisian banks during the period 2005-2016. We try to detect the impact of banking governance, not only through the ownership structure but also through the board of director's characteristics, on the banking performance. Our results confirm the importance of board control within the bank, but they also state that there are other mechanisms such as the ownership structure that must also be taken into account. Research shows that the ownership concentration, board size, independent and institutional administrators affect bank performance. Likewise, Duality is positively associated with the bank profitability.

Keywords: Bank Governance, Ownership Structure, Board Characteristics, Banking Performance

1. Introduction

Emerging economies, characterized by economic reforms series, financial growth and integration, are still under development. Investors attracted by these growth rates can take advantage of these opportunities. The banking sectors of emerging economies often play a critical role in the success or failure of these initiatives. These sectors attract much attention, particularly because of the rich and complex environment induced by the dynamic and rapid changes in their ownership structures, but also by their governance mechanisms evolution. The banking system stability and the banks' performance development favor the smooth running of economic activities. Governance plays a crucial role in ensuring the banks stability. The European Banking Authority claims that governance weaknesses caused by insufficient accomplishment of the existing guidelines have not been a direct cause of the financial crisis, but a key factor. As a result, weak governance contributes to a decrease in bank

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profitability. Arie Pratama (2018) investigate corporate governance variables and whether they affect related-party transactions, uses seven proxies for corporate governance variables: ownership concentration, directors' compensation, size of the board of directors, number of independent commissioners, audit firm, size of the audit committee and debt ratio. He used age, size and profit as control variables. They conclude that not all of the proxies had a significant effect on performance. Fakhfakh and al (2009) conclude that the analysis of the economic performance should not do this only through macroeconomic variables and independent governance systems.

The corporate board enjoys a prominent place in the banks internal governance system. The corporate board is a body of control, recruitment and evaluation; it also ensures the strategy accomplishment. The corporate board must encourage the executive to maximize value creation in order to ensure consensus between the firms various partners and its manager and thus act in the shareholders' interests. The company director is one of the governance pillars; oversees the execution of the corporate board decisions and ensures the company's general management.

Extensive literature has analyzed the ownership structures effect and governance mechanisms on bank performance. These studies tend to focus primarily on the short-term effects of ownership and often ignore the long-term effects of ownership change. Moreover, despite the extensive literature on the effects of foreign banks on emerging markets, many studies did not distinguish between different ownership structures: institutional, concentrated, dispersed or public.

The recent implications of the Tunisian banks' liquidity crisis after 2011 on performance and risks lead us to investigate the internal governance mechanisms evolution to deal with these risks in banking sector. Notably because the empirical literature often provides ambiguous and country-specific evidence that shows that a particular type of property generates higher performance than others.

This article contributes to this literature by studying the effects of the banking ownership structure and the bank's board on its performance. We test the effect of internal governance mechanisms on bank performance in Tunisia. Our work is directly related to the studies of Berger et al. (2005) and Lin and Zhhang (2009).

The study's contribution to the growing body of research is four-fold. First, it extends the approach of Berger and al (2005) and Lin and Zhang (2009), who jointly analyze the static and dynamic effects of different types of ownership on banks' performance, including the effect of another internal governance mechanism, namely the characteristics of the director's board. Secondly, it distinguishes between the different properties structures: concentrated, institutional, foreign or public ownership structure.

Third, it is the first to specifically examine the effects of the ownership structures and corporate board on Tunisian banks. Our sample is made up of 11 commercial banks over the period 2005-2016.

Fourth, it presents guidelines for identifying potential weaknesses in corporate governance in the Tunisian banking system.

The study completes other examining governance over a longer period. To meet these objectives, our paper begins with the presentation of the effect of the corporate board on performance, and then analyzes the impact of ownership structure, we present the data and methodology and the last section presents the empirical results.

2. Corporate board effect on performance

The literature analyzing the corporate board role allowed us to identify several criteria associated with the control effectiveness exercised by this mechanism. It is mainly about the board size, the members' independence, the duality between firm director and board president. The corporate board plays a major role in the adoption and implementation of internal banking governance mechanisms. Board members must have sufficient experience. Special attention should be paid to its composition, qualification, appointment and member's succession. In a corporate board, the size differs from company to another; the company is generally administered by corporate

board composed of at least three members and twelve members at most. The directors are in fact appointed by the shareholders and remunerated by attendance fees.

Several authors such as (Jensen, 1993) have analyzed the impact of the board size on the bank efficiency and recommend a small board size. However, Aebi et al. (2012) found that the board size has a positive impact with performance, saying that increasing the board size generates added value for banks. Cooper (2008) also found a positive relationship based on performance. However, bigger board size can affect coordination, control and flexibility in the decision-making process.

The presence of independent members is one of the crucial elements of corporate governance. It makes it possible to increase the control on the corporate board and to influence its decisions. Independents members have a clearer and neutral view of the company and they affect the firm performance positively.

Similarly, the corporate board can benefit from independent directors who objectively evaluate the manager performance. Cornett et al (2009) found a positive impact of member independence on economic performance, through improved management supervision. Yet, Aebi et al. (2012) found a negative impact on financial performance during the financial crisis, arguing that banks are pushed by management to maximize wealth before the crisis and take risks to create wealth. In this sense, the independent members exercise more effective control than dependent internal directors.

Duality occurs when a person has both the board and the executive roles. A large number of authors claim that duality appears as an obstacle to the separation of decision-making and control functions. The combination between firm director and president board affect the board independence. Few studies show that duality improves the performance of the firm (Godard and Schatt, 2000).

Duality has detrimental effects on the effective control of the director board. As soon as there is an accumulation of control and decision-making functions within the bank, the director board will be a passive organ and will not be able to assume their disciplinary role. In the case of duality, the supervisory function is diminished because of this independence lack. In consequent, duality reduces the control effectiveness mechanism and the governance structure. In addition, Dedu and Chitan (2013) find that the duality confuse the management and control exercised by the director board.

Other studies have incorporated the experience of the board members in the banking and insurance sector; they seem to find a negative influence on performance (Aebi et al., 2012) and a positive influence related to risk-taking (Minton et al., 2010). For non-executive board members, previous studies have shown that they improve performance through better monitoring and guidance from managers (Stefanescu, 2011) or that they have a negative influence, due to the associated costs, lack of company-specific knowledge (Coles et al., 2008).

3. The ownership structure impact on performance

Ownership structure is an internal mechanism of corporate governance. According to agency theory, the more dispersed the ownership structure is, the higher the agency costs will be (Jensen and Meckling, 1976). This means that the ownership concentration improves performance. With, majority shareholders engaging in closer monitoring activities, more effective governance structure will be achieved; together with greater value for shareholders.

The majority shareholders, considered as influenced controllers in corporate board, are actively involved in decision-making by pushing managers to increase the firm's performance. In Tunisia, ownership is highly concentrated so that the first two shareholders can have a majority in the ownership structure; this shareholding structure reduces the manager rooting. Ozili and Uadiale (2017) test the ownership concentration effect on bank profitability of developing countries; the ownership structure is classified as: concentrated, moderate and dispersed property. They find that high-concentration banks make the best profits, with higher returns and greater

solvency. In addition, increasing foreign ownership should lead to better governance, increased competitiveness and easier access to finance.

Stefanescu (2011) found that foreign ownership affects the firm performance. Some studies argue that the ownership concentration of private institutional investors may lead to the right dissolution of other shareholders because of the absolute priority given to maximizing profits (Laffont and Tirole, 1993).

Mian (2003) studies the effect of banking ownership structure and finds that the private banks performance exceeds public banks in emerging markets. In another study Goddard et al. (2014) found that the public banks profitability is considered lower than other types of ownership. Fethi et al. (2011) find that public banks in Egypt have benefited more from liberalization policies and, in general, tend to be more productive relative to other types of banks. Naaborg and Lensink (2008) found a negative relationship between foreign ownership and bank profitability. This suggests an advantage for domestic banks. Claessens and Van Horen (2012) show that foreign banks outperform domestic banks when (i) the foreign bank comes from a high-income country; (ii) the regulation in the country is relatively weak; (iii) the origin country and the foreign purchaser has the same language and regulation; (v) the acquirer is large and has a high market share.

Iannotta et al. (2007) investigated 181 banks in 15 European countries over the period 1999-2004 to evaluate the concentration ownership effect on performance. They find that mutual banks and public banks have lower profitability than private banks. They also have lower loan quality and higher insolvency risk.

Boubakri et al. (2005) find that privatization in developing countries significantly improves the bank efficiency in the long run. Jiang et al. (2013) show that foreign banks have better access to capital, can better diversify risks, have technological superiority or be more innovative, for example by introducing new management skills and new production processes.

Shaban.M and James.G (2018) find that public banks tend to be less profitable and riskier than private and foreign banks. National investors tend to select the best performance for the acquisition. In addition, domestic acquisitions are associated with a decrease in the bank efficiency.
Public ownership is often considered a relatively inefficient form of ownership compared to other forms of ownership. In contrast, private banks are generally less affected by political interference and seek to maximize their profits, for example by aligning objectives with higher incentive and governance systems.

4. Methodology

4.1. Sample

The sample on which our study was conducted includes 11 Tunisian banks listed on the Tunisian stock exchange for the period from 2005 to 2018. On the basis of this sample, we collected data on the governance internal mechanisms from annual reports and reference documents issued by banks. We have collected financial and accounting data from the financial statements and financial data published by the stock exchange and the financial market council.

To distinguish banks ownership, we follow La Porta et al. (1999), bank is classified as public if the government controls (directly or indirectly) at least 20% from the bank. We define a foreign institutional ownership bank when theirs share held exceeds 20%. An ownership structure is concentrated when the main shareholders detained more than 50% of bank shares.

4.2. Model

We select three dependant variables:
- Return on asset (ROA): an economic performance indicator, calculated as follows: ROA= Net Profit / Total Assets

- Market return or Market to Book MTB ratio calculated as follows: Market capitalization / equity.
- Q Tobin as a stock market performance indicator calculated as follows:

Q Tobin = market value / book value

The independent variables used are related to ownership structure and board characteristics, two control variables are also used in our model. Indeed, the variables related to the ownership structure are the part of capital held by the majority shareholders be it institutional, foreign, or state-owned. The variables related to the board of directors are the size and composition, the proportions of the institutional, independent or external members in the corporate board and the duality between board president and firm director.

We also include in our models two control variables: the bank size and the leverage ratio. $PERF\ i, t = \alpha_0 + \alpha_1 (MAJ)\ i, t + \alpha_2 (INS)\ i, t + \alpha_3 (ETR)\ i, t + \alpha_4 (ETAT)\ i, t + \alpha_5 (TCA)\ i, t + \alpha_6 (AIND)\ i, t + \alpha_7 (AINS)\ i, t + \alpha_8 (DUAL)\ i, t + \alpha_9 (LTA)\ i, t + \alpha_{10} (END)\ i, t + \mu$

PERF: indicates the banking performance, MAJ: indicates the part of capital held by the majority shareholders; INST: indicates the part of capital held by institutional investors in the capital, the INS variable represents the ratio between the number of shares held by institutional investors and the total number of shares. ETR: indicates the part of capital held by foreign investors; ETAT: indicates the part of capital held by State; TCA: represents the members number on the board of directors; AIND: measures the part of capital held by independent directors on the board; NSAID: represents the part of institutional members on the board of directors; DUAL: indicates whether or not the board president function and firm director are combined; LTA: Bank Size; END: the bank leverage.

The impact of capital concentration on bank performance is theoretically complex and empirically ambiguous. In fact, Caprio et al. (2006) find that ownership concentration has a positive effect on the performance of 244 banks from 44 countries. On the other hand, Pinteris (2002) demonstrate that there is insignificant relationship between ownership concentration and bank performance in Argentina. From this overlap of previous studies, we formulate our first research hypothesis:

H1 – The capital concentration has a positive influence on the bank's performance.

We consider institutional investors, banks, insurance companies, pension funds, collective investment, mutual funds and pension funds. These investors are expected to play an active role in corporate governance. Berger et al (2006) studied 695 American commercial banks during the period 1990-1995, and find that the presence of institutional investors produces very large control effects that reduce agency costs and increase performance. The role played by institutional investors in the bank performance is ambiguous. Therefore, we formulate a second research hypothesis:

H2 - The presence of institutional investors has a positive influence on bank's performance

The capital part held by foreign investors (ETR): this variable is measured by the number of shares held by foreign investors in relation to the total shares. Claessens and Laeven (2004) argue that the introduction of foreign ownership in banking, especially in developing countries, results in improved competitiveness for local banking systems and consequently improved performance. In fact, we emit a third hypothesis of research:

H3 - The presence of foreign investors has a positive influence on the bank performance.

We introduce the variable ETAT to measure the impact of state participation on the Tunisian banks performance. This variable is defined as the proportion of capital held by the state. Various empirical studies have focused on the relationship between public ownership and the bank performance. Lang and so (2002) concludes that public banks are characterized by lowest performance. In consequent, we test the following hypothesis in Tunisian context:

H4 - The public ownership has a negative influence on the bank performance.

Board size (TCA): measured by the number on the board of directors. Ghosh and Ansari (2018) examine the association between financial performance and the boards of banks in India. Using data on 1263 banks, the results indicate that the board size does not affect performance. A large board size negatively influences performance and creates coordination problems between board members. To do this, we present the following hypothesis:

H5- Large corporate board improves bank performance.

The presence of institutional members on the board of directors (NSAI): The NSAI variable presents the ratio between the number of institutional members and the total number directors in corporate board. Institutional directors include representatives of banks, insurance companies, pension funds, collective investment, mutual funds and pension funds. Berger et al (2006) studied a sample of 659 Americans banks during the period 1990 to 1995. Their results indicate that institutional investors improve the bank performance through their control. For this purpose we expect the following hypothesis:

H6- The presence of institutional directors on the board of directors has a positive influence on the bank performance.

Members Independence on the board of directors (AIND): The variable AIND is measured by the proportion of independent members on the board of directors. The independent director must not have a professional relationship with the bank. Adams and Mehran (2005) show that external directors have no impact on bank performance. So, we propose to test the following hypothesis:

H7 - The presence of independent members on the board of directors has no influence on the bank performance.

Duality (DUAL): Duality is considered to be the dual function between board president and bank manager. To analyze the effect of duality on the performance of banks, we consider the variable (DUAL) which is a binary variable. It takes the value of 1 when the president board is combined to bank manager and 0 otherwise. The financial literature shows that the problem called "duality" or the accumulation of the positions of the general manager and president board presents separate opinions, but the majority of these studies support the negative effect on performance. We therefore formulate our last research hypothesis:

H8 – Duality has a negative and significant impact on banks performance

Control variables, which are the variables that can have a significant effect on performance. In fact, we retain in this context, the bank size and leverage. Bank size (LTA): The bank size has often been considered as a variable that can have a significant effect on performance. In general, the bank size variable is expressed as the natural logarithm of the book value of its total assets. In fact, we can predict in our study that the bank size is positively associated with performance.

LTA = log (asset book value). The bank's debt ratio (NDT): To take into account the debt effect on performance, we use the ratio of total debt to total assets.

4. Results

Table (1) presents descriptive statistics relative to different variables of our model.

The average ROA for our sample is 0.821%. The minimum and maximum ROA for the sample is -8.13% and 2.91%. This proves the weak performance of Tunisian banks compared to international banks. The average MTB is (1,5), the minimum is (-1,34) and the maximum value is (3,86). This result shows that the majority of Tunisian banks are overvalued in the market. The majority shareholders held in average (39%), the minimum is (6%) and the maximum value is (75%). The result proves that Tunisian banks are characterized by concentration ownership

structure. The institutional shareholders held on average (50%), the result prove that Tunisian banks are detained by institutional ownership structure. The state and foreign shareholders held in average respectively 11% and 29%.

The average part of independent directors in corporate Board is 8.14%, which remains much lower than that of international banks.

Our correlation matrix in Table (2) shows a significant correlation between ETR and MAJ and between AINS and ETAT. After analyzing the correlation between the independent variables, we performed a homogeneity test in the panel model. To determine the model specificity, we carried out a Hausman test which made it possible to distinguish fixed and random effects.

Table 1: Descriptive statistics for variables.

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	154	.0088132	.0106599	-.0813031	.0291264
Qtobin	154	1.025185	.1108279	.6311853	1.304344
MTB	154	1.40162	.9478708	-.6	3.868069
MAJ	154	.4007708	.1616717	.0633	.835
INS	154	.5359167	.1741677	.0852005	.8348145
ETR	154	.2976623	.230729	0	.6424
ETAT	154	.1399177	.2061779	0	.8349308
TCA	154	1.04444	.0537498	.7781513	1.113943
AIND	154	.0969344	.1036773	0	.4
AINS	154	.2931513	.1792195	.0833333	.6666667
TB	154	6.561683	.3340662	5.424772	7.131462
END	154	.8992407	.0669026	.5108542	1.016225

PERF: indicates the banking performance, MAJ: indicates the part of capital held by the majority shareholders; INST: indicates the part of capital held by institutional investors in the capital. The part of capital held by institutional investors (INS): The INS variable represents the ratio between the number of shares held by institutional investors and the total number of shares.ETR: indicates the part of capital held by foreign investors; STATE: indicates the part of capital held by State; TCA: represents the members number on the board of directors; AIND: measures the part of capital held by independent directors on the board; NSAID: represents the part of institutional members on the board of directors; DUAL: indicates whether or not the board president function and firm director are combined; LTA: Bank Size; END: the bank leverage.

Table 2: Correlation Matrix

	MAJ	INS	ETR	ETAT	TCA	AIND	AINS	DUAL	TB	END
MAJ	1.0000									
INS	0.6022	1.0000								
ETR	0.6661	0.2860	1.0000							
ETAT	0.0205	0.4263	-0.4538	1.0000						
TCA	0.2951	0.4779	0.0512	0.3074	1.0000					
AIND	0.0484	0.0807	-0.0425	0.0507	-0.0192	1.0000				
AINS	-0.0357	0.2879	-0.2731	0.6847	0.3254	0.0252	1.0000			
DUAL	-0.3236	-0.1658	-0.3829	0.3188	-0.1238	-0.4529	0.2994	1.0000		
TB	-0.1309	-0.3108	-0.4411	-0.0470	-0.0613	0.2058	0.0674	0.0868	1.0000	
END	0.1314	-0.1096	-0.1023	-0.1781	0.0950	-0.1313	-0.1093	0.0882	0.6955	1.0000

PERF: indicates the banking performance, MAJ: indicates the part of capital held by the majority shareholders; INST: indicates the part of capital held by institutional investors in the capital. The part of capital held by institutional investors (INS): The INS variable represents the ratio between the number of shares held by institutional investors and the total number of shares.ETR: indicates the part of capital held by foreign investors; STATE: indicates the part of capital held by State; TCA: represents the members number on the board of directors; AIND: measures the part of capital held by independent directors on the board; NSAID: represents the part of institutional members on the board of directors; DUAL: indicates whether or not the board president function and firm director are combined; LTA: Bank Size; END: the bank leverage.

Table 3: Models Results

(a): Dependant Variable: Q Tobin

Qtobin	Coef. Std.	t-test	P>t
MAJ	0.1144	1.18	0.23
INS	-0.0703	-0.97	0.33
ETR	-0.1622	-1.26	0.21
ETAT	0.2629	1.65	0.10
TCA	-0.2719	-1.56	0.12
AIND	-0.1086	-1.43	0.15
AINS	0.0276	0.30	0.76
DUAL	**0.0654***	**3.54**	**0.01**
TB	0.0445	1.06	0.29
END	**0.6223***	**5.18**	**0.00**
CONST	0.4421	1.30	0.19
R^2	39,01		
Hausman test (chi2)	47,5*		
effets	Fixed effect		
Fisher	7,79*		
Chi2	-		

(b): Dependant Variable: ROA

ROA	Coef. Std.	Z-test	P>z
MAJ	-0.0020	-0.21	0.833
INS	0.0002	0.03	0.974
ETR	0.0089	1.13	0.258
ETAT	-0.0041	-0.53	0.598
TCA	-0.0242	-1.41	0.158
AIND	**-0.0168***	**-1.75**	**0.080**
AINS	-0.0105	-1.62	0.106
DUAL	0.0003	0.15	0.877
TB	**0.0223***	**4.66**	**0.000**
END	-.1306*	-6.68	0.000
CONST	0.0080	0.28	0.778
R^2	37,01		

Hausman test (chi2)	6,64
effets	Ramdom effect
Fisher	
Chi2	72

(c): Dependant Variable: MTB

MTB	Coef.	t	P>t
MAJ	1.0447	0.99	0.322
INS	0.6787	0.86	0.391
ETR	-0.8117	-0.58	0.563
ETAT	2.3069	1.33	0.185
TCA	-1.7624	-0.93	0.355
AIND	**-1.5348***	**-1.86**	**0.066**
AINS	1.2907	1.28	0.203
DUAL	**0.3359***	**1.67**	**0.097**
TB	0.43750	0.96	0.339
END	0.4638	0.35	0.723
CONST	-1.2467	-0.34	0.737
R^2	51.7		
Hausman test (chi2)	46.13*		
effets	Fixed effect		
Fisher	2.15*		
Chi2	-		

Dependants variables: indicates the banking performance: Return on Asset ROA, Market to book MTB and QTobin;

Independents variables: MAJ: indicates the part of capital held by the majority shareholders; INST: indicates the part of capital held by institutional investors in the capital. The part of capital held by institutional investors (INS): The INS variable represents the ratio between the number of shares held by institutional investors and the total number of shares.ETR: indicates the part of capital held by foreign investors; ETAT: indicates the part of capital held by State; TCA: represents the members number on the board of directors; AIND: measures the part of capital held by independent directors on the board; NSAID: represents the part of institutional members on the board of directors; DUAL: indicates whether or not the board president function and firm director are combined; LTA: Bank Size; END: the bank leverage.

The results presented in table (3) show that a concentrated ownership structure hasn't a significant effect on bank performance measured by the return on assets (ROA), Market to Book and the QTobin. Thus we refute hypothesis H1. We reject then caprio et al. (2006) results that prove that ownership concentration improves bank performance. The foreign institutional ownership and public ownership does not significantly affect the bank performance, this result corroborates Barclay and Holderness (1991) who argue that institutional investors can positively influence bank performance only when they are actively involved in the banking governance mechanism.

This result contradicts Berger et al (2003) who suggest that institutional investors produce control effects, reduce agency costs and increase performance. Similarly, the presence of foreign investors (PETR) does not significantly influence the economic and financial performance of Tunisian banks. This result corroborates Berger et al. (2003), which proves that foreign investor's shareholding does not improve bank performance. On the other hand, Weill

(2006) finds that foreign-owned banks have better technical efficiency than local banks. Public participation in bank capital is not significantly correlated with the bank performance measured by the ROA, Qtobin and the MTB. We reject Barth et al. (2005) results, that demonstrate the negative impact of public ownership on bank performance and that public banks have lower performance than private banks.

Although the public Tunisian banks occupy the last three places in a decreasing order of average ROA during the period 2005-2015, the results do not prove the negative effect of public ownership on the banking performance, this results can be explained, among other things, by the competence and experience of the manager's banks.

The board size isn't significant related to banks' financial performance. The board size doesn't affect performance. The large number of board members increases conflict and therefore has greater potential for disagreement and lack of coordination in management decisions. Thus, the board composition seems to have various effects on banking performance. Indeed, the independent board members have a negative and significant impact on the bank performance. This can be explained by the high ownership concentration of Tunisian banks, which can replace the control exercised by the board of directors. Thus, the role played by institutional administrators seems weak and limited due to the high ownership concentration. Thus, we confirms the results found by Pathan and Faff (2013) that show the negative relationship between director independence and performance, and the results obtained by Ben Bouheni et al (2016) who claim that board independence is statistically significant and negatively related to the bank profitability during the period 2005-2011.

In addition, the presence of institutional directors on the board of directors isn't correlated with the financial performance of listed Tunisian banks. For duality, we find that it is positively associated with financial performance (Qtobin and MTB). However, we note that the combination of functions has a greater positive and significant impact on the stock market performance. This can be explained by the fact that the functions combination improves the manager's competence and consequently the bank performance. So we will conclude that duality improves the bank performance. The bank size has a positive and statistically significant impact on performance. So, the larger banks are able to improve performance, measured by the ROA. In addition, the leverage has a significant and positive impact on the Tunisian banks performance for the ROA.

5. Conclusion

In this paper, we test the impact of internal governance mechanisms on bank performance. This subject is fueling a rich debate and empirical results remain controversial. Therefore, we have tried to contribute, through this paper, to enrich the debate on this subject using empirical study of the Tunisian banks listed on the stock market during the period of 2005-2016. Our results reveal that ownership concentration isn't related to the bank performance. Thus, the institutional, foreign or public investors didn't affect the financial and economic bank performance. On the other hand, we didn't found a relationship between board size and financial performance. In addition, the independent directors presence tends to reduce the bank performance. The duality between board president and bank manager has a positive impact on the financial and stock market performance. The bank size has a positive influence on the bank's performance.

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Economic Environment and Performance of Donor Funded Health Projects in Kenya

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Abstract
Health projects have been found to play a critical role in enhancing the well-being of society. Health projects in Kenya are funded by both the government and donors. Although the amounts of funding from donors in Kenya have been rising over the years, most donor-funded projects in Kenya are not performing well. This study sought to find out the effect of the economic environment; changes in tax rates, changes in interest rates and changes in exchange rates on the performance of donor-funded health projects in Kenya. The study was anchored on the theory of constraints. The study adopted explanatory and descriptive research designs. A census of all the sixty-nine donor-funded health projects initiated between 2008 and 2018, and are ongoing was conducted. A semi-structured questionnaire was administered to managers of the donor-funded health projects and the heads of donor-funded projects at the ministry of health. Both descriptive and inferential statistics were applied in the analysis and presentation of data. Quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS), while qualitative data were analyzed by content analysis based on patterns and themes. A multiple regression model was used to explain the effect of the economic environment on the performance of donor-funded health projects in Kenya. The study found out that the economic environment had a significant effect on the performance of donor-funded health projects. The study recommends that all decision-makers and other donor-funded health project stakeholders devise policies and strategies for controlling the effect of the economic environment on the donor-funded health projects to enhance their performance.

Keywords: Economic Environment, Performance, Donor, Funded, Projects

BACKGROUND

Due to the dynamic nature of the work environment, organizations are increasingly using organizational projects in their work to achieve organizational goals (Hyvari, 2016). Governments too initiate and run projects aimed at meeting the needs of the citizenry. Whether company, Organizational, or government, projects are funded from internal sources or by international agencies. Of concern to all organizations is the performance of their projects, which is measured by the project success pillars of time, quality and budget alongside other project-specific parameters (PMI, 2013).

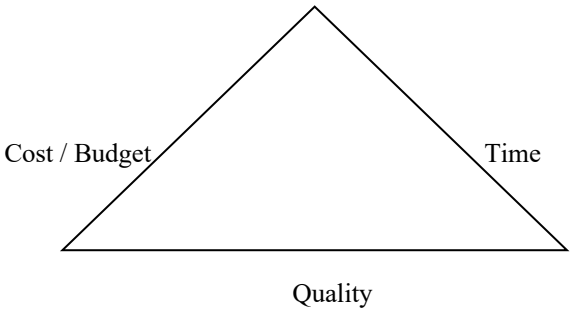
Projects by the Kenya government are either government-funded or donor-funded. The projects cover a wide range of areas, which include health, water, and sanitation, agriculture, education, security, energy, infrastructure and

tourism. The Kenya Vision 2030 categorises the government projects into economic, social and political projects which it calls the pillars of Vision 2030. Vision 2030 in Sessional paper 10 of 2012 identified flagship projects which will directly address priorities in key sectors such as agriculture, education, health, water and the environment. According to the Vision 2030, health projects are critical to the attainment of all the other pillars of Vision 2030 because they ensure the availability of healthy and sufficient manpower. A good and working health system also reduces on the costs of downtime due to the ill health of workers by ensuring that the workers are healthy and fit to perform their work.

Many high-cost projects undertaken world over tend to have sustainability challenges, which is a concern for key donors including the Asian Development Bank, the World Bank, as well as bilateral aid agencies (Mugambi, 2014). According to Kiprop, Nzulwa, and Kwena (2017), little development has taken place in Sub-Sahara Africa despite donor funding for over a half a century. High levels of unemployment, indebtedness, poverty, poor health and poor economic performance are still prevalent in most of the sub-Saharan countries. Kiprop *et al*., recommend that due to the performance issues tagging the donor-funded health projects, studies should be conducted to establish the challenges facing implementation of donor-funded projects in Kenya. Project challenges emanate from both inside and outside the project. Those from within the project are controllable, while those from outside are largely uncontrollable. According to Musa, Amirudin, Sofield and Musa (2015) the external environmental factors include the political, technological, economic and social environments.

Project Performance

According to The Project Management Body of Knowledge (PMBOK) guide, project performance is measured in terms of budget or cost, time and quality, which are the three constraints of project performance (PMI, 2013, p. 1) as illustrated by the figure below. According to Gaturu and Muturi (2014) time is a critical factor and measure of project performance. The Bostock Marketing Group (BMG) Research (2015) also observed that budget and quality standards are critical measures of project performance.



Project Performance Constraints
Source; Project Management Institute, 2013

Time is an essential resource in the management of projects. It is irrecoverable, limited and dynamic (Adeojo, 2012). It is an important factor in the measurement of the performance of projects (PMI, 2013). Projects are time-bound and as such, during the project planning phase a clear start and end time for the project should be determined (PMI). According to Mortaheb, Amini, Younesian and Soltani (2012) project performance is viewed in terms of delivery on time. Memon, Rahman and Azis (2012) also observed that time performance is a fundamental criteria for performance measurement for any project.

The performance of a project is good if its time use is within the planned timelines. World over, many projects are experiencing time overruns. According to Memon (2012), 79.5 percent of public projects and 66.25 percent of private projects experience time overruns in Malaysia. Assedri wrote in the New Vision Newspaper in Uganda in 2009 that the Northern Bypass project in Uganda had a time overrun of up to 100 percent of the planned duration. The 2017 edition of Deloitte Africa Construction report indicated that 87 percent of projects in Kenya experience

time overruns. Solis-Carcano, Corona-Suarez and Garcia- Ibarra (2015) observed that prolonging the project execution time will result in cost overruns due to the extra expenses on materials, personnel, financial costs and contract penalties.

Memon (2012) associated time overruns to both internal and external factors. Akanni et al. (2014) identified social, economic, technological, political and environmental factors as the external factors. This study investigated the effect of the external environment on the project duration, which is a measure of performance. The data collected from the respondents of the study was analysed together with cost and quality weights to determine a composite measure of a project's performance.

Cost is a measure of the total of what has been spent on the project to the current level. It is dynamic and not static (Adeojo, 2012). According to the PMI (2013), cost is one of the measures of the performance of projects alongside time and quality. Memon (2012) concurs that cost is a critical measure of the performance of a project. In Malaysia, 53.2 percent of public projects and 62.8 percent of private projects experience cost overruns with an overrun of between 5 – 10 percent of project cost (Memon). In Kenya, 48 percent of the projects experience cost overruns (Labuschagne, 2017). Cost overruns are caused by inflation on materials (Olawale & Sun, 2018), time overruns (Solis-Carcano et al.,2015), and rework (Hwang, Thomas & Haas, 2009). This study investigated the effect of the economic environment on the cost measure of performance.

Every project has an anticipated level of quality based on the details and specifications set out by the users (Stojcetovic, Lazarevic, Prlincevic, Stajcic & Miletic, 2013). According to Ng and Anuar (2011), quality performance is concerned with the quality of the project's final outcome and the quality objectives of the project. Mortaheb et al., (2012) observed that a project outcome has quality if it satisfies the client's overall expectations and if it achieves the technical specifications. Quality is a key measure of the performance of a project. To conclude that the performance of a project is good, time, cost and quality outcomes have to be considered.

The quality of a project is affected by lack of knowledge and skills to transform ideas into quality outcomes (Ng & Anuar, 2011), lack of understanding on quality expectations and the newness and uniqueness of the project (stojcetovic et al., 2013), and project risks (Aller, 2016). The sources of project risks are both internal and external to the project. This study focused on the economic sources of project risks, which are external sources.

To achieve the expected levels of quality and hence performance, quality management practices should be adopted. According to Stojcetovic (2013), project quality management includes processes and activities of the project organization that determines quality policies, objectives and responsibilities that satisfy the needs for which the project was undertaken.

Performance of Donor Funded Health Projects

The factors that affect the performance of donor-funded health projects vary from project to project and from country to country. Thiele (2016) suggested that both internal and external environmental factors affect project performance. Thiele identified the level of community development, community cohesion, community trainings and involvement of local leadership (Barangay Captain) as the external factors that affect the performance of donor-funded projects in the Philippines.

Although donor-funded projects are considered important in the growth and development of many developing countries, their outputs in terms of quality, cost, time and stakeholder satisfaction remain the subject of debate (Azhar, 2008). According to Kuria & Wanyoike (2016), poverty in Africa is on the increase despite the increase in donor funding to government and NGOs towards poverty reduction programs. In Uganda, many donor-funded projects show signs of irrationality and a deficient risk assessment and management mechanism (Mujabi *et al* ., 2015). Kenya's donor-funded projects faced similar outcomes despite the country’s strong economic growth and reform efforts in the period from 2008 to 2018. In that period the country’s health system remained underdeveloped and the performance of donor-funded health projects was not steady.

Endemic corruption and poor reporting structures in the public sector in Kenya are causes of delays in donor-funded health projects (DFID, 2012). Gaturu and Muturi (2014), observed that delays plague the delivery of donor-funded projects in many developing countries. The consistent delays in the completion of projects and cost overruns in Kenya, just like in most parts of the developing world calls for research to determine the factors that are causing the poor project performance. The level of performance of a project was a composite measure of time, cost and quality.

Economic Environment

According to Akanni et al. (2014), the economic environment zeroes in on the general level of economic activity. The economic environment factors such as taxes, economic growth or recession, government economic policies, exchange rates, interest rates and minimum wages affect the consumption decisions of individuals and organisations. They affect the affordability in financing and the flow of funds. According to Musa *et al*. (2015), the economic factors include low-interest rates, availability of credit facilities, a stable macroeconomic environment and long facility repayment periods. A stable macroeconomic environment will enable the project team to prepare fairly accurate cost estimates and ensure the project cost is controlled. Unstable macroeconomic policies will push up the project cost.

Studies by Akanni *et al*., (2014) and Musa *et al*., (2015) agree that the economic factors have an effect on the performance of building and construction projects. The factors affect the performance of the projects differently. Economic factors affect consumption decisions of individuals and organisations and they include taxes, government policy, interest rates, currency exchange rates, and labor costs. According to the UN-Habitat (2012) report, economic aspects of the macro-environment factors have been inadequately addressed in the housing policies of many developing countries.

LITERATURE REVIEW

Theoretical Foundation

The study was anchored on the theory of constraints by Dr. Eliyahu M. Goldratt, which was developed his 1984 book ‘' The Goal". According to this theory, a very small number of constraints limits any manageable system in achieving more of its goals (Chowdhary, 2009). The attainment of project goals is affected by both internal and external constraints. If these constraints are not managed well, projects are bound to fail (Kisilu et al., 2016). The theory provides for ways of identifying the key factors that limit (constrain) the achievement of goals. It also provides for ways of ensuring that the constraint is not a limiting factor by improving it in a well-organized manner. Kiprop, *et al.* (2017) suggested that the overall performance of a project could be improved by focusing on fixing the main problem (constraint). This study sought to determine the effect of the economic environment on the overall performance of the donor-funded health projects in Kenya. The determination will guide project managers in the development of project plans and their execution to achieve expected levels of performance in the projects.

According to Maina & Gathenya (2014), every system is limited in getting more of what it strives for by at least one constraint. Were it not so, then the system's output would be infinite. The theory of constraints has been applied to production planning, production control, project management, supply chain management, accounting and performance measurement and other areas of business such as hospitals and military depots, which are not-for-profit facilities. Although performance constraints may be acknowledged or not, they determine the output of a system. To achieve organizational goals, it is in a manager's best interest to identify and reduce the organization's system constraints (Maina & Gathenya).

Projects are designed with specific cost, time and quality objectives in mind. The attainment of these objectives results in good performance for the project. However, the attainment of the project goals faces several external and internal environment constraints (PMI, 2013). The external environment constraints are economic, social-cultural, technological, political, legal and environmental. The theory of constraint provides a good base for

determining the most limiting constraint to the attainment of project goals. This base was applied in this study to determine the effect of the economic environment on the performance of donor-funded health projects in Kenya.

Economic Environment and Project Performance

Economic environment is known to affect the economic workability of the project including the local economic conditions adjustments of the beneficiary country or imprecise project development plan due to economic conditions that are erratic (Maina & Gathenya, 2014). Sang, (2015) identifies exchange rate fluctuations, interest rate and inflation as economic factors. The successful completion of projects depends on the availability of resources as well as finance (Maina & Gathenya, 2014). According to Maina and Gathenya (2014) the success of projects is affected by project financing, foreign currency exchange rate as well as foreign investments and joint venture in various ways. These economic factors affect the economic workability of the project including the changes in domestic economic conditions of the recipient country and may lead to the development of inaccurate project plans (Maina & Gathenya, 2014).

In their investigation to find out the effect of economic factors on the performance of project management among petroleum marketing firms in Kenya, Maina and Gathenya (2014) focused on economic factors as predictor variables and project management performance as the predicted variable. Their study was anchored by the agency theory, theory of constraints, bargaining theory of distribution channels, and the theory of resources and capabilities. The study which applied a descriptive research design attributed the project management performance to various economic factors such as foreign currency exchange rate, funding, joint ventures and foreign investments. The study by Maina and Gathenya found out that project management among the firms is poor. The results of this study further infer that the success of projects in oil marketing companies is affected by the use of efficient project-specific technology, good forecasting of work plan, efficient procurement of materials and equipment and exchange rate on the acquisition of resources. Although the study concludes that economic factors have an effect on the performance of project management among petroleum marketing firms in Kenya, its focus was not on donor-funded health projects.

The Akanni *et al*. (2014) study on the impact of environmental factors on building project performance in Delta state, Nigeria investigated the economic factor as an independent variable amongst other independent variables. The study revealed that economic factors have an effect on the building project performance in Delta state. The fluctuating economic environment affects the project's financial position, which then influences the project performance. Although this project studied the effect of economic factors on the performance of building projects, the focus was not on donor-funded projects.

In their study on the influence of external environmental factors on the success of public housing projects in developing countries, Musa *et al*. (2015) investigated the economic environment as an independent variable. The study found out that the success of public housing projects is affected by economic factors. The study further revealed that only government could control economic factors and not any individual donor-funded project. The study identified a stable macroeconomic environment, available credit facilities to intended recipients, low-interest rates, implementation of sound economic policy, loan repayment periods that are long term and low down payment requirements as the economic factors. This study focused on changes in tax rates, changes in interest rates and changes in the exchange rates.

RESEARCH METHODOLOGY

This study applied explanatory and descriptive research designs. The combined designs have the potential to offer a more robust research (Caruth, 2013). A combination of explanatory and descriptive research designs will provide more insights into the subject of investigation and capture information that could have been left out when using only one study design. While the descriptive research seeks to answer the question "what is going on?" explanatory research will answer the question "why is it going on? This will enable the researcher to understand mechanisms simultaneously, explore associations and document risks (Morse & Niehaus, 2016).

In a descriptive research, respondents will answer a set of questions administered by either interview or a questionnaire from which the researcher will describe a study phenomenon. By measuring the relationships between the independent variable and the dependent variable, explanatory research was used to test hypotheses by analyzing the collected data using statistical techniques. Explanatory research will not just describe, but explain the phenomena being studied (Given, 2008).

Empirical Model

To determine the relationship between the economic factors and the performance of donor-funded health projects, the collected data was analysed and regressed as suggested by Muthen and Muthen, (2012) who observed that for continuous outcome variables linear regression models would be applied. This model is suitable for this study since performance is a continuous variable. According to Gujarati & Sangeetha (2007), where the dependent variable Y is quantitative in a model, estimation of its expected mean or mean value from the values of the independent variable given is the objective. The empirical model was;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu_i$$

Where β_0 is the constant, $\beta_1, \beta_2, \beta_3$ are the coefficients of the economic factors analysed and μ_i is the error term.

Sample Design

According to Saunders, Lewis and Thornhill (2012), an optimum study sample is one which meets efficiency, representativeness, reliability and flexibility requirements. Since the population in this study was small, a census study was conducted to ensure representativeness and reliability.

Data Collection Instruments

To empirically study the effect of the economic factors on the performance of donor funded health projects in Kenya, a semi-structured questionnaire was applied. Saunders et al., (2012) observes that in a questionnaire research, objectives are translated into specific questions whose answers provide data for hypothesis testing. A questionnaire allows for the collection of data from large samples, has no bias, upholds confidentiality and saves time. The questionnaire was made up of open and closed-ended questions, with some of them being measured on a likert scale of 1-5.

Data Analysis and Presentation

Descriptive and inferential statistics with the aid of the Statistical Package for Social Sciences (SPSS) version 20.0 was used to analyse quantitative data. This involved the computation of mean scores, frequencies, percentages, standard deviations and variances (Berenson, Levine, Krehbiel, O'Brien, Jayne & Watson, 2013). Correlation analysis was conducted to determine the strength of the relationship between the predictor and the predicted variables. To determine the relationship between the predictor and predicted variables, regression analysis was applied since the study's model has many predictor variables and one possible outcome. According to Muthen and Muthen (2012), regression analysis is the best statistical approach in analyzing continuous dependent variable outcomes.

RESEARCH FINDINGS AND DISCUSSIONS

The economic environment variables investigated were changes in tax rates, changes in currency exchange rates and changes in interest rates. The findings of the study on the economic factors were as presented in the table below.

Economic Factors

	N	Mean	Std. Deviation
Changes in tax rates	37	2.68	1.396
Changes in currency exchange rates	39	2.56	1.501
Changes in interest rates	37	2.11	1.350
Overall		**2.45**	**1.416**

Source: (Survey data, 2019)

The findings indicate that the changes in the tax rates have the highest mean of 2.68 followed by changes in currency exchange rates with a mean score of 2.56, while changes in interest rates had the lowest mean of 2.11. The mean of the changes in tax rates and changes in currency exchange rates approximate to 3 on the likert scale which indicates the two variables have a medium effect on the performance of the donor-funded health projects, while the changes in interest rates approximate to 2 indicating that the factor has a low effect. The changes in currency exchange rates had the highest standard deviation of 1.501, and were followed by changes in tax rates, which had a standard deviation of 1.396. The changes in interest rate had the least standard deviation of 1.350. The data on changes in currency exchange rates had the highest variability from the mean, while the data on changes in interest rate had the least variability from the mean. Overall the economic environment had a mean of 2.45, which approximates to 2 on the likert scale and a mean standard deviation of 1.416. This suggests that the economic environment affects the performance of donor-funded health projects to a low extent. These results concur with those of Musa et al. (2015) that the economic environment affects the performance of projects.

The respondents who indicated low and very low rating on changes in exchange rates suggested that, funding was provided in Kenya Shillings, thus minimizing the effect of exchange rates. The projects were also not affected by interest rates since the funding was not obtained on loan. Further, the respondents indicated that most of the grants are tax-exempt; thus, they suffer little on changes in tax rates. Those who rated the changes in exchange rates high and very high held that; donor funding is in US dollars and that they suffer highly when there is a change in exchange rates, especially when the Kenyan shilling gains value against the dollar. Other respondents held that, changes in tax rates like the addition of Value Added Tax on petroleum products in the 3rd quarter of 2018 by the Government of Kenya increased the cost of transport thus affecting the performance of donor-funded health projects.

The collected data were analysed to test the empirical model applied in the analysis. The table below summarised the findings.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.756a	.572	.538	.59062

a. Predictors: (Constant), Changes in tax rates, Changes in currency exchange rates, Changes in interest rates

Source: (Survey data, 2019)

The correlation coefficient R = 0.756 indicates that there is a strong correlation between the economic factors and the performance of the donor-funded health projects in Kenya. The coefficient 0.572 of R squared indicates that the economic factors explain the performance of donor-funded health projects up to 57.2 percent.

The ANOVA test was also conducted to determine the suitability of the model in explaining the relationship between the economic factors and the performance of donor-funded health projects. The ANOVA test results were as in the table below.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.338	3	.113	.277	.000[b]
	Residual	13.026	32	.407		
	Total	13.365	35			

a. Dependent Variable: Y

b. Predictors: (Constant), Changes in tax rates, Changes in currency exchange rates, Changes in interest rates

Source: (Survey data, 2019)

The model was found to be significant at 95 percent confidence level (p value = 0.000 < 0.05).

Regression Coefficients

The economic factors were regressed against the performance of donor-funded health projects and the results were summarised as in the table below.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.638	.049		74.136	.000
	Changes in currency exchange rates	-.031	0.009	-.076	-3.556	.000
	Changes in interest rates	-.030	0.013	-.068	-2.315	.001
	Changes in tax rates	-.018	0.006	-.042	-3.099	.012
a. Dependent Variable: Y						

Source: (Survey data, 2019)

The regression determined a constant β_0 =3.638 which explains the performance of the donor-funded health projects while holding all the economic factors at zero. The coefficient was found significant at 95 percent confidence level (t value = 74.136; P value = 0.000). All the predictor variables were found to have a negative effect on the performance of donor-funded health projects in Kenya as is evident from their beta coefficients. Changes in currency exchange rates had a beta coefficient of -0.031 which was the highest, followed by changes in interest rates with a coefficient of -0.030 and the changes in tax rates had the least effect with a coefficient of -0.018. In addition, the predictors were found significant at 95 percent confidence level based on the t values and p values ; Changes in currency exchange rates (t value = -3.556, P value = 0.000 <0.05), Changes in interest rates (t value = -2.315; P value=0.001 <0.05) and Changes in tax rates (t value = -3.099; p value =0.012<0.05).

From this study the relationship between the economic factors and the performance of donor funded health projects in Kenya was presented as;

$$Y = 3.638 - 0.031X_1 - 0.030X_2 - 0.018X_3 + \mu_i$$

The β values explain the relationship direction between the predicted and the predictor variables (Nathans, Oswald & Nimon 2012). Nathans *et al*. further argued that beta weights for the independent variables indicate the expected gain or fall in the predicted variable value given a gain or fall in the predictor variable. Therefore, an upward adjustment of economic factors such as exchange rates, tax rates and interest rates affects project performance negatively. The economic factors have an inverse relationship with the performance of the donor-funded health projects in Kenya. According to Maina & Gathenya (2014), the economic feasibility of a project, including the adjustments in the local economic conditions of the receiving country, or the imprecise project development plan

due to the erratic economic conditions are influenced by the economic factors. The findings of this study concur with Akanni *et al*. (2014) and Musa *et al*. (2015) that economic factors have significant effect on the performance of projects.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The economic factors were found to affect the performance of donor-funded health projects. However, the results indicated that the economic factors such as change in tax rates, change in currency exchange rates and change in interest rates have a medium to low effect. The reasons provided for the low and very low rating on economic environment as explained by the respondents is that, funding is provided in Kenya Shillings which minimizes the effect of exchange rates. Others held that, the donor-funded health projects were not affected by changes in interest rates because they don't borrow for their projects. Further, it was also found out that, most of the grants are tax-exempt thus minimizing the effect of taxation. A weak negative but significant correlation was established between the economic environment and the performance of donor-funded health projects in Kenya. The regression analysis also confirmed that, the economic factors are significant factors that have a negative effect on the performance of donor-funded health projects in Kenya.

Conclusion

The economic environment comprising of changes in interest rates, changes in exchange rates and changes in tax rates affects the cost of implementing the donor-funded health projects hence affecting their performance. The regression analysis established that all the three analysed economic factors had a significant negative influence on the performance of donor-funded health projects. This implies that an increase in taxes, interest rates and exchange rates will increase the project expenditure causing a budget overrun.

Recommendations

The study recommends that the government of Kenya should develop policies and frameworks that will minimize the effects of the economic factors; changes in tax rates, changes in interest rates and changes in the foreign exchange rates on the performance of donor-funded health projects. The study also recommends that all decision-makers and other donor-funded health project stakeholders devise strategies for enhancing the performance of the projects within their economic environment.

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Designing and Deploying an E-Business Model for Small and Medium-Sized Enterprises in Saudi Arabia

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Abstract
This work was carried out to deploy e-business and e-commerce through small and medium-sized enterprises (SMEs) in Saudi Arabia. To that end, a study on market behaviour was conducted, and a model was developed to transfer from traditional business to e-business. Finally, an application of this model was applied in a local small business. A study was carried out to find the two main characteristics of SMEs in Saudi Arabia: the level of adoption of e-business and the most significant limitations and barriers to this adoption. According to a survey of one hundred and nine SMEs in Saudi Arabia, 14% were found to depend only on e-mails for communication purposes. A total of 76% were found to have used websites for marketing their businesses. Six percent were already using e-commerce for online sales, and only 4% of Saudi SMEs had fully integrated e-business systems through their supply chains. The results also showed that organizational, technical and economic barriers are the most significant in terms of e-business adoption. Therefore, when the model was under development, these three groups of barriers were used as criteria. After the study was conducted, a model was developed in the form of a strategy to transform traditional businesses into e-businesses. A new strategy was introduced that combines in-sourcing and outsourcing with the help of e-commerce site builders. Finally, this research will contribute to deploying e-business systems among SMEs in Saudi Arabia to align them with current market needs and consumer expectations better and to sustain competitive advantage.

Keywords: E-Business, Small and Medium-Sized Enterprises, Linguistic Barriers

1. Introduction to E-Business and SMEs in Saudi Arabia

With the advancement of the Web, the capacity to send data is presently unimaginably quick. Companies have realized this reality and have utilized the Web as a tool to extend their businesses. The term 'e-business ' was first coined by IBM in 1997. Initially, it was defined as "the change of key commerce forms through the utilization of Web innovations." Thus, an e-business could be a way to conduct minor and major trade exchanges online rather than going into a store. Moreover, it suggests a change of existing commerce forms into more productive forms. It pleases people who would rather have an item be dispatched from a store to them than go to an actual store to buy it. E-business applications will usually organize services, will help reduce waiting times and will contribute

to people's convenience. In Saudi Arabia, the need for a well-designed e-business system is growing. People in Saudi Arabia are becoming better educated. Uses of internet technology have become more popular, more accessible and more familiar to Saudi people, especially after the rapid, obvious boom in communication technologies in recent years.

This research will be carried out to determine the level at which SMEs in Saudi Arabia are adopting e-business. Then, the barriers and limitations to applying e-business systems in local SMEs will be defined so that we can develop a successful business model that overcomes those barriers and that can be easily applied in the market. The results of this research will help deploy e-business systems among SMEs in Saudi Arabia to align them with current market needs and consumer expectations better and to sustain competitive advantage.

1.1 Problem Description

The e-business showcase share in Saudi Arabia will hit SR50 billion by the end of 2015, according to Saudi Post sources. E-business is reliably attracting new buyers and making strides in income. Approximately 1 in 4 Saudi Web users are currently engaging in e-commerce, and they visit almost 70 million e-commerce pages per month. User development is at an evaluated 9.3 percent per year. This rate will most likely grow faster as e-business companies within the Kingdom learn how to gain and use their customers' trust. This means that e-business investing has reached an all-time height within the Kingdom. In general, one cannot currently compete without a few kinds of e-business procedure. Whereas e-commerce basically centres on a firm's customers, e-commerce extends the network of the organization to incorporate its suppliers, employees, and stakeholders.

E-business systems in Saudi Arabia are currently affordable in most international organizations and large local organizations, but the introduction of e-business among small and medium-sized enterprises (SMEs) in Saudi Arabia is a relatively unexplored area that needs to be better understood. The reason is that SMEs play a very significant role in the Saudi economy, and e-business introduction can transform this sector and make it more productive and competitive.

1.2 Goal

The main goal of this work is to deploy e-business systems for small and medium-sized enterprises in Saudi Arabia by studying the current level of adoption, finding the limitation and barriers to the growth of such systems and finally designing an infrastructure model to be easily applied in the market to transform businesses from traditional businesses into electronic businesses or e-businesses. This is to sustain competitive advantage and deliver customer satisfaction.

1.3 Objectives

1. To comprehensively study and determine the level at which SMEs in Saudi Arabia are adopting e-business.
2. To study the limitations and barriers affecting the adoption of e-business systems in Saudi SMEs.
3. To propose recommendations to design an e-business model that can be easily applied in SMEs in Saudi Arabia.

1.4 Methodology

The methodology of this research will be divided into four steps, as shown in the following:

1. Reviewing the literature on e-business, e-commerce and SMEs
2. Comprehensively studying the adoption of e-business by SMEs in Saudi Arabia
3. Defining a strategic approach and model for the adoption of e-business systems in Saudi SMEs

2. Literature Review

Information technology (IT) has had a colossal effect on the world of commerce. With the assistance of IT, trade forms and operations that used to require days or weeks can presently be performed in a matter of seconds. This allows people to be better served than they were in the past. Each firm that seeks future success is endeavouring to use effective e-business techniques. This is a hot issue within the world of commerce and is influencing every type of organization as they endeavour to improve their proficiency and remain ahead of their competitors. Waters (2000) demonstrated that e-business has become an inevitable reality of life, almost as fundamental to commerce as the phone.

The term 'e-business ' was first coined by IBM in 1997. Initially, it was defined as "the change of key commerce forms through the utilization of Web innovations" (Al-Gahtani, 2003). Amor extends the definition by depicting e-business as "a secured, adaptable and coordinated approach to organization to offer different companies value through the combination of frameworks and strategies and so be able to oversee the core commercial strategies with the effortlessness and introduction of Web innovations" (Al-Ghaith, Sanzogni & Sandhu, 2010). These two definitions of e-business both allude to utilizing the Web to interface with customers, suppliers, and other stakeholders. Nonetheless, the term also implies a transformation of existing trade forms into more productive ones.

E-business allows the amplified organization to be connected. This implies that all workers, customers/clients, suppliers, and other partners, regardless of geographical location, are interconnected. E-business tasks include common electronic information benchmarks with computer robotization innovations to electronically interconnect data frameworks, coordinate inner and outside information flows, and computerize commerce forms between trade partners (Wellbeing Industry Nowadays, 1999). E-business encourages information flows in business-to-business or system-to-system forms. The foremost imperative task of e-business is its interconnectivity and framework interaction. As a result of mechanization, numerous human capacities are eliminated from different forms, such as pointless key input, mediation, and inner reprocessing of electronic trade data. The effectiveness improvement from quicker handling and diminished errors is, at that point realized in schedule information forms and commercial interactions.

E-business allows the benefiting suppliers to connect with their suppliers and customers (Follit, 2000). Evidently, the number of applications for e-business processes is nearly infinite (Bharadwaj & Soni, 2007). There are six fundamental commercial models for conducting transactions with e-business on the Web. These six fundamental commercial models are business-to-business (B2B), business-to-consumer (B2C), business-to-employee (B2E), business-to-government (B2G), consumer-to-consumer (C2C), and a hybrid that combines both the B2B and B2C models (Pearlson & Saunders, 2006). Each of these distinctive models communicates with a buyer and a vender, and through them products, transactions and data can pass through the Web. The B2B model centres on the relationship between two businesses and is characterized by internal items and transactions or the sharing of information. The B2C model centres on the relationship between a firm and a customer within the commercial centre.

The B2C model is most likely the most well-known model to most individuals. Websites that offer merchandise and transactions to buyers fall into this wide category. The B2E model focuses on the relationship between a firm and its employees. This is often ordinarily an internal form utilized by businesses to communicate and allow transactions to happen inside the organization.

2.1 E-Business and E-Commerce in Saudi Arabia

Saudi Arabia is endowed with large natural resources and is ranked first in the world in oil reserves (Global Oil Reserve, 2010). It has one of the fastest developing economies within the Middle Eastern world, and the future financial vantage point remains energetic, upheld by record-high global prices for both oil and natural gas (Darrat & Al-Sowaidi, 2010). Profiting from government endeavours to expand the residential economy and adopt elective (nonenergy) sources of national income, Saudi Arabia has experienced a surprising record of

development, at least over the recent period 2000-2010, whereby its genuine non-oil economy has been developing by more than 10% annually (Darrat & Al Sowaidi, 2010). The flourishing economy has led to a number of government initiatives promoting a leading innovation-based knowledge economy, the most notable being the establishment of "smart cities," for instance, the King Abdullah Economic City. This city contributes to increasing the number of organizations implementing e-business systems to become an integral part of their business transactions (Manibo, 2010). Furthermore, Saudi Arabia has the largest e-business market in the Gulf region, with a forecast value of US$3.3 bn in 2010, which is expected to rise to US$4.6 bn by 2014 (ReportLinker, 2010). E-business spending in Saudi Arabia has held up better than in some other neighbouring countries located in the Middle Eastern region (Sait, Al-Tawil, & Hussain, 2004). Despite the global financial crisis, which restricted global economic recovery, the Kingdom continues to be a lucrative market for e-business (OECD, 2004) products and services over the forecast period because it heavily invests in upgrading its IT and communications infrastructure (Tashkandi, 2010). Saudi Arabia's e-business market has a number of positive drivers, including a growing population and government support programmes (e.g., the Management Assistance Programme and Financial Assistance Programme) (ReportLinker, 2010). It is predicted that per capita e-business spending will reach US$173 by 2014, as PC penetration rises to more than 30%. Youthful demographics and a growing population are expected to support a positive market trajectory as well (ReportLinker, 2010).

2.2 Small and Medium-Sized Enterprises (SMEs)

2.2.1 Definition of SMEs

There is no single definition of SMEs. A few criteria, such as business, deals and speculation, are frequently utilized to define the term "SME." However, the most prevalent definition uses the "number of employees" as the essential basis to characterize an SME. Indeed, the definition of SMEs on the premise of a specific model (e.g., the number of employees) is not uniform across nations (Ayyagari, Beck, & Demirguc-Kunt, 2007). For example, in the United States of America (USA), an SME refers to an enterprise with less than 500 employees (Wen & Chen, 2010); however, in the European Union (EU), an SME is characterized as an enterprises with less than 250 workers (European Commission, 2010).

The fourth and fifth columns of Table 1 clearly show that there is almost no agreement on the upper limit of the number of employees utilized in characterizing an SME. The definition of Saudi SMEs given by Otsuki (2002) says that an SME is an enterprise with less than 100 workers. A smaller-scale enterprise in Saudi Arabia is considered to be one that has less than 10 workers. This definition is satisfactory since the majority of nations use it and there is no particular definition for SMEs for Saudi context.

Table 1. SME definitions by region

Regions	Literature sources	Micro	Small	Medium
USA	Ward (2010)	< 5	< 100	< 500
EU	European Commission (2010)	< 10	< 50	< 250
Australia	ABS (2004)	< 5	< 20	< 200
Asian				
Singapore	Hew and Loi (2004)	< 10	< 50	< 200
Malaysia	Hew and Loi (2004)	< 10	< 50	< 200
Korea	Hew and Loi (2004)	< 10	< 50	< 200
Hong Kong	Hew and Loi (2004)	< 10	< 50	< 200
Gulf Region				
Saudi Arabia	Otsuki (2002)	Not specified	< 60	< 100
Bahrain	Hertog (2010)	< 10	< 50	< 150
Oman	Hertog (2010)	< 5	< 20	< 100
UAE	Hertog (2010)	< 10	< 20	<100

2.2.2 SMEs in Saudi Arabia

The most commonly adopted definition of SMEs in Saudi Arabia is shown in Table 2. However, there is a need for a clear Kingdom-wide strategy for SMEs, with only one institution and one definition.

Table 2. Current Ddefinition of SMEs in Saudi Arabia (champer of comerce, 2015)

Current Definition of SMEs in Saudi Arabia		
Enterprise Category	**No. of Employees**	**Annual Revenue**
Micro	1–2	Less than USD 27,000
Small	3–49	USD 27,000–1.3 million
Medium	50–200	USD 1.3–13.3 million

2.3 Adoption of E-Business by SMEs in Saudi Arabia

In recent years, some scholars have initiated e-business-related studies in the Saudi context. First, most studies focus on B2C systems, and a few studies examine B2B e-business systems. Second, the primary objective of most studies is to understand the decision of individuals (people/organizations) to adopt e-business systems. Third, few studies focus on IT/e-business introduction in SMEs. The few studies that examine some aspects of IT/e-business introduction identify several key factors that affect their adoption in the Saudi context. These factors include comparative advantage (Al-Gahtani, 2003), compatibility (Al-Gahtani, 2003), complexity (Al-Gahtani, 2003), technical issues (Al-Hawari, Al–Yamani, & Izwawa, 2008), security concerns (Al-Hawari, et al., 2008), enterprise IT experience (Alfuraih, 2008) and cost (Alfuraih, 2008). Finally, none of these studies examine technology introduction in SMEs using a stage model framework, perhaps due to the lengthy time periods needed to undertake such an investigation. Although SMEs currently have huge effects on the Saudi market, there is no clear research that distinguishes the adoption of e-business systems between large and smaller enterprises. Most studies put all types of enterprises under one umbrella, in addition to including large global organizations. For example, (Sait, et al., 2004) examined e-business adoption in the Saudi context. Sait identified the factors that influence e-business adoption in Saudi Arabia, for instance, the lack of skills, security concerns, privacy and competition. Alwabel and Zairi found that the most important factors that influence e-business introduction in Saudi Arabia are competition intensity, supplier/customer pressure, regulatory issues, value chain process and top management support and commitment. Although these studies are useful, their focus is not on the SME context. Hence, further research is needed.

2.4 Target SME Population and Sample Size

Based on the definition mentioned in the literature review, SMEs in Saudi Arabia are companies with more than 3 employees and less than 200 employees and with annual revenue between 27,000 USD and 13.3 million USD, as mentioned in Table 2 in the previous section. According to the Saudi Chamber of Commerce, the total number of SMEs is approximately 265,000 enterprises in different sectors. Since the number is very large, a random sample was picked according to the following criteria:

- The sample should contain all leading SME sectors in Saudi Arabia, such as trade, construction, industrial manufacturing and social services.
- For the purposes of this research, we focused primarily on the fastest-growing SMEs in Saudi Arabia since they are most likely to participate in and encourage this study compared to others. They were determined by the Saudi Arabian General Investment Authority's (SAGIA) Private Sector Initiatives Programme, called the Saudi Fast Growth 100.

According to the above criteria, a sample of 150 SMEs was picked randomly with a confidence level of 95% and a confidence interval of 8%.

2.5 Data Collection

The methodology used for data collection consisted of distributing questionnaires to the selected companies, and the questionnaire distribution and design are explained in the following.

2.6 Questionnaire Design

The questionnaire was designed according to the main research questions regarding the level of e-business adoption by Saudi SMEs and the barriers limiting this adoption.

The questionnaire started with a brief half-page introduction of the research purposes and the researcher. Then, the questions started with the name of the company, the name of the employee (voluntary) and employee's position. The questions were divided into two parts:

Part one: A question about the level of adoption is asked: "At which level do you think your company has adopted e-business?"
Part two: A Likert-type scale is used for each of the common barriers discussed in the literature review, excluding some barriers that are most likely not applicable in Saudi Arabia, When responding to a Likert scale item, respondents indicate their level of agreement or disagreement on a symmetric agree-disagree scale organized based on a certain number of responses. In this way, the scale captures the level of their sentiments with regard to a given item. One means strongly disagree, 3 means neither agree nor disagree, and 5 means strongly agree. The total number of barriers is 26 (listed in Table 4).

Table 4. Barriers to e-business adoption by SMEs

#	Barrier name
1	Lack of popularity of online marketing and sales
2	Lack of awareness of e-commerce benefits
3	Lack of external pressure from suppliers and customers
4	Linguistic barriers
5	Lack of Internet security
6	E-commerce infrastructure
7	Lack of qualified staff
8	Inadequate quality and speed of lines
9	Increased innovations and new technologies
10	Lack of financial infrastructure
11	Unclear benefits from e-commerce adoption
12	Cost too high
13	Competitive pressure
14	Lack of secure payment infrastructures
15	Change in regulations with each government
16	Changes in government policy
17	Lack of an appropriate legal environment to apply e-commerce
18	Low level of readiness among government institutions
19	Difficulty in changing the existing working procedures
20	Lack of management support
21	Organizational resistance to change
22	Limited use of Internet banking and web portals by SMEs
23	Absence of legal and regulatory systems

24	No simple procedures and guidelines
25	Lack of e-commerce standards
26	Lack of e-trading legislations

2.7 Questionnaire Distribution

Data collection and the distribution of questionnaires took almost three months. The directory of the Saudi Chamber of Commerce was very helpful in finding the contact information for each of the 150 SMEs, and contact was made either personally by phone or in most cases through e-mail. One questionnaire was distributed to each SME, and it was required for the questionnaire to be completed by any employee in a managerial position or in an IT position, if any. In fact, not all distributed questionnaires were returned. There were many reasons, such as simply no response from some companies to emails or phone calls, no interest in improving e-business systems in some companies or in some cases the inability to find employees in the required positions. However, 109 questionnaires out of 150 were returned. This means that the response rate was 72.6%.

2.8 Data Analysis

The data of the questionnaire will be analysed in two ways according to the question type. For the responses to the questions in part A, the analysis is easy, consisting of just comparing the percentage of each level in one chart, which will give us a clear indication of SMEs' level of e-business adoption. For the responses to the questions in part two, the analysis is slightly complex since there are 26 barriers, and each is scored on a symmetric Likert scale. The following methodology will explain how the data are analysed in this part of the study:

1. To facilitate the analysis of the responses to the questions in part two, the 26 questions are grouped into six categories based on the nature of the barrier: social and cultural barriers, technical barriers, economic barriers, political barriers, organizational barriers and legal barriers. The barriers and their groups are shown in Figure 1.

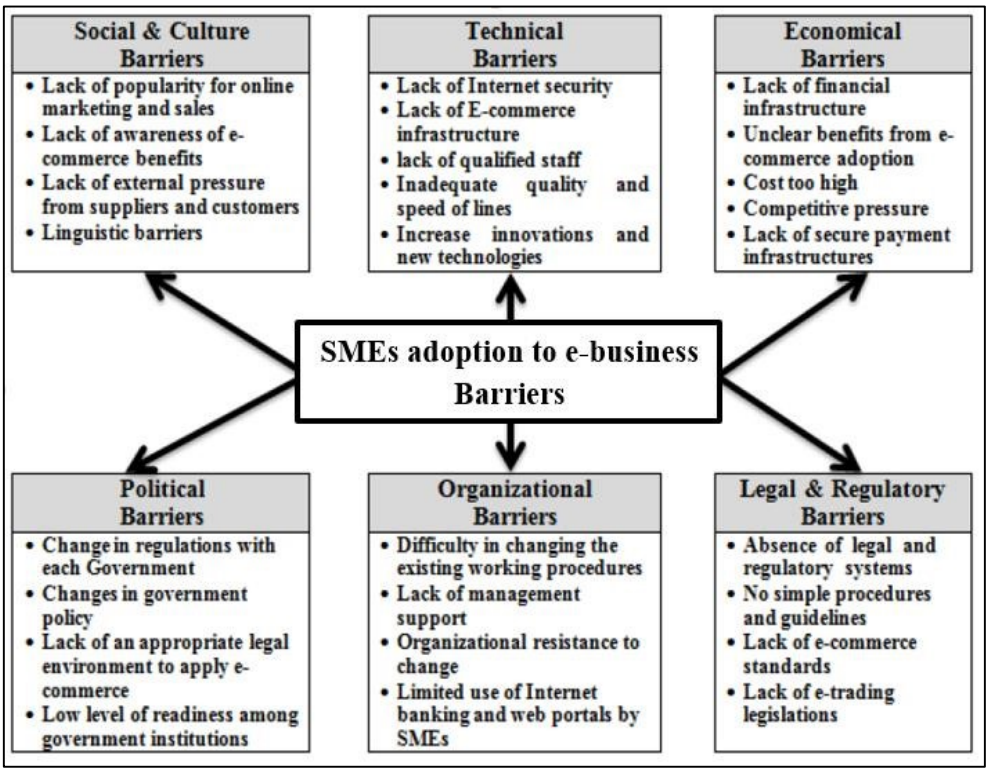


Figure 1. Groups of barriers

2. To analyse the data, the mean score for each barrier will be calculated by summation of the product of the

scale into its total number of participants and then dividing it by the total of all participants, which is equal to 109 (total number of questionnaires). The formula for calculating the mean scores is as follows:

$$Rating\ mean = \sum_{i=1}^{5} \frac{i * x_i}{n}$$

i = Likert scale number for each barrier =1, 2, 3, 4 and 5 x_i = Number of participant responses for each number on the scale (i) n = Total number of participant = 109

3. The calculated mean score for each barrier is used to assess the degree of importance of each barrier, and it is ranked as shown in Table 5.
4. The degree of importance of the groups of barriers will be calculated as an average in relation to the groups' single barriers. A strong or medium score is accepted as an effective barrier to e-business adoption by SMEs.

Table 5. Degree of importance according to mean scores

	Criteria	Effect
1	If the mean scores is greater than or equal to 4.00, the group of barriers or single barrier has a strong effect	Strong Effect
2	If the mean score is greater than or equal to 3.00 and less than 4.00, the group of barriers or single barrier has a medium effect	Medium Effect
3	If the mean score is less than 3.00, the group of barriers or single barrier has a low effect	Low Effect

3. Results and Discussion

In this section, the results of the two parts of the questionnaire will be discussed and analysed. Part A is related to the level of adoption, and Part B is related to the limitations and barriers.

3.1 Part A: Results of the Level of E-Business Adoption by Saudi SMEs

Table 6 and Figure 2 show the results obtained from the questionnaires based on the DTI adoption ladder discussed in the literature review:

Table 6. Results for the level of e-business adoption by Saudi SMEs

Adoption Level	Number of SMEs	Percentage
E-Mail level	15	14%
Website Level	83	76%
E-Commerce Level	7	6%
E-Business Level	4	4%
Total	**109**	**100%**

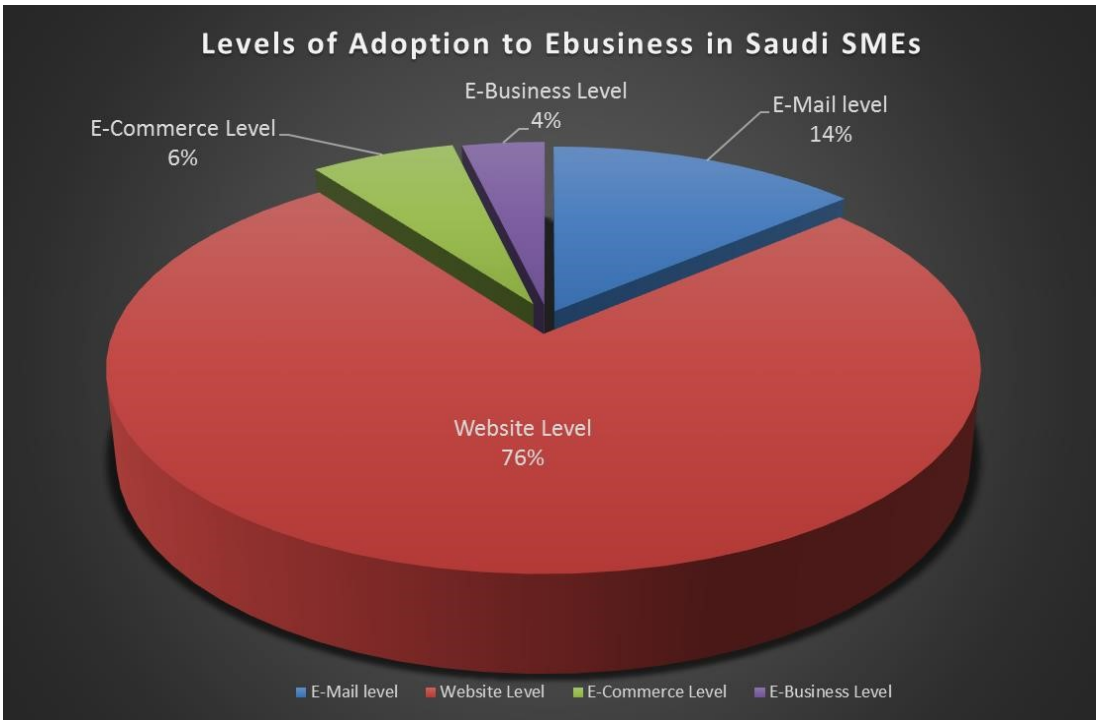


Figure 2. Results for the level of e-business adoption by Saudi SMEs

From Table 3 and Figure 2, it is obvious that the majority of SMEs in Saudi Arabia are at the website level, with a percentage of 76%. Additionally, based on the above results, it is obvious that there is a proportion of SMEs that do not even exist on the internet; 14% of SMEs in Saudi Arabia are using only e-mail and nothing else to facilitate communication. One of the purposes of this work is to help these companies at least exist in the internet world and find a place for themselves among others. In fact, 6% of SMEs are already at the e-commerce level. This will help them complete growing to the e-business level to reach the top of the ladder, which will directly contribute to minimizing waste at every stage of their supply chain. Fortunately, 4% of SMEs have already reached the top of the ladder and are at the e-business level, which is a promising number.

Table 3. Levels of e-business adoption

Level Rank	Level name	Business benefits
1	e-mail level	Efficient internal and external communication
2	website level	A place in the worldwide market
3	e-commerce level	Ordering and paying online, reducing costs, maximizing accessibility and speed.
4	e-business level	Integrated supply chain and delivery, minimized waste at every stage of the supply chain

3.2 Part B: Results of the Barriers to E-Business Adoption by Saudi SMEs

In this part, the result will be shown in a histogram, followed by a discussion of each of the 26 barriers. Then, the results of each barrier group will be discussed, and finally, a summary of all results will be given in one table.

3.2.1 Social and Cultural Barrier Results

The social and cultural barrier group consists of four major barriers, as discussed in the literature. These barriers are as follows:

- Lack of popularity of online marketing and sales
- Lack of awareness of e-commerce benefits
- Lack of external pressure from suppliers and customers
- Linguistic barriers

Each of the above barriers will be discussed separately in the following:

- **Lack of popularity of online marketing and sales**

From Figure 3, we can see that the majority of SMEs strongly disagree that the lack of popularity of online marketing and sales is a barriers. The mean score is ((1*30)+(2*45)+(3*10)+(4*15)+(5*9))/109 = 2.339, which means that this barrier has no effect on the decision of SMEs in Saudi Arabia to adopt e-business. In fact, this result represents the reality in which the popularity of website and online marketing has grown significantly in recent years.

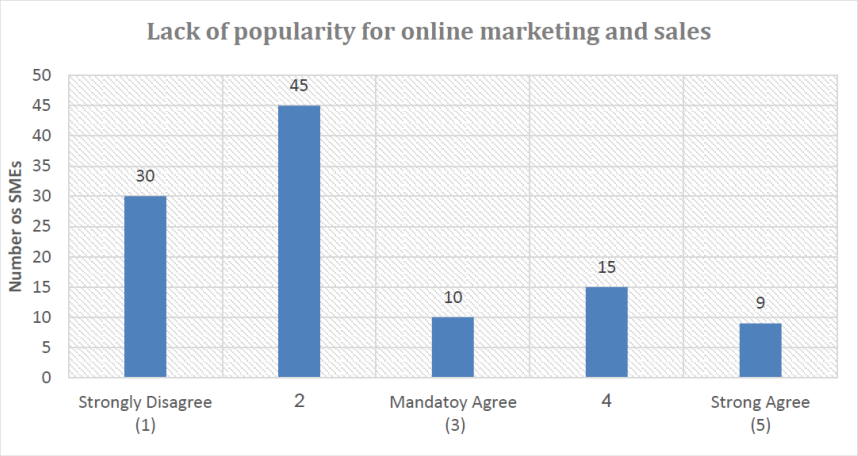


Figure 3. Results of the barrier: lack of popularity of online marketing and sales

- ***Lack of awareness of e-commerce benefits***

The means score of the barrier of a lack of awareness of e-commerce benefits is ((1*43)+(2*20)+(3*20)+(4*10)+(5*16))/109 = 2.413, which means that this barrier has no effect, and the majority of SMEs agree with the benefits of e-commerce application, as shown Figure 4.

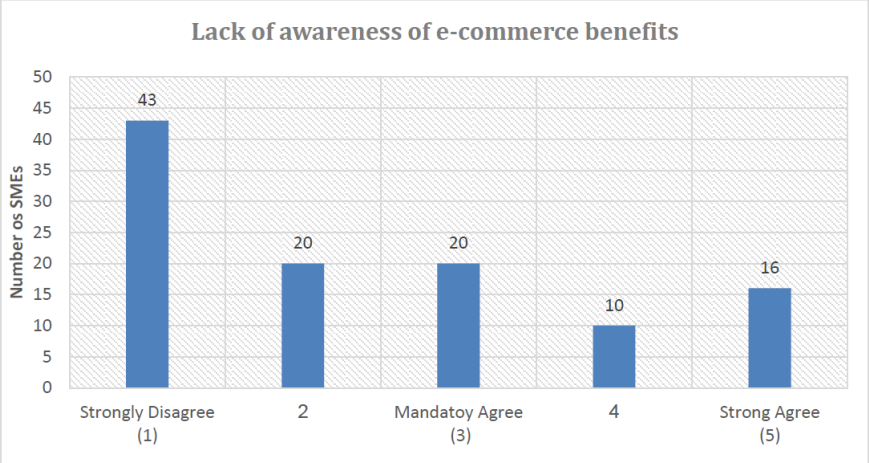


Figure 4. Results of the barrier: lack of awareness of e-commerce benefits

- **Lack of external pressure from suppliers and customers**

External pressure from suppliers sometimes plays a major role in terms of forcing an organization to apply changes in its processes, but for SMEs in Saudi Arabia, this is not the case since suppliers are concerned with applying e-business instead of traditional business. As shown in the above graph, the majority of SMEs disagree or neither agree nor disagree that this pressure is a barrier. The mean score here is ((1*23)+(2*10)+(3*40)+(4*40)+(5*20))/109 = 2.963, which means it has a low effect on the decision to adopt e-business, as shown in Figure 5.

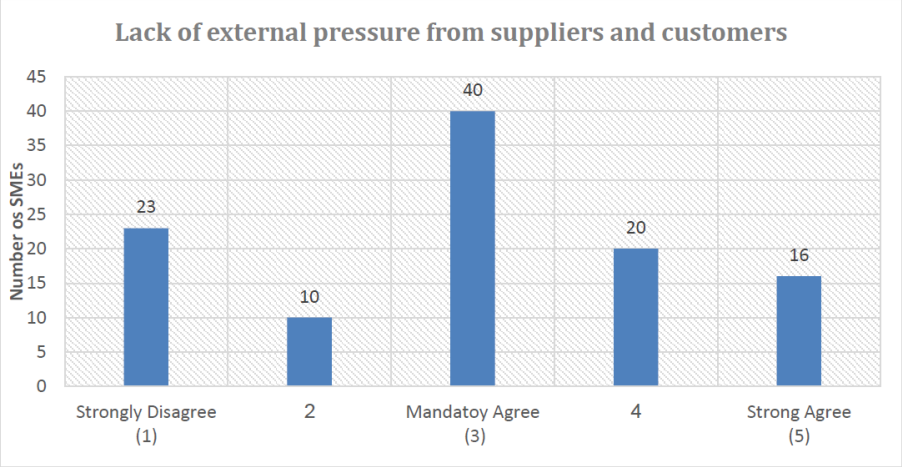
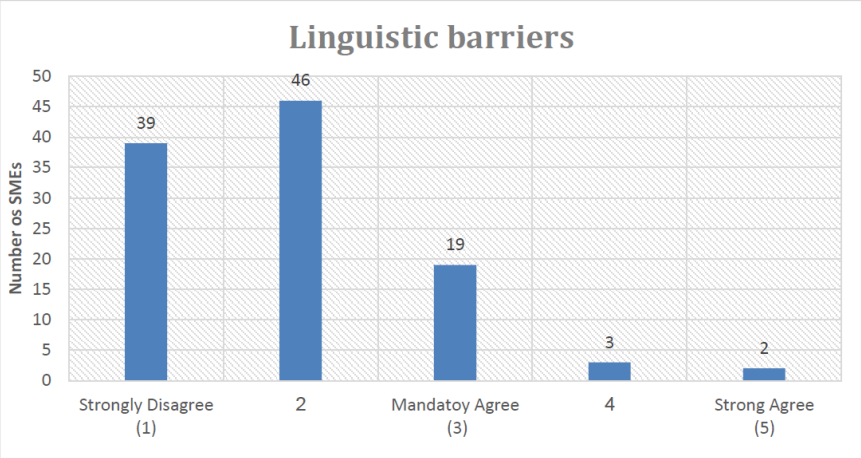


Figure 5. Results of the barrier: lack of external pressure from suppliers and customers

- **Linguistic barriers**

As shown in the above graph, linguistic barriers have no effect on the decision to adopt e-business since such barriers are not the case in our local market. Most e-business is done in the Arabic language or sometimes in the English languages, which has recently become more popular in our society. Therefore, the mean score of linguistic barriers was ((1*39)+(2*46)+(3*19)+(4*3)+(5*2))/109 = 1.927, which means that linguistic barriers have no effect at all, as is obvious from Figure 6, where the majority of responses indicate disagreement.



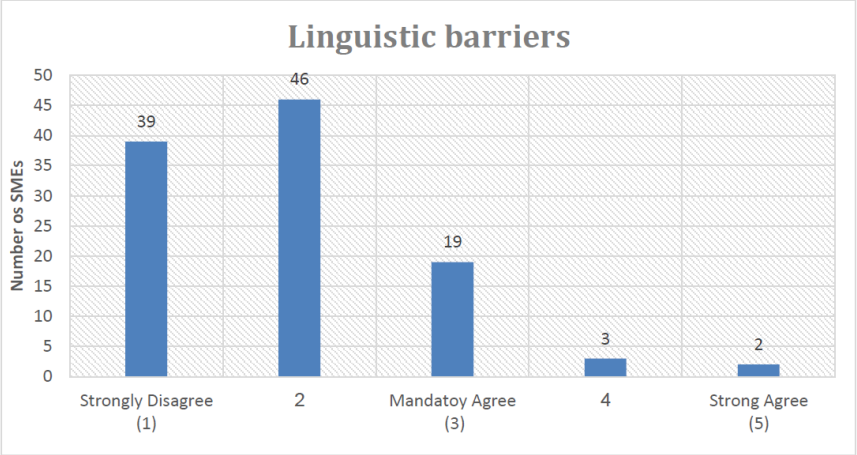


Figure 6. Results of the barrier: linguistic barriers

3.3 Technical Barriers

The technical barriers are as follows:

- Lack of Internet security
- Lack of e-commerce infrastructure
- Lack of qualified staff
- Inadequate quality and speed of lines
- Increased innovations and new technologies

Each barrier will be discussed separately in the following:

- **Lack of Internet security**

As we can see from Figure 7, all SMEs agreed that this is a barrier, with the only differences being in the level of their agreement. The mean score of this barrier is ((1*0)+(2*0)+(3*14)+(4*38)+(5*55))/109 = 4.358, which means that this barrier has a strong effect on the decision to adopt e-business in the local market. In fact, these results reflect that there are still many concerns about data being stolen or hacking through e-commerce systems.

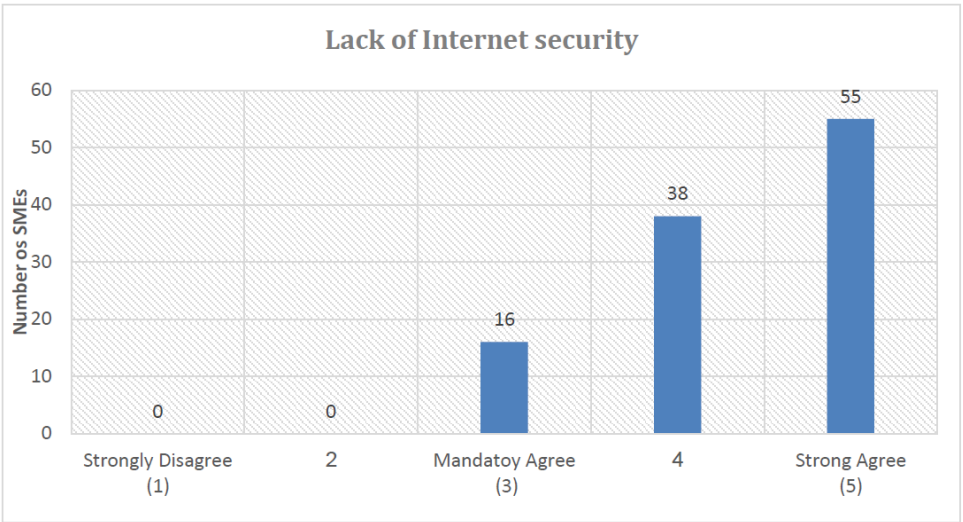


Figure 7. Results of the barrier: lack of Internet security

- **E-commerce infrastructure**

Having an e-commerce infrastructure means that an organization has all the basic requirements to run an ecommerce system smoothly. Such an infrastructure consists of a logistics system that supports the ecommerce business, trained workers to run day-to-day e-commerce operations and, most importantly, all the necessary resources such as time and money. The mean score of this barrier was expected to be very high, just as reflected in the responses shown in Figure 8.

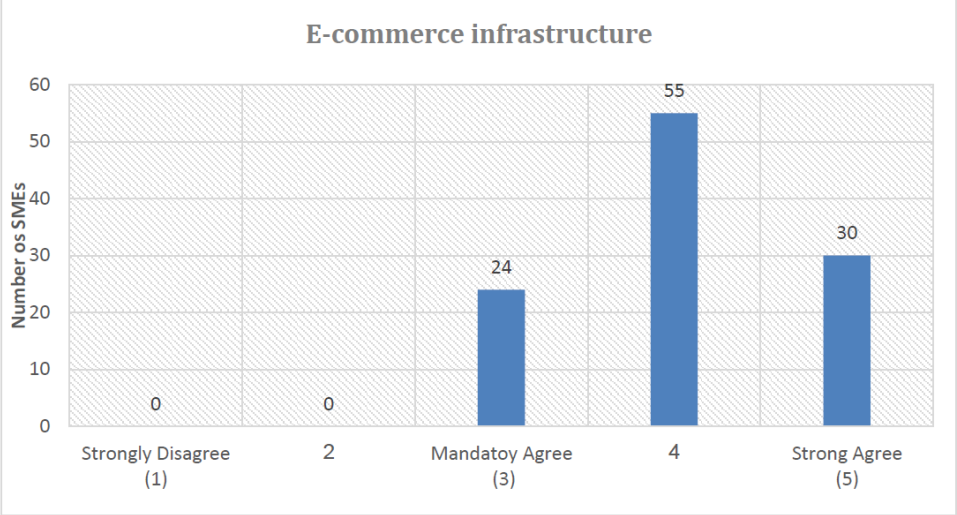


Figure 8. Results of the barrier: e-commerce infrastructure

The mean score is ((1*0)+(2*0)+(3*24)+(4*55)+(5*30))/109 = 4.055. This barrier is considered to have a strong effect on the decision to adopt e-business.

- **Lack of qualified staff**

As shown in Figure 9, a lack of qualified staff is considered one of the highest barriers, having a strong effect on the decision to adopt e-business; its mean score is((1*0)+(2*0)+(3*19)+(4*10)+(5*80))/109 = 4.560.

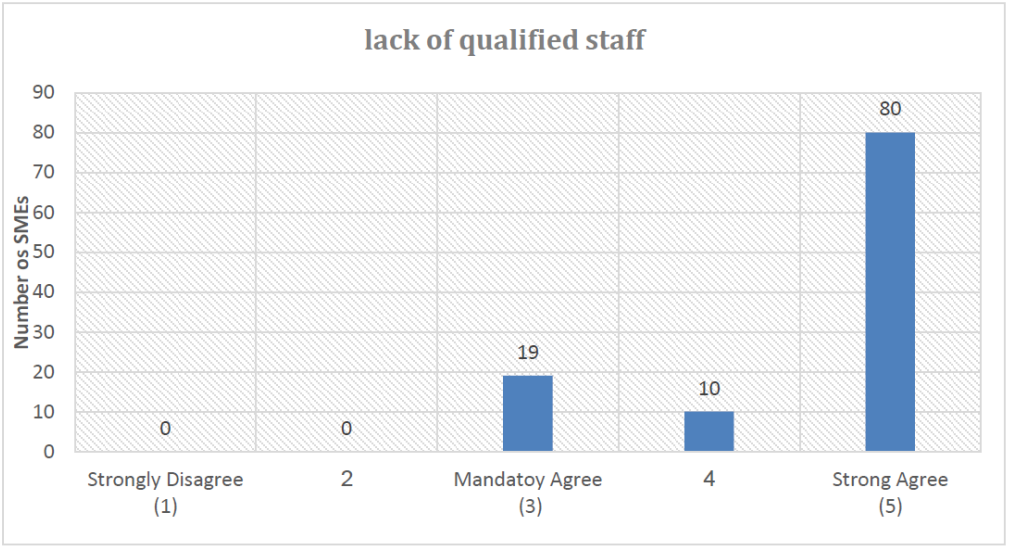


Figure 9. Results of the barrier: lack of qualified staff

- **Inadequate quality and speed of lines**

The quality and speed of internet lines play an important role in e-business or ecommerce application. The quality and speed of lines could be one of the barriers affecting the decision to adopt e-business, especially for SMEs that have a limited budget to afford such capabilities. The mean score of this barrier is ((1*15) + (2*12)+ (3*40)+ (4*15) + (5*27)) /109 = 3.248, which means that it has a strong effect but not an effect that is as strong as that of the other technical barriers. This could be because of the recent boom in internet technologies with affordable prices introduced by communication companies. However, these options are only available in major cities, which could be the reason for the variances observed in Figure 10.

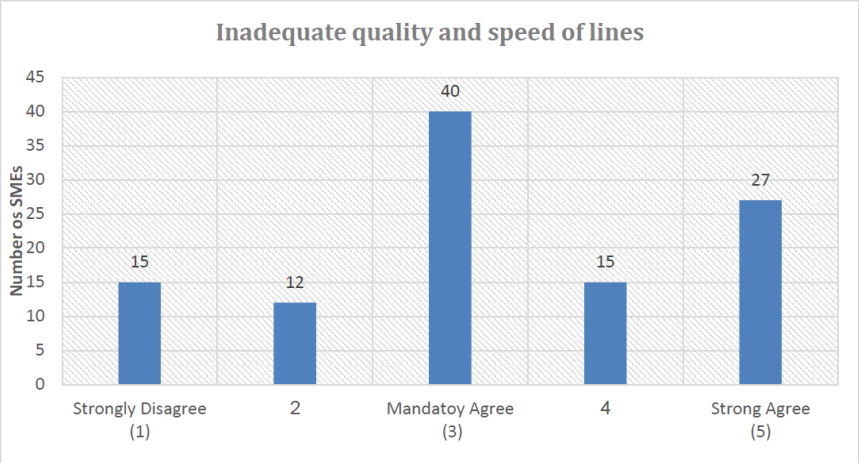


Figure 10. Results of the barrier: inadequate quality and speed of lines

- **Increased innovations and new technologies**

Innovations and new technologies are considered barriers to adopting e-business for some SMEs that are still using old systems run by people with an old and traditional mindset. On the other hand, this factor could be a motive to apply e-commerce for fresh blood and innovative SMEs in Saudi Arabia. According to our sample of fast growing SMEs, the results varied between agreeing and disagree, and the mean score from the Figureure below is ((1*5)+(2*10)+(3*14)+(4*30)+(5*50))/109 = 4.009. This means that increased innovations and new technologies are considered a barrier with a strong effect on the decision to adopt e-business, which may reflect the reality that most of our SMEs are still run in traditional ways and with old mindsets, as shown in Figure 11.

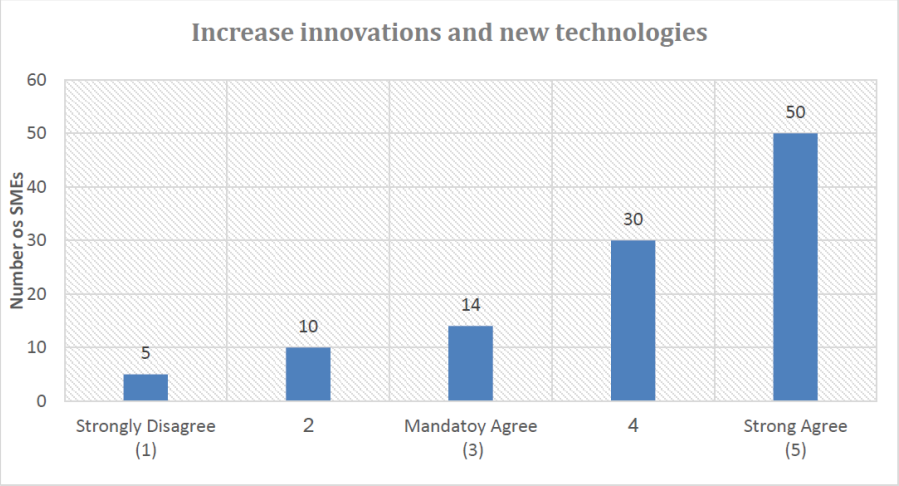


Figure 11. Results of the barrier: increased innovations and new technologies

3.4 Economic Barriers

The economic barriers are as follows:

- Lack of financial infrastructure
- Unclear benefits from e-commerce adoption
- Cost too high
- Competitive pressure
- Lack of secure payment infrastructures

Each of these barriers will be discussed separately in the following points.

- **Lack of financial infrastructure**

The lack of financial infrastructure means that there are unclear roles in budgeting and money allocation in the organization, which could be a barrier affecting e-business adoption by Saudi SMEs. Figure 12 shows the result of this barrier:

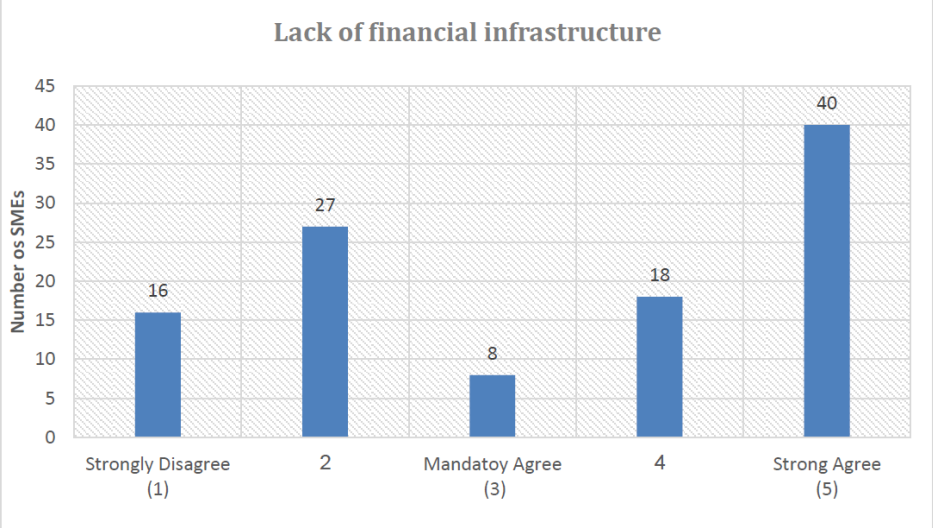


Figure 12. Results of the barrier: lack of financial infrastructure

The mean score is ((1*16)+(2*27)+(3*8)+(4*18)+(5*40))/109 = 3.358, which means that this barrier affects the decision to adopt e-business in Saudi SMEs.

- **Unclear benefits from e-commerce adoption**

Many SMEs are concerned with having an e-commerce system that costs money more than the revenue it brings in. Figure 13 shows the results of this barrier.

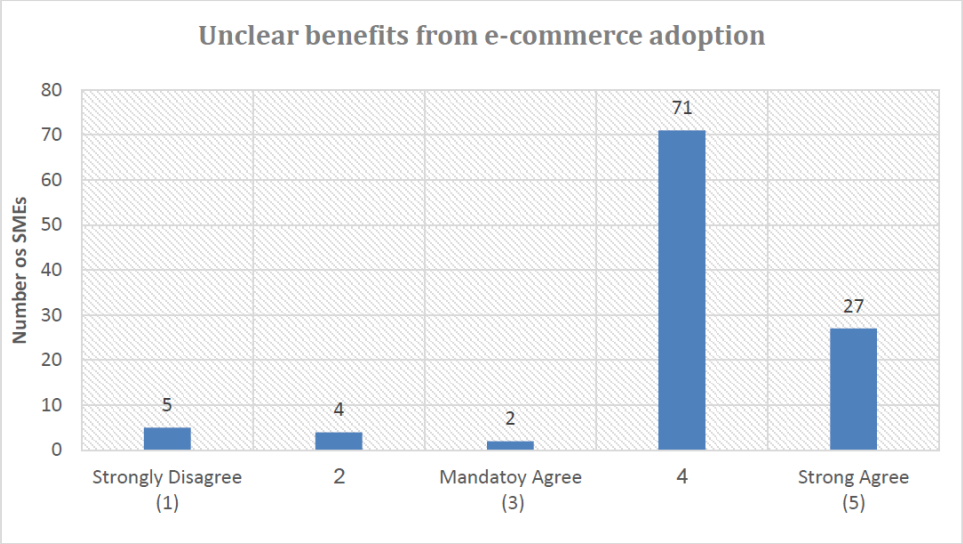


Figure 13. Results of the barrier: unclear benefits from e-commerce adoption

The mean score for this barrier is ((1*5)+(2*4)+(3*2)+(4*71)+(5*27))/109 = 4.018, which means that for most SMEs in our market, the benefits from e-commerce in financial terms are unclear. In fact, this barrier has shown a strong effect on the decision to adopt e-business, as the mean score clearly indicates.

- **Cost too high**

It is clear from Figure 14 that the cost plays a major rule in terms of applying either e-commerce or e-business systems; the majority of the responses by SMEs indicated that they agree or strongly agree that this is a real barrier. The mean score is ((1*5)+(2*4)+(3*2)+(4*71)+(5*27))/109 = 4.514, reflecting reality. Cost is the major concern that always stands between organizations and new ideas. For this reason, cost should be our main focus when designing a business model for SMEs in Saudi Arabia.

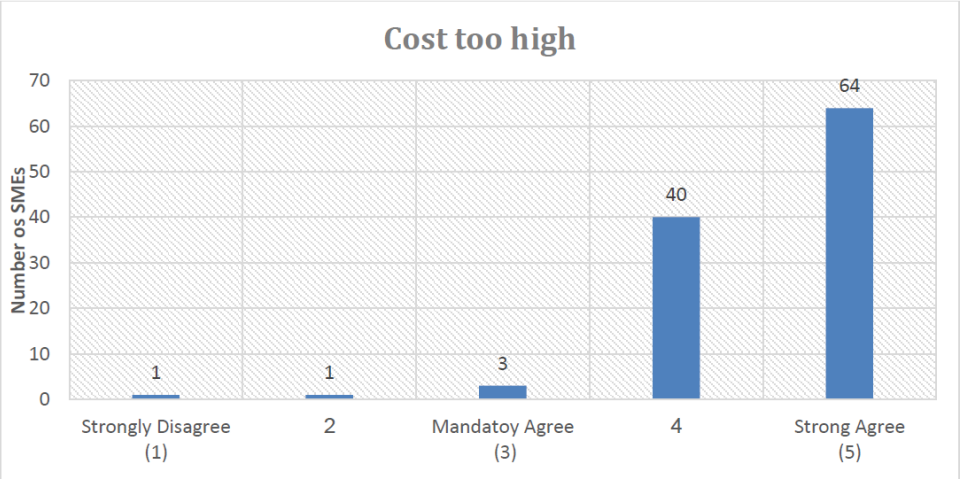


Figure 14. Results of the barrier: cost too high

- **Competitive pressure**

This barrier concerns competition from the economic side: is there any competition that requires local market organizations to have a strong e-business system to compete? If the answer is no, then competitive pressure is one of the barriers. Figure 15 shows the results of this barrier.

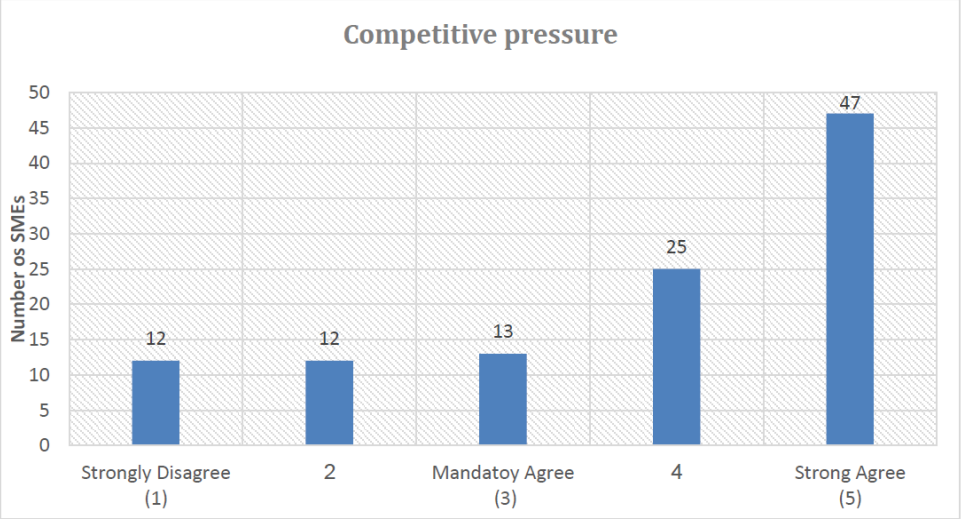


Figure 15. Results of the barrier: competitive pressure

The mean score is ((1*12)+(2*12)+(3*13)+(4*25)+(5*47))/109 = 3.761, which indicates that this barrier affects the decision to adopt e-business in Saudi SMEs.

- **Lack of secure payment infrastructures**

From the economic perspective, security does indeed matter, just as it does from the technical perspective, especially when there are payments and exchanges of money, products and services. From Figure 16, the mean score is ((1*0)+(2*0)+(3*16)+(4*48)+(5*45))/109 = 4.266, which obviously indicates that payment security has a strong effect on the decision to adopt e-business in Saudi SMEs.

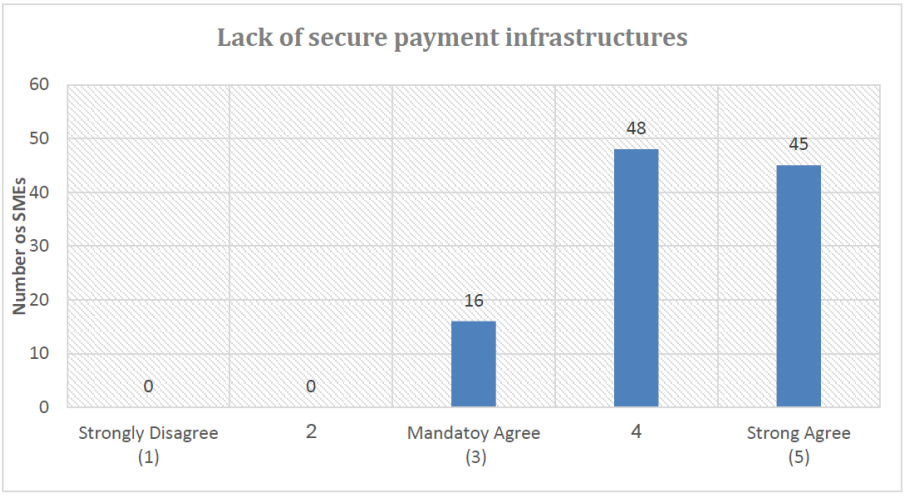


Figure 16. Results of the barrier: lack of secure payment infrastructures

3.5 Political Barriers

The political barrier group consists of the following:

- Changes in regulations with each government
- Changes in government policy
- Lack of an appropriate legal environment to apply e-commerce
- Low level of readiness among government institutions

As with the analysis above, each one of these barriers will be discussed separately.

- **Changes in regulations with each government**

The mean score of this barrier is ((1*31)+(2*40)+(3*18)+(4*11)+(5*9))/109 = 2.330, which means that there is almost no effect of this barrier on the decision to adopt e-business. This may be reflected in our local market since governments do not change frequently and if when they do, the same regulations and fundamentals are maintained by the new government. Of course, there are dramatic improvements made by governments, but the basic rules in terms of e-business and SME regulations are still retained, as shown in Figure 17.

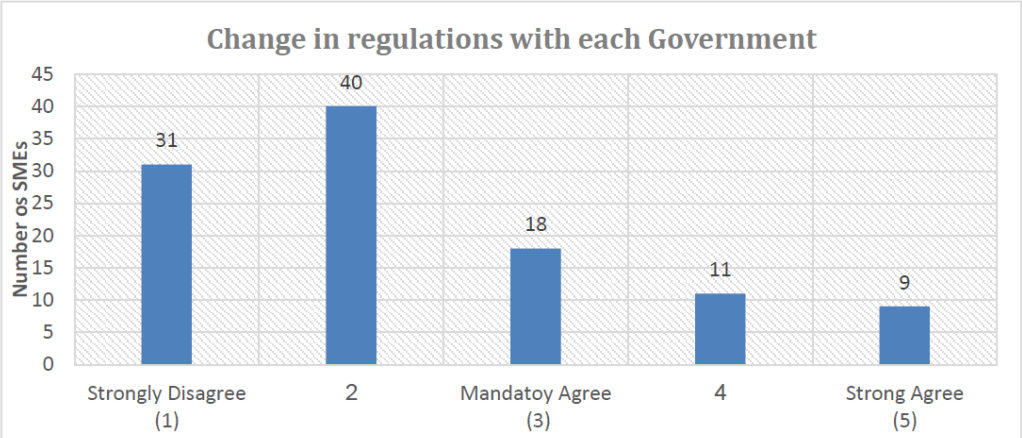


Figure 17. Results of the barrier: changes in regulations with each government

- **Changes in government policy**

The mean score of this barrier is ((1*32)+(2*49)+(3*18)+(4*7)+(5*3))/109 = 2.083, which means that there is also no effect of changes in government policy on the decision by SMEs to adopt e-business, as shown in Figure 18. The same applies for both regulations and policies. To distinguish between the two terms, regulations are rules that are made by organizations to realize their goals and objectives, whereas policies are made by people, groups, companies, and indeed governments to carry out their plans. However, regulations are rules that are made to force individuals to comply and proceed in a certain way. A regulation has the effect of a law and is considered a restriction that is enforced by specialists to make individuals adopt the specified code of conduct.

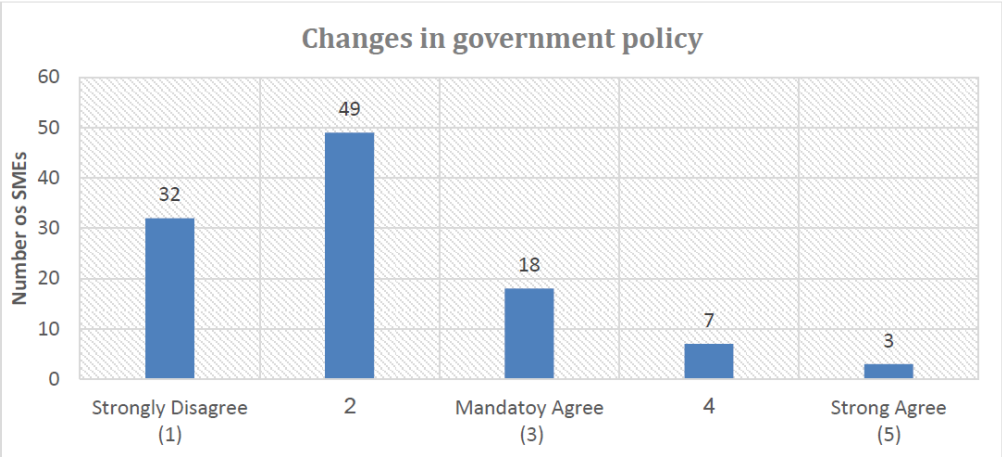


Figure 18. Results of the barrier: changes in government policy

3.6 Lack of an Appropriate Legal Environment to Apply E-Commerce

The lack of an appropriate legal environment is a more general category than policies and regulations; it concerns the whole environment of the e-commerce system, including the supply chain system and logistics, from a legal perspective. When dealing with e-business or e-commerce systems, many problems, failures and acts of fraud are highly anticipated. The Figureure below shows the result of this barrier.

The mean score of this barrier is ((1*20)+(2*17)+(3*61)+(4*6)+(5*5))/109 = 2.624. This means that this barrier has a low effect on the decision by SMEs to adopt e-business, as shown in Figure 19. To explain these results, the reason could be the recently developed laws against fraud and all other similar acts through e-businesses in Saudi Arabia.

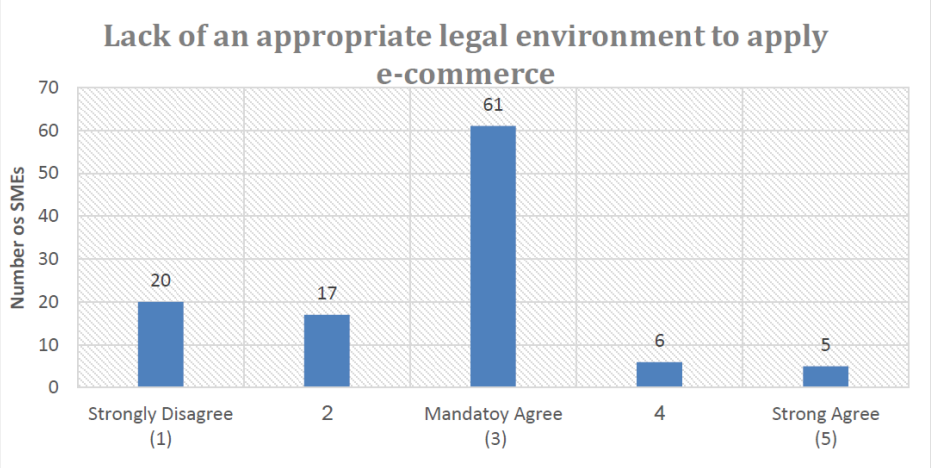


Figure 19. Results of the barrier: lack of an appropriate legal environment

- **Low level of readiness among government institutions**

The mean score of this barrier is ((1*18)+(2*20)+(3*66)+(4*2)+(5*3))/109 = 2.560, which means that there is a good level of readiness in our government for e-business to take place, and government readiness is no longer a barrier to e-business adoption by SMEs in Saudi Arabia, as shown in Figure 20.

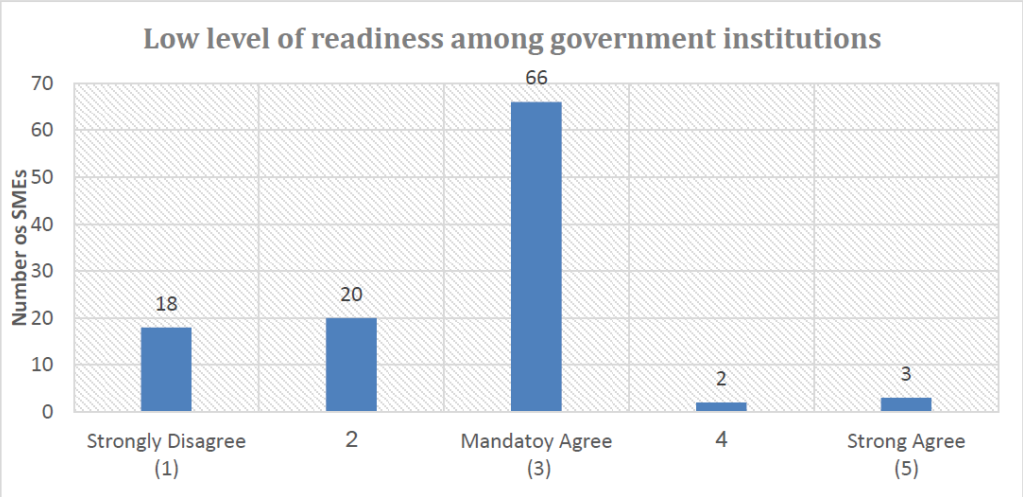


Figure 20. Results of the barrier: low level of readiness among government

3.6.1 Organizational Barriers

The organizational barrier group consists of the following:

- Difficulty in changing the existing working procedures
- Lack of management support
- Organizational resistance to change
- Limited use of Internet banking and web portals by SMEs

As with the analysis above, each of these barriers will be discussed separately.

- **Difficulty in changing the existing working procedures**

The mean score of this barrier is ((1*0)+(2*0)+(3*10)+(4*27)+(5*72))/109 = 4.569, which means that for SMEs, there is difficulty in the process of changing their existing work procedures, as is obvious from Figure 21. The responses of the majority of SMEs indicate that they neither agree nor disagree, agree, or strongly agree that this barrier has a strong effect on the decision to adopt e-business in our local market.

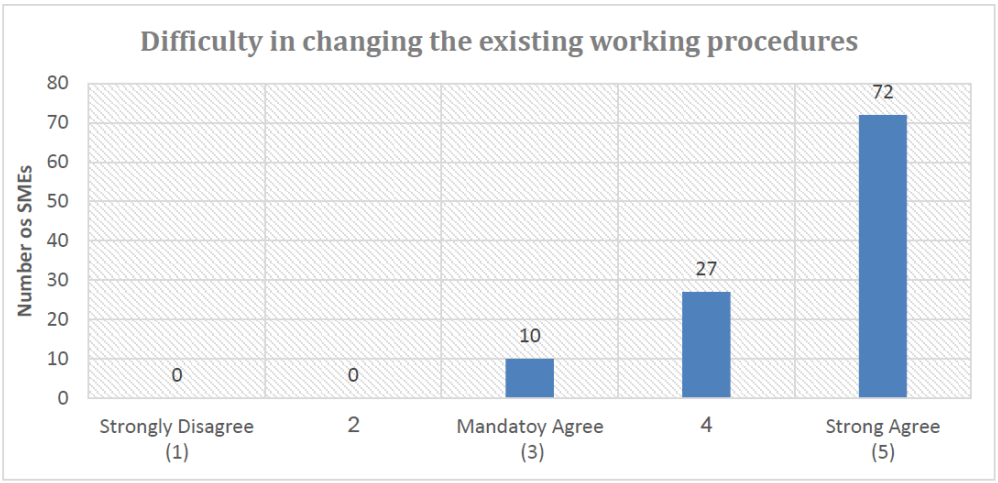


Figure 21. Results of the barrier: difficulty in changing the working procedures

- **Lack of management support**

The mean score of this barrier is ((1*1)+(2*2)+(3*25)+(4*48)+(5*33))/109=4.009, which means that it has a strong effect since most of employees mentioned the lack of management support as one of the main reasons their organizations did not apply e-business or e-commerce systems, as shown in Figure 22.

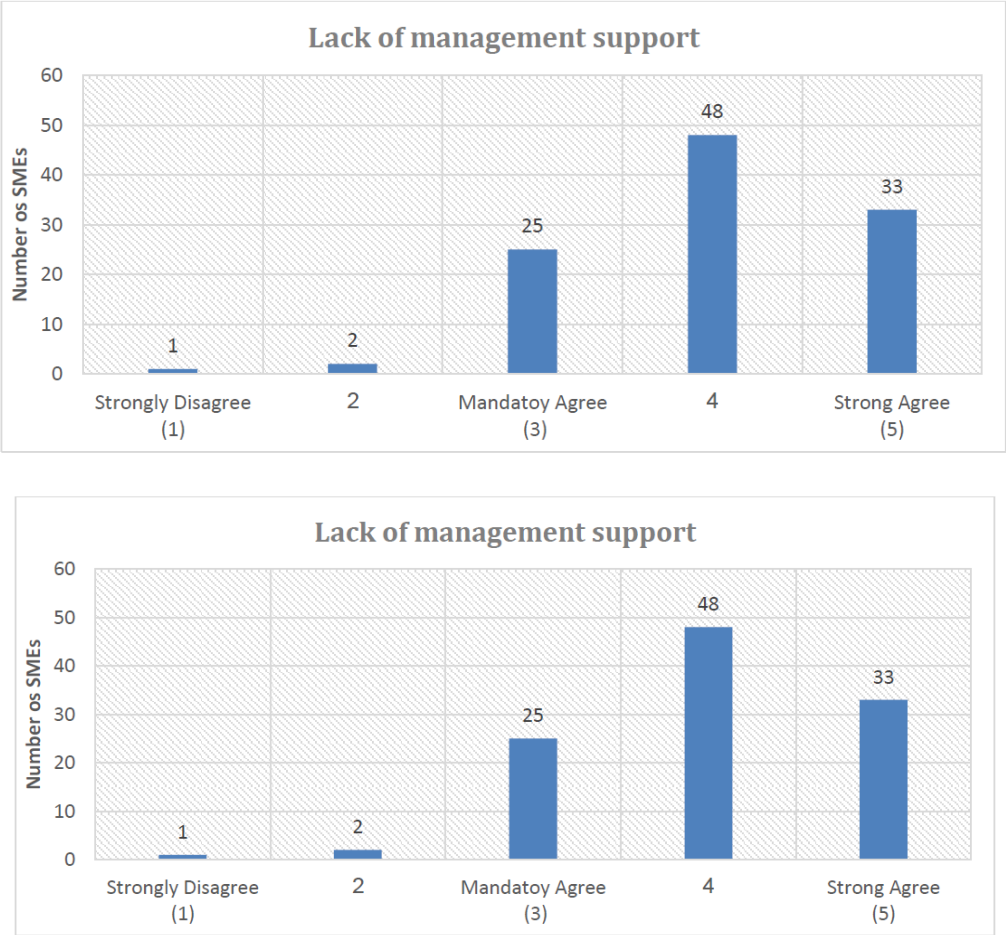


Figure 22. Results of the barrier: lack of management support

- **Organizational resistance to change**

The mean score of this barrier is ((1*0)+(2*0)+(3*16)+(4*22)+(5*71))/109=4.505, which means that organizational resistance to change could be one of the strongest and most effective barriers to the adoption of e-business by Saudi SMEs, as shown in Figure 23. Resistance to change is a well-known term indicating that there is always opposition against any innovation, and apparently, it is a common problem in most of our SMEs.

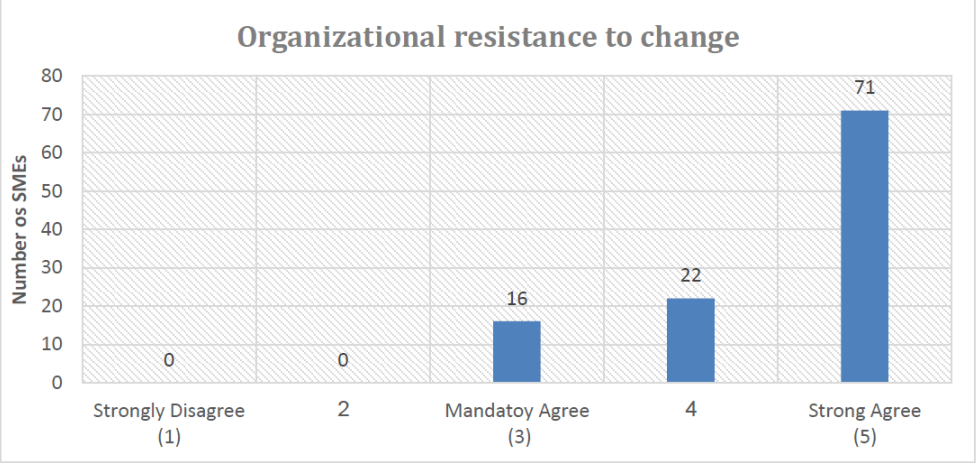


Figure 23. Results of the barrier: organizational resistance to change

- **Limited use of Internet banking and web portals by SMEs**

The mean score of this barrier is ((1*0)+(2*9)+(3*80)+(4*12)+(5*8))/109=3.174, which means that the limited use of internet banking and web portals by SMEs is a barrier affecting our local market, as shown in Figure 24. This is because there are so many SMEs that even those that are growing are still using traditional ways of banking.

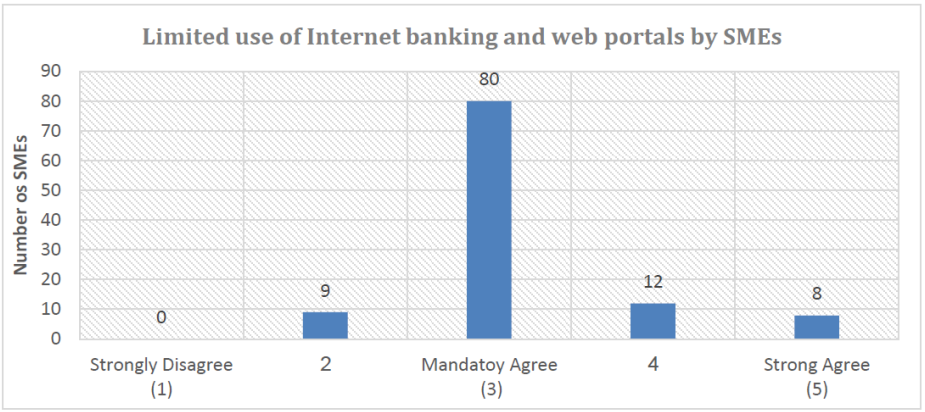


Figure 24. Results of the barrier: limited use of Internet banking portals by SMEs

3.7. Legal and Regulatory Barriers

This group of barriers consists of the following:

- Absence of legal and regulatory systems
- No simple procedures and guidelines
- Lack of e-commerce standards
- Lack of e-trading legislations

As with the analysis above, each of these barriers will be discussed separately.

- **Absence of legal and regulatory systems**

This barrier concerns the legal and regularity systems existing or the absence thereof, which is different from the discussion of the changes in and relevance of such systems included as a barrier in the political group. The mean score of this barrier is ((1*77)+(2*14)+(3*15)+(4*3)+(5*0))/109=1.486, which means that this it has no effect at

all on the decision to adopt e-business. This is obvious: as discussed above, the government has already introduced improved rules and regulations in terms of e-businesses systems. The results of this barrier are shown in Figure 25.

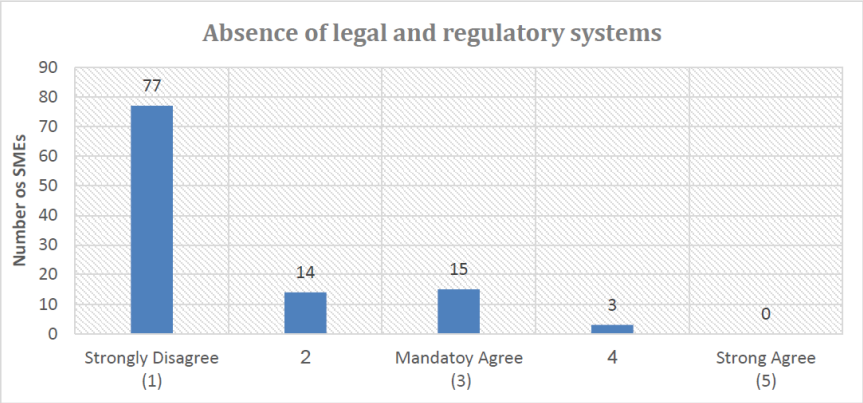


Figure 25. Results of the barrier: absence of legal and regulatory systems

- **No simple procedures and guidelines**

The mean score of this barrier is ((1*18)+(2*21)+(3*35)+(4*10)+(5*25))/109=3.028, which means that it affects the decision to adopt e-business to an extent, as shown in Figure 26. This can be explained by the fact that the procedures and guidelines either are not well known by SMEs or are difficult to apply or to understand in our local market.

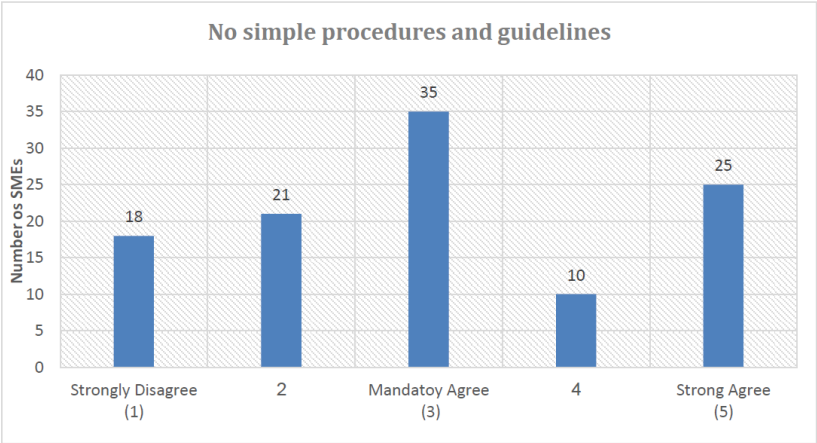
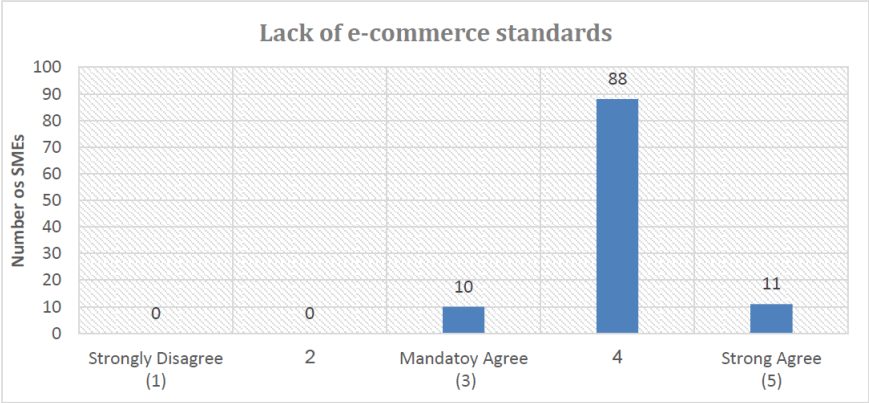


Figure 26. Results of the barrier: no simple procedures and guidelines

- **Lack of e-commerce standards**

The mean score of this barrier is ((1*0)+(2*0)+(3*10)+(4*88)+(5*11))/109=4.009, which means that it has a strong effect on the decision to adopt e-business, as shown in Figure 27. This is explained by the lack of existing standards that SMEs should know and follow in the process of transforming from traditional businesses to e-businesses.



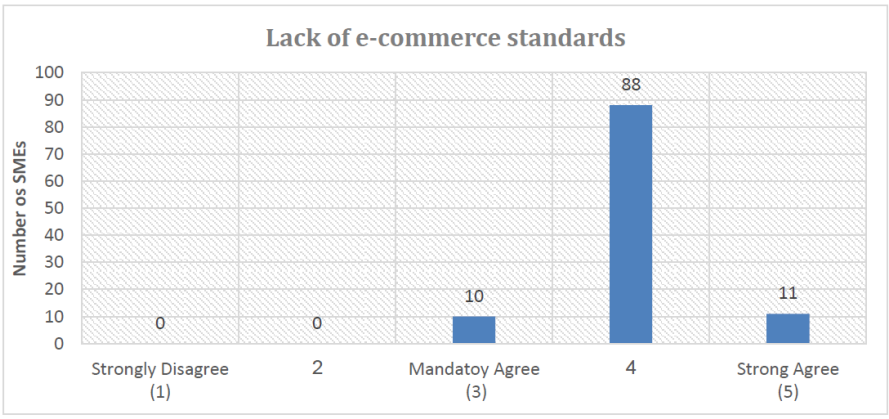


Figure 27. Results of the barrier: lack of e-commerce standards

- **Lack of e-trading legislations**

This barrier is basically similar to that discussed in the political barrier group regarding the e-commerce legal environment, but it is different in terms of being specifically addressed from the regularity point of view. In other words, there are clear and simple rules and laws for e-trading between all members of a supply chain. The mean score of this barrier is ((1*18)+(2*16)+(3*62)+(4*8)+(5*5))/109=2.668, meaning that it has a low effect on e-business adoption, which is basically similar to the barrier in the political group. It is shown in Figure 28.

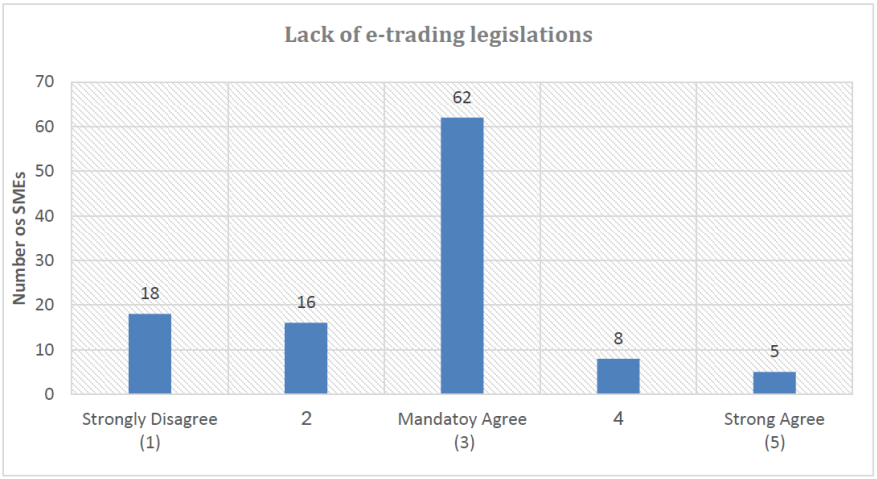


Figure 28. Results of the barrier: lsack of e-trading legislations

3.8 Ranking of All Groups

From Table 7, we summarize the results of the groups, which are ranked by the average of the mean scores of the barriers in each group from highest to lowest:

Table 7. Ranking of barrier groups

Rank	Barriers Group	Group Rating
1	Organizational Barriers	4.06
2	Technical Barriers	4.05
3	Economic Barriers	3.98
4	Legal and Regulatory Barriers	2.80
5	Social and Cultural Barriers	2.41
6	Political Barriers	2.40

It is clear that organizational barriers, technical barriers and economic barriers are at the top of the list of barrier groups, and for this reason, we will focus on them in future work. In contrast, legal, social and political barriers are the least significant and can be neglected.

3.9 Summary of All the Barriers and Their Results

Table 8 summarizes the results for all of the barriers:

Table 8. Summery of all Results

	Barriers Group	#	Barrier name	Number of participants Answers*					Results		
				1	2	3	4	5	Total	Rating Mean	Group Rating
	Social & Culture Barriers	1	Lack of popularity for online marketing and sales	30	45	10	15	9	109	2.339	2.41
		2	Lack of awareness of e-commerce benefits	43	20	20	10	16	109	2.413	
		3	Lack of external pressure from suppliers and customers	23	10	40	20	16	109	2.963	
		4	Linguistic barriers	39	46	19	3	2	109	1.927	
	Technical Barriers	5	Lack of Internet security	0	0	16	38	55	109	4.358	4.05
		6	E-commerce infrastructure	0	0	24	55	30	109	4.055	
		7	lack of qualified staff	0	0	19	10	80	109	4.560	
		8	Inadequate quality and speed of lines	15	12	40	15	27	109	3.248	
		9	Increase innovations and new technologies	5	10	14	30	50	109	4.009	
	Economical Barriers	10	Lack of financial infrastructure	16	27	8	18	40	109	3.358	3.98
		11	Unclear benefits from e-commerce adoption	5	4	2	71	27	109	4.018	
		12	Cost too high	1	1	3	40	64	109	4.514	
		13	Competitive pressure	12	12	13	25	47	109	3.761	
		14	Lack of secure payment infrastructures	0	0	16	48	45	109	4.266	
	Political Barriers	15	Change in regulations with each Government	31	40	18	11	9	109	2.330	2.40
		16	Changes in government policy	32	49	18	7	3	109	2.083	
		17	Lack of an appropriate legal environment to apply e-commerce	20	17	61	6	5	109	2.624	
		18	Low level of readiness among government institutions	18	20	66	2	3	109	2.560	
	Organizational Barriers	19	Difficulty in changing the existing working procedures	0	0	10	27	72	109	4.569	4.06
		20	Lack of management support	1	2	25	48	33	109	4.009	
		21	Organizational resistance to change	0	0	16	22	71	109	4.505	
		22	Limited use of Internet banking and web portals by SMEs	0	9	80	12	8	109	3.174	
	Legal & Regulatory Barriers	23	Absence of legal and regulatory systems	77	14	15	3	0	109	1.486	2.80
		24	No simple procedures and guidelines	18	21	35	10	25	109	3.028	
		25	Lack of e-commerce standards	0	0	10	88	11	109	4.009	
		26	Lack of e-trading legislations	18	16	62	8	5	109	2.688	
	*: 1 (Strong disagree) ---> 3 (Mandatory agree) ---> 5 (Strong agree)										

4. Conclusion

This paper contributes to the development and deployment of e-business systems for SMEs in Saudi Arabia. It began by presenting the term e-business and distinguishing between e-business and e-commerce: whereas the term e-business implies upgrading the competitiveness of an organization by conveying imaginative data and innovative communications throughout an organization and extending outward to stakeholders and customers, e-commerce essentially refers to transactions of buying and selling over the Web. It incorporates transactions such as placing orders, making payments, and tracking shipped orders on the Web.

As a type of infrastructure, e-commerce is playing a major role in the development of e-business systems. Thus, the term SME (which refers to small and medium-sized enterprises) was introduced, and SMEs in Saudi Arabia were defined as all businesses with fewer than 200 workers, according to the Saudi Chamber of Commerce. Therefore, this research focused on e-business adoption by small and medium-sized enterprises in Saudi Arabia.

A study was carried out to determine the two main characteristics of SMEs in Saudi Arabia: the level of e-business adoption and the most significant limitations and barriers to this adoption. According to a survey of one hundred and nine SMEs in Saudi Arabia, 14% were found to depend only on e-mail for communication purposes, but 76% of Saudi SMEs were found to have been using websites to market their businesses, which is a great proportion. Six percent of Saudi SMEs already had e-commerce systems; thus, they can move directly to e-business systems, as done by the remaining 4% of Saudi SMEs that had completed fully integrating e-business systems throughout their supply chains. Based on this study, we conclude that only 10% of Saudi SMEs use the internet to interact with customers in terms of selling their products or services. Thus, this work focused on the remaining 90% that are not involved in e-commerce or e-business. The other objective of this research was to test the most popular barriers in the literature against Saudi SMEs to define the most significant barriers. The barriers were grouped into six groups: organizational barriers, technical barriers, economic barriers, legal and regulatory barriers, social and cultural barriers and political barriers. The results found that organizational, technical and economic barriers are the most significant. Therefore, when the model was under development, these three groups of barriers were used as criteria for choosing the best model.

5. Recommendations

Finally, two main recommendations are given to enhance future research and contributions: the model should be expanded to include fully integrated e-business system modelling and application, and research should be expanded to include larger and smaller organizations. Each of these recommendations will be discussed separately.

First, in this work, we addressed the model that best fit SMEs in Saudi Arabia. The main focus was to find the best way to start an e-commerce system as an infrastructure to transform from a traditional business into an e-business. Future research could go technically beyond e-commerce model building and focus on how to build fully integrated e-business systems through the supply chain. This is because when e-commerce is built, and businesses grow faster, there will be a strong need to adjust and align business processes with the e-commerce business environment. This means that back-office business processes will need to be synchronized with e-commerce demands. If they are not, then customers will very soon notice the poor alignment and adjustment: products will not arrive on time, emailed questions or requests will receive no responses, it will be impossible to track the status of orders, the speed of service will be poor, there will be problems with customer returns and discrepancies in deliveries, there will be no opportunities for personalization, the process of placing orders will be clumsy. Here, businesses should move to the integrative e-business level. The most critical variable for transforming into e-business is supply chain management. Successful supply chain management can be achieved with the assistance of e-business methodologies, which can guarantee far better coordination between the wholesalers and retailers of different items. Superior integration of the supply chain, from the source to the final delivery of the item, can be viably realized utilizing the e-business procedure.

Second, in this research, the main focus was on small and medium-sized enterprises. To facilitate the research, micro-enterprises with only one or two employees were excluded. Future research could include micro-enterprises and large organizations, giving a full picture of our entire market. Moreover, such research can compare business segments to provide a better understanding of their behaviours in terms of e-business adoption. Then, a specific e-business model could be designed for each of the business segments according to their different needs. This will enhance the contribution to the deployment of e-business across all businesses in Saudi Arabia.

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An Analysis of Quality Human Resource Management (HRM) Practices in Bangladesh Ready-Made Garments Sector

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Abstract
Bangladesh Ready-Made Garments (RMG) had grown significantly over the last decades in every term but unfortunately quality of locally produced goods is still an issue. According to BGMEA report (2014) RMG consists around 40% manufacturing as well as 50% of the total workforce and 78% of total export earnings generated from this sector. Most of the employees in RMG are women, around 90%, where 4.2 million people are working in this sector. However, the potential growth and prospect in the Bangladesh RMG sector is huge. And for using these opportunities it should focus on the proper implementation of HR policies to emphasis quality performance. In recent knowledge-based economic condition, human resource is the most crucial resource as organizational effectiveness and efficiency is largely depends on the utilization capacity of this resource, especially in the case of Ready-made Garments industry in Bangladesh. Yet, the realities for RMG organizations are that their people remain undervalued, under-trained, and underutilized. Due to improper HR practices, labor unrest rate in RMG is high, and the employee productivity rate is lower than its competitors. As RMG is the rising sector for further investment, now a day a much concern is needed to improve and sustain garments companies growth. Human Resource Management requires much more concern in the Bangladesh RMG sector. In this aspect, literature proved that HR practices didn't get much attention, which need to be measured and analyzed in the aspect of Bangladesh RMG sectors quality performance improvement as in RMG sector human resources is the main advantage for industrial growth and sustainable competitive advantage in business. So this study is required to lift up this expectation to fulfill this research gap

Keywords: Human Resource Management, Quality performance, Employee productivity, RMG

INTRODUCTION

In the case of ready-made garments manufacturer, Bangladesh position second in the world. Bangladesh contributed around 60% export contract with European buyers and the rest of the 40% with American buyers. In

terms of investors, local investors control most of the production and manufacturing garments companies, whereas foreign investors only control 5 %. However, this sector is the main source of income in the case of national economy in a condition where, according to the World Bank, "you either export or die" (Custers, 1997). Bangladesh Garments manufacturing industry is expanding at a rate of 20% per year (Johir, Saha, and Hassan, 2014). In the industrial sector, Bangladesh set the example of cheapest and low-cost use of human resources. At the same time, Bangladesh garments industry fully labor-intensive rather than technology-oriented as Bangladesh is the cheapest labor country, the average labor cost per hour is only $0.3 (Israfil, Seddiqe, & Basak, 2014). Here, noteworthy to mention that since 1985, the growth rate of Bangladesh RMG sector is remarkable because of few privileges and opportunities, such as MFA, Quota and GSP, etc. (Rahman, 2011; Ferdousi and Shabnam, 2013).

Actually, the future of this sector fully depends on the effective utilization of its workforce (Taib, Mohammed, Iteng, and Lazim, 2018). Though most of the workers in the RMG sector are female and young, where their average age limit is below 30 years (Mehedi, 2014). Bangladesh RMG sector should focus on proper implementation of HR policies to emphasis quality performance (Absar and Mahmood, 2014). As each organizations success and quality goal accomplishment is largely depends upon the capabilities of human resources (Budhwar and Debrah, 2011). In this regard according to Rahman (2012) against technological scenery, a thorough analysis of human resource management practices on manufacturing industries especially on Bangladesh RMG sector is very much needed. HRM practices are immensely necessary for the achievement and ensuring quality performance in the organization. Therefore, effective utilization of human researches is the prime challenge and pre-condition of organizational business success (Rahman, 2011). Issues raised in HRM practices in Bangladesh RMG sector are an attempt to improve competitiveness is still a debate both theoretically as well as empirical studies (Sharmin Akhter, 2014). So this study is required to lift up this expectation to fulfill this research gap.

Currently, Bangladesh RMG's are under tremendous pressure due to the free market economy, rapid technological development and continuous changes in customer demands (Barroso and Wilson, 1999; Siddiqi, 2007; Parul Akhter, 2015). These demands emphasize the need for high levels of overall system reliability that include the reliability of human resources, machines, equipment, material handling systems, other value-adding processes, and management functions throughout the manufacturing system (Ariful, 2008; Rahman, 2011; Yunus and Yamagata, 2012). Each organizations success and quality goal accomplishment is largely depending upon the capabilities of human resources (Budhwar & Debrah, 2011). Bangladesh RMG sector should focus on the proper implementation of HR policies to emphasis quality performance (Absar and Mahmood, 2014). Unfortunately, the RMG industry is labor-intensive despite technological developments harnessing the need for appropriate HRM practices to ensure the quality of output over the right duration at the right cost (BGMEA, 2015). These have, over the years, had an adverse effect on productivity, sustainable competitive advantage, and commitment, further affecting organizational performance, time, and cost. These prompt the need for this research, which aims at providing a tool, a procedural framework, to enhance HRM in various companies operating in Bangladesh via the development of appropriate policies that will ensure high organizational performance and sustainable competitive advantage (Joarder et al., 2010).

Therefore, the results of this research outcome will be beneficial for both theoretically and practically. The current study offers significant values for practitioners since it has considerable managerial significance. At the same time, this research will be significant in the Bangladesh garments sector by offering new insights into the various TQM as well as HRM functions. As well as the findings of this study will be useful to government and other organizations in Bangladesh that are currently implementing HRM practices, as well as those seeking to establish HRM practices within their systems with the aim of improving performance as well as gaining sustainable competitive advantage of their businesses (Chowdhury, Ahmed, and Yasmin, 2014).

LITERATURE REVIEW

Human Resource Management

According to Huselid (1995), "HRM practices can contribute to superior productivity by improving the quality of employees' work Life." At this point, according to Absar (2014), lack of appropriate HRM practices always

enhance turnover rate, decrease the productivity rate, and huge job dissatisfaction among employees through the effective implementation of HRM practices is helping to increase overall organizational performance and growth. Therefore, according to Holtom et al. (2005), a high turnover rate is a negative sign among the workforce, which affects employee work performance and productivity. High turnover always creates the gap of production as new skills needed to be developed as the skilled performer left, new skill development to fulfill the gap is always costly (Hughes and Bozionelos, 2007). Absar (2014) denoted that, "due to lack of proper HR policies and procedures, labour-intensive manufacturing firms are facing shortage of workers, and high job turnover in developing countries such as Bangladesh."

Therefore incompetency of HRM practices always affects the organizational competitiveness as workforce is the main factor of quality performance (Ahmed, 2013). Inappropriate manpower planning is considered the main significant considerable factors of human resources as well as workforce shortage as well as surplus, which reflect the reality about the inconsistency of HRM practices with companies' goals (Ichniowski et al., 1997; Rahman 2011). According to Absar (2014), "although human resource management practices are indispensable in enhancing organizational performance and competitive advantage but unfortunately an inadequate number of studies have been conducted in this area so far in the context of Bangladesh RMG sector." So, in this study, the research is conducted for the motive of fulfilling this research gap.

In this regard, according to Hossan, Rahman, and Rumana (2012), the growth rate of this sector is remarkable in Bangladesh, yet, realities of the RMG sector is that their people remain undervalued, under-trained and underutilized. So the potential growth and prospect in Bangladesh RMG sector is huge. And for using this opportunities it should focused on proper implementation of HR policies to emphasis quality performance (Weeratunga, 2003; Absar & Mahmood, 2014). Pfeffer (1994) introduced 16 HR practices which denote best practice. In context of Bangladesh ready-made garments industry, in this research we consider the following four HRM practices: recruitment and selection, job analysis, manpower planning, equal employment opportunity act (EEOA). The main focus of recruitment and selection process is the choosing the right person for the right position. According to Mládková (2005), "workers must be able and willing to cooperate and communicate and accept the way of sharing their knowledge (skills, abilities and experience) based on reciprocity, reputation and altruism." Schuler (1987) give emphasized in his study on more general, implicit and less formalised selection criteria are proposed by some authors. In Bangladesh ready-made garments, they don't follow any defined recruitment and selection policies which largely affect employees' turnover and competitiveness (Ahamed, 2013).

On the other hand, Geisler (2006) stated that, "manpower planning is the process – including forecasting, developing and controlling by which a firm ensures that it has- the right number of people, the right kind of people, at the right places, at the right time, doing work for which they are economically most useful". Manpower planning is associated with organizational optimum size of workforce, appropriate training design, compensation system design as well as the future vision of the workforce management which are highly recommended in case of TQM practices in Bangladesh RMG sector (Ahamed, 2013). According to Bansari (2010), "most garments factories in Bangladesh pay little attention to labour standards and labour rights, disallow trade union activities, unsafe working environment, and ineffective laws and discard fair labour practices, and compliance enforcement is limited and limited role of stakeholders." According to Ahamed, F. (2011), "there is a rising fear in Bangladesh that the readymade garments sector may face a decline in demand and social compliance in the RMG industry is a key requirement for most of the world's garments buyers which ensures labour rights, labour standards, fair labour practices and a Code of Conduct."

So for ensuring quality practices and gaining sustainability in RMG sector of Bangladesh much attention should be given to EEO approach to avoid labor unrest and lack of quality performance. Job analysis is required a huge impact on starting to implement any HR practices in organization (Sharmin, 2014). According to Cascio (1991) for evaluating the organizational performance effectively job analysis also associated with performance management and compensation, recognition and reward. Therefore, according to Dobbins et al. (1991), individual skills and competencies are focused in job analysis, which is needed for empowering employees, which is essentially significant in the case of Total Quality Management (TQM) implementation. Lastly, measuring job fitness is also a part of the job analysis process, which includes change management, job classification, creativity,

and job design, and job rotation (Shahin & Basak, 2014).In this research, job analysis requires more significant attention in the context of Bangladesh ready-made garments industry to gain sustainable competitive advantage for implementing TQM.

Therefore, according to Absar (2014) HRM practices were not given proper acknowledgements and preferences in aspect of Bangladesh RMG sector. So based on literature it is easily understandable that HR practices didn't get much attention which needs to be measured and analysis in the aspect of Bangladesh RMG sectors quality performance improvement as in RMG sector human resources is the main advantage for industrial growth and sustainability in business. So this study is required to lift up this expectation to fulfill this research gap. This study will also help the policy makers and government to formulate and implement the manpower policies as the Bangladesh RMG sector largely depends on workforce efficiency and proper utilization of inexpensive manpower.

BANGLADESH RGM SECTOR'S HRM CONDITION

The ready-made Garments Industry contributed a lot to the development of the Bangladesh economy. Bangladesh Garments manufacturing industry is expanding at a rate of 20% per year (Siddiqi, 2005; Johir, Saha, and Hassan, 2014), and around 76% of the export earnings are coming from RMG sector (BEPB, 2015). Currently, 4.2 million workers are working in this sector, where 4490 manufacturing units are in operation (BGMEA, 2015).

Table 1: Membership and employment

Years	No. of garments factories	Employment in million workers
1984-85	384	0.12
1985-86	594	0.20
1986-87	629	0.28
1987-88	685	0.31
1988-89	725	0.32
1989-90	759	0.34
1990-91	834	0.40
1991-92	1163	0.58
1992-93	1537	0.80
1993-94	1839	0.83
1994-95	2182	1.20
1995-96	2353	1.29
1996-97	2503	1.30
1997-98	2726	1.50
1998-99	2963	1.50
1999-00	3200	1.60
2000-01	3480	1.80
2001-02	3618	1.80
2002-03	3760	2.00
2003-04	3957	2.00
2004-05	4107	2.00
2005-06	4220	2.20
2006-07	4490	2.40
2007-08	4743	2.80
2008-09	4925	3.50
2009-10	5063	3.60
2010-11	5150	3.60
2011-12	5400	4.00
2012-13	5876	4.00
2013-14	4222	4.00
2014-15	4296	4.20

Source: BGMEA (2015)

Each organizations success and quality goal accomplishment is largely depends upon the capabilities of human resources (Budhwar & Debrah, 2011). Bangladesh RMG companies don't provide proper training to the employees as they focus on cost reduction most but training and skill development is essential for quality performance(Ahamed, 2013). That's why employee productivity rate comparatively low rather than competitors (Absar & Mahmood, 2014). Therefore, Ernst and Young (2007) stated that Bangladesh has the 7th largest work force i.e., 69 million of the world. Potential growth and prospect in Bangladesh RMG sector is huge. And for using this opportunities, it should focused on proper implementation of HR policies to emphasis quality performance (Weeratunga, 2003; Absar & Mahmood, 2014). In this regard, Mamun and Islam (2001) stated where they conducted research on RMG sector that the ready-made garments enterprises workers' productivity needs to be improved through proper HRM practices. According to Johir, Saha, and Hassan (2014), "to face challenges of globalization and the reasons for the low productivity of laborers are unsystematic recruitment and selection of workers, unavailability of training facilities, inadequate financial facilities, and low motivation level of workers."

The situation of Bangladesh RMG sector is critical as there are lack in practice of HRM practices, which causes lots of problems (Ahamed, 2011). Control of lower-level employees is usually done by line supervisors who are not an expert of employee management as the supervisors do not have proper training, nor knowledgeable about compliance acts neither familiar about HR rules and procedures. So most of the time, due to their inefficiency, employees are demotivated as well as dissatisfied, which reflects their quality performance (Rock, 2010). According to Parul Akhter (2015), most of the garments factories have no well-defined HR department. Actually, HR departments are fully concerned about the formulation and implementation of HR rules, regulation and practices as well as make sure employees will be motivated through these activities which are essential for the success in Bangladesh RMG sector. According to Rahman (2012, "working conditions in the RMG sector are poor and the factories often do not have HRM units and workers' rights are minimal." In this regard, Ahamed (2013) stated that the absence of an HR function in the RMG sector creates difficulties with workers. In Bangladesh, most of the RMG factories have automatic machinery. But unfortunately, coupled with workers lack of education, skills and technical knowledge, this can lead to accidents causing death or injury (BGMEA, 2015). Without appropriate HR policies in Bangladesh RMG sector as well as lack of HR unit in the organization, most of the garments employees are not aware and familiar about IR (Industrial Relations) rules and acts (Ahamed, 2011). In this study selection of RMG sector as research area is worthy for further research as there is a huge research gap.

The working environment in the RMG sector is deficient in various ways focused health and safety and the work environment (Akhter, 2015). As a result, workers often suffer disease and are injured or even killed. The HRM department ensures that employees' rights are not violated, and that the organization provides better working condition (Rahman, 2012). Mondy and Noe stated that safety is the act of protecting employees from injuries caused by work-related accidents and health as well as keeping employees free from physical or emotional illness". According to Ahamed, F. (2011) the absence of any HR functions in the RMG sector can be a factor in serious labor unrest. In this aspect, Bangladesh RMG sector accidents are quite common and without the practice of EEOA, employee didn't get proper care which creates employees demotivation as well as labor unrest which largely affect quality performance (BGMEA, 2014).

However, usually no HR unit is found in most of the small companies in Bangladesh RMG sector where the number of members of the organization is less than 100 (Sharmin, 2014). In Bangladesh RMG sector, establishment of HR departments has the potential to facilitate productivity and sustainability (Bansari, N., 2010; Ahamed, F., 2011) Due to improper HRM practices, Bangladesh ready-made garments industry sustainability, as well as competitiveness, largely hampered (Bansari, N., 2010; Ahamed, F., 2011). So there is a research gap to implement HR practices in Bangladesh RMG sector.

Several researchers conducted studies on working condition in Bangladesh RMG, which are essential for developing the EEO and compliance. In this regard, according to Ahamed F. (2011), "in fact working conditions in the RMG sector are below standard and do not meet the ILO standards." Ahamed F. (2011) also stated that, "labour standards and rights are commonly ignored in the RMG factories in Bangladesh: poor practices include the absence of trade unions, informal recruitment, and irregular payment, sudden termination, wage discrimination,

excessive work, and abusing child labour." So lots of accidents happened previously as for example, "Rana Plaza" incident. At the same time, employee, health and facilities are serious issues in the garments sector because of absence in the implementation of labor laws and appropriate HR practices.

On the other hand, in RMG sector employee recruitment is informal they don't provide any appoint letter as formal legal documents and for this reason employee could not able to claim compensation against any misfortune happened with them. In this regard according to Bansari (2010), "in case of Bangladesh RMG companies, employees are vulnerable to losing their jobs at any time and have fear of losing their jobs and lack of alternative job opportunities compel workers to continue in unsatisfactory employment." Kumar (2006) stated that, "garments workers are concerned with long working hours or double consecutive shifts, personally unsafe work environment, poor working conditions, wage and gender discrimination and employers treat the RMG workers as slaves, exploiting workers to increase their profit margins and keep their industry competitive in the face of increasing international competition".

However, Alam (2004) pointed out that lots of problems remain in the Bangladesh RMG sector, such as suppressed work schedule, no break time, inappropriate overtime procedure, physical harassment, etc. though management are not aware about the appropriate policy and implementation of HR rules and practices. According to Majumder P (1998), "work areas are often overcrowded with limited workspaces, causing occupational hazards such as musculoskeletal disorders and contagious diseases." Bangladesh RMG owners are under pressure to oblige all the code of conduct for sustaining their business operation. That's why they are more concerned about this research study, which will help them to build-up a proper quality culture with the help of effective HRM practices.

In this regard, according to Ahamed (2011), "workers often try to complement their low wages by overtime, which in effect is mandatory practice in Bangladesh RMG factories." But unfortunately, most of the garments workers are illiterate they don't have appropriate knowledge about quality work environment as well as labor rights. The wage rates of RMG sector compare to other competitor countries are given below:

Table 2: Inter-country comparative average hourly wage in the RMG industry

No.	Country	Wages($)/hour
1	Germany	25.00
2	USA	16.00
3	Turkey	7.3
4	South Korea	5.00
5	Mexico	2.40
6	Thailand	1.75
7	Poland	1.40
8	Vietnam	0.85
9	China	0.5
10	Pakistan	0.41
11	Indonesia	0.40
12	India	0.35
13	Cambodia	0.32
14	Nepal	0.30
15	Bangladesh	0.15

Source: Ahmed F., (2011)

An interesting finding is that due to excessive use of women workers, the wage rate is ultimately low (Ahamed, 2011). Another considerable factor is there is abandon supply of human resources who are able to work in Bangladesh RMG sector. So, because of labor availability the wages rate is comparatively low. The offered the cheapest wages in the world. Muhammad (2012) stated that in reality, garments worker are not entitled to any fringe benefits, including accommodation allowances, health care, emergency funds, or transportation. In this regard, according to ILO and BGMEA (2014) glass ceiling is another considerable problem remains in Bangladesh

RMG sector. At the same time discriminated wage rate among male and female employees are huge. The following table shows the gender discriminated wages rate.

Table 3: Gender differentials in wages in Bangladesh RMG sector

Categories	Male wages USD $/per month	Female wages USD $/per month
Operator	28.65	19.53
Cutting	50.02	15.00
Ironer	24.08	14.06
Sewing helper	15.25	9.69
Cutting helper	19.22	10.64
Finishing helper	15.37	13.00
Folder	19.42	14.71

Source: Absar (2010)

In this regard, Garments worker often change their jobs because of wage arrears, lay-offs, irregular payment, excessive working hours, forced labor, ill-health or harassment from bosses and their security guards (DWP, 2014). Bangladesh RMG sectors HRM implementation and practices play vital role for achieving employees' job satisfaction, better productivity, employee efficiency and skill development. It is another area where Bangladesh severely lags behind most of its competitors (Richthofen, 2012). Therefore, on the basis of the above literature, this research is much needed as there is a huge research gap.

DISCUSSION

Based on above discussion, for ensuring the performance development and sustainability of Bangladesh RMG sector effective implementation of HRM practices should be assured. Khan (2010) stated that, "HRM is the essential factor for sustainable competitive advantage and success of any organization." According to Schuler (1990), "the practice of HRM enables firm to achieve resource optimization and continuous improvement in production." At the same time lack of appropriate HR always create high turnover rate, increases absenteeism as well as reduces profit (Johir, Saha, & Hassan, 2014). In this regard, Marchington and Wilkinson (2008) stated that, "HRM is a distinctive approach of employee management to achieve competitive advantage through job satisfaction and commitment." Several criteria works behind the relationship between HRM practices and sustainable competitive advantage, which need to be further tested (Batt, 2002; Ahamed, 2013).

According to Batt (2002), "if the firm invests on human capital it may increase the worker's productivity." Appelbaum et al. (2000) stated that, "job enlargement and increasing autonomy of workers will decrease the amount of wastage and the inefficiency rate in production, as the firm takes the advantage of unused skills from non-managerial workers." So through job satisfaction, HRM practices can ensure employee motivation, which will directly relate with quality performance of individual as well as organization. In this regard, Ichniowski et al. (1997) denoted that, "good HRM practices increase the motivation of workers due to increased job satisfaction." Job satisfaction also will increase quality performance. MacDuffie (1995) mentioned, "good HRM policies reduce the rate of job turnover that consequently trims downs the cost of recruitment and selection, and increases the benefits of investments in human capital." At the same time, Ichniowski et al. (1997) stated, "higher employee motivation will raise the tendency among the workers to do a better job, and it will also increase their commitment towards the organization."

On the basis of the above discussion, this research got the potentiality to vary the statement of whether human resources practices have a positive relationship with Bangladesh RMG sector to gain sustainable competitive advantage or not as there is a research gap for it.

CONCLUSION AND FURTHER RESEARCH

Though the growth rate of Bangladesh RMG sector is immensely high but unfortunately, from the starting of the

implementation practices of HRM did not receive its due and proper attention. This research will be very much beneficial for both owners as well as policy and decision-makers. On the basis of this research, some recommendations are: first, always maintain and follow proper rules and documentation for the employment of employees. Second, establish justified wages and compensation policy, not the discriminated payment. Third, every employee should provide appropriate training opportunities. Fourth, follow and maintain all HRM practices according to Bangladesh Labor Law 2006. Fifth, the working hours and overtime policy should be maintained and justified legally and ethically. Sixth, the trade unions and collective bargaining option should be opened for the employees. Seventh, fairly and ethically practice "owner-labor-government agreement of 22 & 23rd May, 2006". Eighth, wages and compensation should be adjusted with incremental payment as well as inflation and work-life balance. Ninth, maintained appropriate and proper "safety and security law" of workplace safety. Tenth, ensure quality culture and reduce work stress and misbehave towards workforce. Eleventh, do not recruit child labor or minor which is a regular practice in Bangladesh RMG sector. Twelfth, maintained, follow and updated "BGMEA & Government rules and regulation."

The current study offers significant values for practitioners since it has considerable managerial significance. At the same time, this research will be significant in the Bangladesh garments sector by offering new insights into the various HRM functions. These initiatives will cover the latest research gap on the implementation of HRM practices in the literature. Additionally, it is believed that this study can be replicated in other context such as other product and service industries in Bangladesh. Therefore, this study will assist and explore for future research prosperities and opportunities in HRM area of research. Overall, this research can help to build up remarkable understanding of practicing HRM in Bangladesh RMG sector as well as contribute significantly in building the scientific knowledge in the subject of the research area.

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Oil Prices and Sectoral Stock Prices with Mining Sector Stock Prices in the Exporting Countries as well as Oil Importers

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Abstract
This paper uses the panel vector autoregressive (PVAR) to find out the dynamic relationship between oil prices, inflation, exchange rates, industrial production and the stock prices of 18 mining sector companies in Indonesia. The data covers the period of January, 2009 to December, 2016. In the long run, oil price fluctuations do not coincide with sector stock prices. In the short term, oil prices are not directly related to the stock prices of the mining sector. The price of oil is co-integrated with the exchange rate and the consumer price index, while in the short term the price of oil is reciprocal with the exchange rate, while the value is reciprocally related to the consumer price index. Heterogeneous coefficient relations show the exchange rate to be a central point for the relationship of oil prices and the consumer price index in influencing the share price of the mining sector. This finding becomes an important consideration for investors to calculate exchange rate fluctuations in developing their investment.

Keywords: Oil Prices, Industrial Production, PVAR

INTRODUCTION

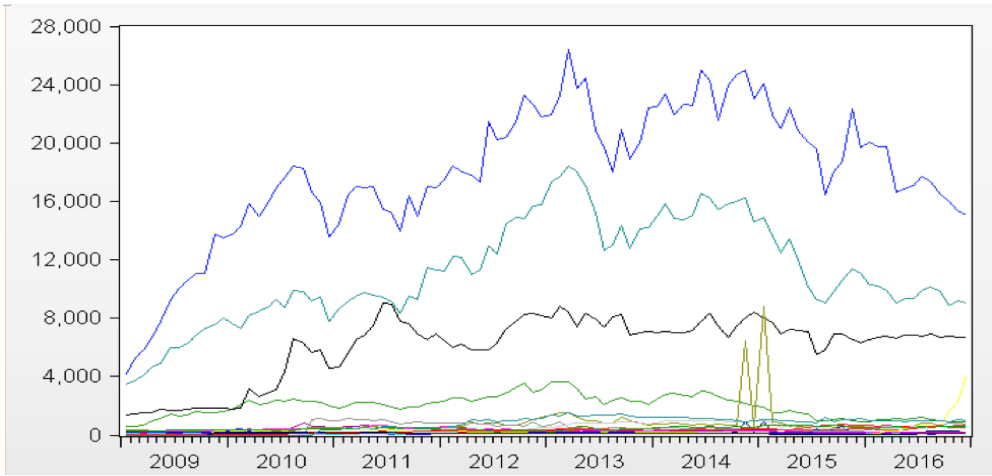
The mining sector is a sector that plays a role in providing and determining the energy needs of Indonesia. Increased industrial growth triggers an increase in energy consumption so that the use of energy derived from petroleum cannot be met from the production capacity of the mining sector in Indonesia. To fulfill this, the government must import 20-30% from abroad. Changes in oil prices are reaching the highest point.

Issues of the global world with continuous heterogeneity is very interesting for policymakers to understand and monitor national and international developments. Policy evaluation must be conducted interdependently of all sectors, markets, and economic problems nationally. The relationship between the share price of the sector needs to be seen in the long term and short term. Problems, in the long run, need to be seen the relationship and its influence in the short term, so that investors can reduce risk in the long run. As for the government, it is very important in taking short-term policies so that they do not interfere with the economy in the long run.

As explained by the theory and research results above, previous research has tried to explain the relationship between oil prices and macroeconomic variables, from various studies the data used varies. From developing countries to developed countries. both as an importer of pure oil and as an oil exporter. The results of the study also varied, then the study turned to the relationship between oil prices and the stock market, stock prices. Very little research has been done on the sectoral share prices of one country. From all of the above studies have not produced consistent conclusions.

The movement of share prices in the mining sector in the period 2009 to December 2016 can be seen from Figure 1

Figure 1.3: Mining Sector Company Stock Price (Rupiah) 2009 - 2016



Source: processed from data sources

(Hamilton, 1983) and followed by (Mork, 1989), (Ferderer, 1996), (Cologni and Manera, 2009), are researchers who look at the impact of oil prices from the supply side, can it was concluded that the increase in oil prices had a negative impact and the decline in oil prices had a positive impact on economic growth in developing and developed countries.

The relationship of oil prices with the stock market was initiated reseach by (Jones and Kaul, 1996), (Huang, Masulis and Stoll, 1996), (Sadorsky, 1999), (You *et al.*, 2017), (Silvapulle *et al.*, 2017), (Koh, 2017), (U, 2001), (Park and Ronald A. Ratti, 2008) oil prices harmed the stock market, industrial production, and employment. But (Gjerde and Sættem, 1999), (Sadorsky, 2001), (El-Sharif *et al.*, 2005), (Basher and Sadorsky, 2006), (El-Sharif *et al.*, 2005), (You *et al.*, 2017), (Journal *et al.*, 2010), (Li, Zhu and Yu, 2012), (Le and Chang, 2015) found that changes in oil prices had a positive impact on the stock market.

The impact of oil prices for sectoral stocks is still very few researchers who do so, including (Luo and Qin, 2017), Cong, Wei and Fan 2014, (Li, Zhu and Yu, 2012), (Keane and Prasad, 2017), with the panel model of the relationship of oil prices with long-term sectoral shares have a positive impact.

Previous research has varied greatly, from the different methods used such as time series, non-linear vector autoregression, oil prices as exogenous, oil prices as endogenous, oil prices from the supply side, oil prices from the demand side. Research objects also vary from changes in oil prices in developed countries, developing countries, oil-importing countries, and exporting countries.

Research that looks at the relationship of oil prices with sectoral shares is very little and studies that look at the relationship of oil prices and sectoral shares in countries that are exporters and at the same time as importers have not examined PVAR. While Indonesia in the category of developing countries, also has a uniqueness, where it was once the largest oil exporter and changed countries as well as being an oil importer.

LITERATURE REVIEW

The Indonesian Capital Market since it was formalized again in 1997, has developed quite rapidly, where the number of listed stocks has increased and can be seen from the data in 2004 the number of listed companies listed on the exchange reached 417 issuers (Dan, Emiten and Perusahaan, 2004). While (Sharpe *et al.*, 2002) said: *"Capital market is the market in which longer-term debt (original maturity of one year or greater) and equity instruments are traded*." According to Tandelilin (2010), a capital market is a meeting place for securities sellers and buyers, which facilitates those who have funds with those who need funds. Thus, it can be interpreted that the capital market is a market for buying and selling securities, with a period of shares and bonds that have a life over one year.

The operational variable used is 1). I_P oil is the price of Indonesian oil on the world market which refers to Platts, RIM, and RIM. 2). I_hk is a change in the purchase price for goods and services from public consumption at the consumer level. 3). I_Er is the value of the rupiah against the dollar with the base year 2009. 4). I_p is an index of the mining sector with the base year 2009. 5). I_Pclose is the share price of the mining sector with the base year 2009 of the closing stock price.

Hamilton, as a forerunner of how the impact of oil prices on macroeconomics, was found for importing countries. The shock of oil prices was the cause of the global economic slowdown supported by research by (Gisser and Goodwin, 2016). The relationship between oil prices and the stock market was carried out by (Sadorsky, 1999), (Gjerde and Sættem, 1999), (Park and Ronald A Ratti, 2008) found that oil price fluctuations on the stock market had a significant impact, because oil as an energy input as fuel to support the industry would affect production costs.

RESEARCH METHOD

To describe the dynamic behavior of individuals and between variables using the Holt-Eakin 1988 method where the PVAR estimator concept with data i = 1, 2, 3 .... from individuals N. The time of each individual is expressed by t = 1, 2, 3 ... T research. If the variables used are y_{it}, z_{it}, and Pit from the matrix W, the PVAR model is stated as follows :

$$W_{it} = \beta o + \sum_{j=1}^{m+1} \beta itWit_{\,it-1} + \varepsilon_{it} \quad \ldots\ldots (1)$$

W is the equation as follows:

$$y_{it} = \beta_{17} + \beta_{18}\, y_{it-1} + \beta_{19}\, y_{it-1} + \beta_{20}\, y_{it-1} + \alpha_{16} P_{it-1} + + \varepsilon_{y,it} \quad \ldots\ldots (2)$$

$$y_{it} = \begin{bmatrix} Y_{1,m+2} \\ \cdots\cdots \\ Y_{N,m+2} \\ Y_{1,m+3} \\ \cdots\cdots \\ Y_{N,m+3} \\ \cdots\cdots \end{bmatrix} \qquad y_{it-1} = \begin{bmatrix} Y_{1,m+1} \\ \cdots\cdots \\ Y_{N,m+1} \\ Y_{1,m+2} \\ \cdots\cdots \\ Y_{N,m+3} \\ \cdots\cdots \end{bmatrix} \quad \ldots\ldots (3)$$

$$\begin{matrix} Y_{1,r} \\ Y_{N,T} \end{matrix} \quad \{T-(m+2)+1\}N \times 1 \qquad \begin{matrix} Y_{1,r-1} \\ Y_{N,T} \end{matrix} \quad \{T-(m+2)+1\}N \times 1$$

Research on Panel Data Cointegration Test Long-Term Relationship

Cointegration test was first introduced by (Engle, Granger and Mar, 2007), which stated two or more linear

variables that were not stationary to be stationary variables. If between variables cointegrate, it can be interpreted that two or more variables move together between variables in achieving balance in the long run. Furthermore, (Johansen, 1988) developed this cointegration technique, and in (Johansen and Juselius, 1990), then perfected this cointegration technique. Cointegration technique becomes the solution if there is an un-stationarity in the data *time series.*

Pedroni Cointegration test method uses a hypothesis to express the initial hypothesis and an alternative hypothesis as follows:

Ho: ⟩i = 1 applies to all i
H1: ⟩i <1 applies to all I in the panel dimensions
H1: (⟩i = ⟩) <1 applies for all i inter-dimensional statistical tests

If the cointegration statistical test results are obtained, the probability value is less than 5%, then rejecting Ho which can state that there is cointegration in the long run, the existence of cointegration can be interpreted that the variables used to move together in the long run to reach the point of balance.

Short-term Relationships (*Granger Causality Pairwise*)

Causality *granger* is a test conducted to determine the relationship in the short term. Causality relationship between variables, there can be no one-way, two-way relationship or no relationship at all of the variables studied.

Granger causality test uses the null hypothesis, which states the variables tested together, otherwise, do not have a causality relationship.

Table 2: Relationships of Pairwise Granger Causality Between Directional Variables

Causality	(X → Y, Y → X)
Bidirectional Causality	X ⇄ Y
No causality	-

Source: processed from various sources

FINDINGS AND DISCUSSION

Root Unit Test Results for the Im, Pesaran and Shin and Fisher Method in the Mining Sector The Results of the unit panel root test of the Fisher method in the manufacturing sector are known to the statistical value of the ADF - Fisher Chi-square test of 495.12 having a probability at a significance level of 1 %. For the results of the ADF - Choi Z-stat test results of -18.58 have a probability at a significance level of 1%. Thus, the null unit panel root hypothesis can be rejected, meaning that panel data on all mining sector variables are stationary at the level.

Table 4.1: Conclusion of Panel Unit Root Test Results from Mining Sector

Mining Sector	
Variable/ Method Test	Panel Root Unit Results
Im, Pesaran and Shin Fisher	Stationary Level Stationary Level

Source Source: Data processed Outputs Outputs

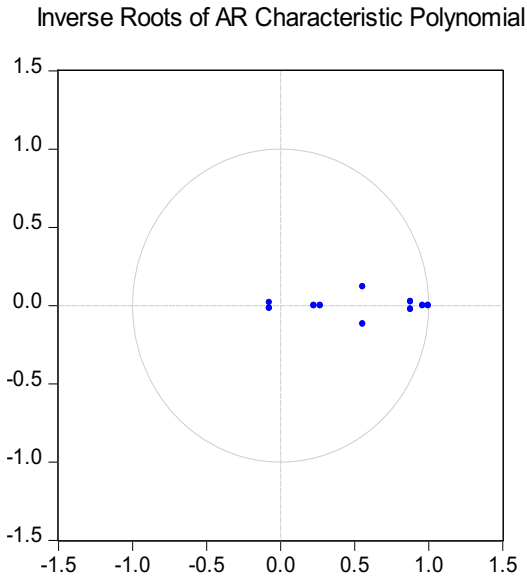
Results of Pedroni Cointegration Tests in the Mining Sector

Panel cointegration test is performed to determine the long-term relationship between the variables studied. If there is cointegration it can be interpreted that there are similarities in movement and achieving the long-term balance between the variables studied.

Panel unit root test results showed no more than one modulus or root value.

Table 1: Mining Sector Model Stability Test Results

Roots of Characteristic Polynomial Mining	
Endogenous variables: I_PCLOSE	
I_Poil I_HK I_P I_Er	
Exogenous variables: C	
Lag specification: 1 2	
Root	Modulus
0.997358	0.997358
0.961397	0.961397
0.879127 - 0.024551i	0.879469
0.879127 + 0.024551i	0.879469
0.556954 - 0.119320i	0.569592
0.556954 + 0.119320i	0.569592
0.268903	0.268903
0.225314	0.225314
-0.074898 - 0.018546i	0.077160
-0.074898 + 0.018546i	0.077160
No root lies outside the unit circle.	
VAR satisfies the stability condition.	



Source: Data processed output results

The first part of the group in dimensions is the static test *Panel v-Statistic, Panel rho-Statistic, PP-Statistic Panel, and ADF-Statistic Panel.* The first four statistical tests are based on the collection of residuals along with the panel test (in dimensions) that allows heterogeneity between manufacturing sector variables taking into account the time factor.

The second part of the group in the dimensions is the *rho-Statistic Group, the PP-Statistic,* and the *Group ADF-Statistic Group.* These three statistical tests are based on the incorporation of residues throughout the group (between dimensions) panel test. In this case, it allows parameters for heterogeneity in all variables used.

The statistical hypothesis of Pedroni cointegration test in the mining sector is as follows:

Ho: there is no cointegration

H1: there is cointegration

The results of the Pedroni panel test results in the mining sector can be seen in Table 4.9 below.

Table 4.2: Pedroni Cointegration Test Results in the Mining Sector

Sector (I_Pclose, I_Er, I_hk, I_P, I_Poil)			
in the Dimensions of the			
Group	Statistics	Prob	Remark
Panel v-Statistic	5.33	***	Co-integration
Panel rho-Statistic	-14.49	***	Co -integration
PP-Statistic Panel	-16.21	***	Co-integration
ADF-Statistic Panel	-6.29	***	Co-integration
Between Dimensions of			
Group	Statistics	Prob.	Remark
Group rho-Statistic	-12.63	***	Co-integration
Group PP-Statistic	-13.49	***	Co-integration
Group ADF-Statistic	-6.34	***	Co-integration

Note: *** significant 1%, ** significant 5 %, significant 10%

The two groups test results on the mining sector mentioned above, reject the null hypothesis which states that there is no cointegration to alternatives, which states that the general autoregression coefficient (in dimensions) and the

individual autoregression coefficient (between dimensions). By rejecting the null hypothesis, it can be interpreted together with all the variables in the long run in the mining sector. Thus together, all variables in the sector in the mining sector go hand in hand in achieving balance long-term.

PVAR Test Results from Mining Sector Test Results Common

1. Effect of Short-Term Relationship Test **Causality Coefficient** results can be seen in the following table:

Table 4.6: Influence of PVAR Short-Term Relationships Based on Ordinary coefficients of the Mining

Sector Mining Sector	Causality	t-Statistic	Prob	Test Results PVAR
I_Er - I_Hk	8.18 ***	77,845	0,000	(+) Significant
I_Poil - I_P	9.08 ***	-2.897	0.003	(-) Significant
I_Hk - I_Pclose	8.78 ***	-4.579	0.000	(-) Significant

Source: Data processed Results of output

2. Effect of Short-Term Relationship in the Mining Sector Test results in Dumitrescu-Hurlin Relations. Causality relationships found based on the Dumitrescu-Hurlin test, then tested on the PVAR model, to determine the effect of each variable that has been known to have a causality relationship. The results can be seen in the following table.

Table 4.7: Test Results Short-term Relationship PVAR

	Causality			**Test Results PVAR**	
Mining Sector	**W-Stat**	**Zbar-Stat**	**Prob**	**t-stat**	**Findings**
I_Er- I_HK	0914	-2228	**	77 845 ***	(+) Significant
I_HK - I_Er	28 657	52 410	***	64 632***	(+) Significant
I_Er - I_Poil	7,891	11,511	***	-22,555 ***	(-) Significant
I_Poil - I_Er	7,083	9,920	***	-30,112 ***	(+) Significant
I_HK - I_Poil	6,605	8,979	**** **	24,806***	(+) Significant
I_Poil - I_P	1,024	-2,011	**	-2,897 ***	(-) Significant
I_Er - I_P	10,871	17,381	***	22,727 ***	(+) Significant

Note: **Ho** = does not homogeneously cause

Estimation of an impulse response that shows the response of another shock variable, up to several periods after the shock shows that the movement approaches the balance point and returns to the previous balance, where the impact of a shock on other variables will disappear longer and is not permanent on that variable. Estimation using assumptions, each innovation variable does not correlate with one another. So the effect of a shock occurs is straightforward.

CONCLUSION

In long-term stock prices are co-integrated with oil prices, meaning that oil prices reach a price balance in the long run following stock price movements. But on the contrary, the price of oil does not coincide with stock prices in the long run. In the long run, oil prices will co-operate with the production index in the mining sector. Whereas in the manufacturing sector oil prices transmit price movements through the exchange rate and the consumer price index, which in turn exchange rates affect each other in macroeconomic variables, but do not affect the equilibrium prices of the two sectors' shares in the long run. Next oil prices go hand in hand in achieving a balance in the long run with the exchange rate. The weakening of the exchange rate, in the long run, will be followed by a decline in share prices in the mining and manufacturing sectors. Thus the relationship of stock prices with oil prices, in the long run, can be ignored, so investors in these two sectors need not worry about their investments in the long run despite oil price fluctuations.

Stock prices with oil prices in the short term are also not related, and vice versa. Stock prices in the short term with the exchange rate in the mining sector there is no relationship. Furthermore, oil prices in the short term are unidirectional with the production index. While oil prices are reciprocally related to exchange rates, in achieving price equilibrium in the mining sector. Whereas in the manufacturing sector oil prices are only related to the exchange rate with the consumer price index. On the other hand, it was also found that the reciprocal relationship between the exchange rate with the consumer price index in the mining sector. The exchange rate against the production index is found to be mutually interrelated in the short run. The important thing for investors, for their decision making, is that the results of this study show that in the short term, oil prices do not have a direct relationship to stock prices.

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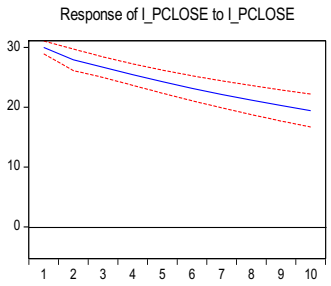
Appendix

Response to Generalized One S.D. Innovations ± 2 S.E.



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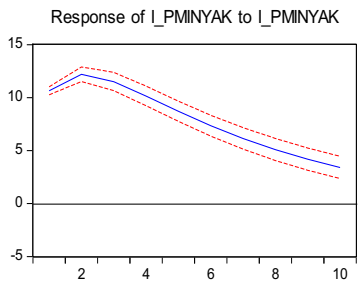

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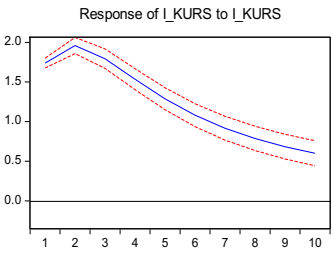

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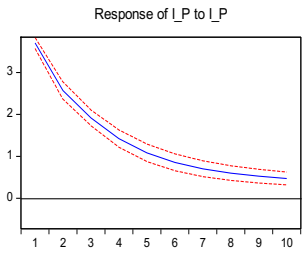

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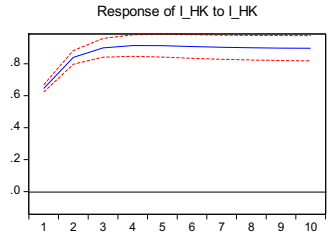

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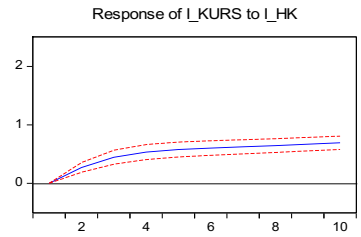

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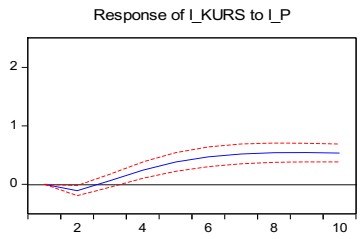

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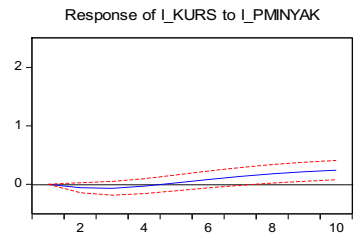

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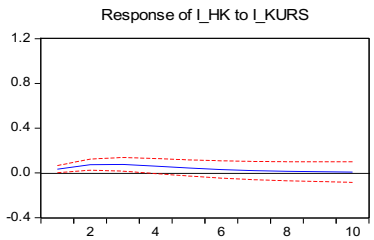

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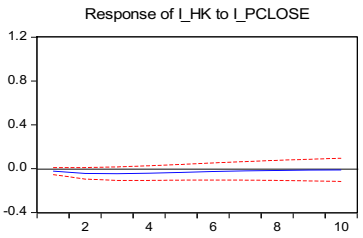

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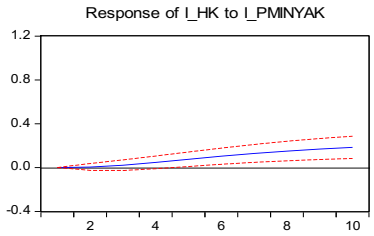

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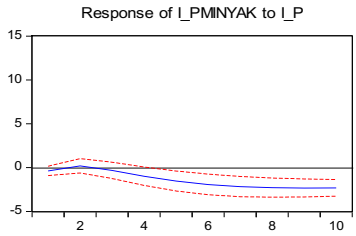

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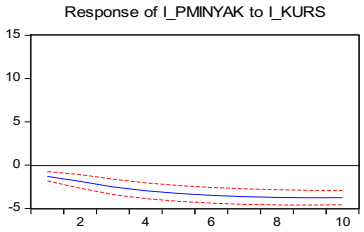

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Brand Equity and Service Innovation in Mexican Small Firms

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Abstract
Brand equity and service innovation are two marketing activities that have a vested interest for researchers, scholars and professionals not only because they should be part of the business strategies of any company but also because both constructs produce more and better competitive advantages especially in small service enterprises. Nonetheless, there are relatively few published investigations in the current marketing literature that have analyzed these constructs together. There are even fewer empirical papers focused on small service organizations even when this type of companies are the most common in developing countries as well as those with emerging economies, as it is the case of Mexico. Thus, the main objective of this empirical research is the analysis and discussion of the effects of service innovation in the brand equity of small firms by using a sample of 300 small enterprises and by implementing a model of structural equations that allows a deeper understanding of the current relation between service innovation and brand equity. The results obtained show that service innovation has a positive and significant effect in the level of brand equity of small firms.

Keywords: Brand, Brand Equity, Innovation, Service Innovation, Small Firms

1. Introduction

Brand management has become one of the most important areas of marketing activities of enterprises in the second decade of this century and mostly when organizations try to transmit messages of intangible services (Seyedjavadin *et al.*, 2010), about innovation services (Atashfaraz & Sadr, 2016). Consequently, one of the most important concepts of marketing activities that has been analyzed and discussed by several researchers, scholars and professionals in the field of marketing is brand equity. This is not only because of the strategic role that the decision making of purchases or the purchase intention of consumers has but also because of the creation of competitive advantages.

Similarly, Aaker (1996) considered that brand equity can also increase significantly the value of the organization through loyalty and a higher level of perception of the quality of products or services created by enterprises which,

considering the importance that brand equity has nowadays for small enterprises, the development of empirical investigations about this concept have a paramount relevance in the current marketing literature (Johnston & Jones, 2004), especially when everything is related to service innovation (Atashfaraz & Sadr, 2016). As a result, brand equity allows organizations not only to keep their participation in the market but also to increase the preference of purchase intentions of the brand of their services (Lee *et al.*, 2009).

Likewise, brand equity is usually regarded in the literature as a group of characteristics that are developed constantly in the mind of clients and consumers in order to set apart the services of an enterprise from their main competitors (Yoo & Donthu, 2004). Thus, the current relation between the brand and innovation activities is one of the main topics in the field of marketing because even when it is a relatively new topic it has a great potential further investigations (Dorian-Laurentiu, 2015). Moreover, different papers published about branding have shown an essential progress about the importance of brand equity in both decision making of enterprise managers (especially in small ones) and the dissemination of innovation activities (Peres *et al.*, 2010).

In this regard, the link between brand and innovation has been analyzed and discussed by several researchers, scholars and professionals of marketing from different perspectives. One of them, and perhaps one of the most important ones, is link between brand equity and service innovation (Dorian-Laurentiu, 2015) since service innovation needs a brand that provides distribution in the market and the brand requires the promotion of its new services. Therefore, the development of a strong brand can be the difference between attaining better results in the long term and the rejection of new services (Aaker, 2009) because if consumers perceive a high value of the brand equity the extension of the brand of new services will have different advantages in terms of quality and brand image and avoid the problems of acceptance (Keller & Lehmann, 2006).

In this set of ideas, it is possible to establish that service innovation has a strong influence in the brand (Dorian-Laurentiu, 2015), especially in the brand equity of new services (Atashfaraz & Sadr, 2016). As a consequence, considering the scarce empirical investigations that are published in the current marketing literature that have analyzed the link between service innovation and brand equity, the main contribution of this empirical research is the analysis and discussion of the effects of service innovation on brand equity of small firms in a country with an emerging economy, as it is the case of Mexico, just as it is recommended by Liao and Cheng (2014), Dorian-Laurentiu (2015) as well as Atashfaraz and Sadr (2016).

2. Method

The innovation activities and brand equity are the two most important dimensions in business strategies implemented nowadays in firms, especially the innovation of products or services and brand equity but more specifically the innovation since it is a key factor of brand equity (Staake *et al.*, 2009). Similarly, innovation activities do not always have the expected results as some of them produce negative results in the organizations (Guo, 2002; Matear *et al.*, 2002; Rizova, 2006) because when the innovations implemented by companies fail, consumers normally have a bad experience and this also creates annoyance and frustration when getting such services Smith & Bolton, 2002; McColl-Kennedy & Sparks, 2003).

Furthermore, Roehm and Brady (2007) concluded that the frustration of consumers is mostly caused by the high expectations that they have about a specific brand of products or services. That is why the frustration and annoyance produced by a deficient service innovation has a strong influence in the purchase intention and the evaluation of innovations of small firms (Dube & Maute, 1996) as well as in the level of satisfaction of clients and consumers (Andreassen, 2000). Therefore, this type of practices can create as a result the loss of clients because the lack of service innovation could have a negative impact in brand equity, not only in those services but also in the very image and brand of the company (Sparks & McColl-Kennedy, 2001).

However, the negative impacts coming from shortfalls of service innovation can be diminished significantly if enterprises have a strong brand equity (Dorian-Laurentiu, 2015) because the expectations of consumers can be achieved in terms of the functions and the return given to the organization (Liao & Cheng, 2014) as well as in other alternatives for users and dealers (Marwa & Zairi, 2008). Moreover, there is evidence in the literature that

other investigations have shown a minor negative impact of the shortcomings of innovations in the evaluation of consumers when firms, especially small ones, have a high perception of the level of brand equity (Choi & Matilla, 2008).

Similarly, the brands of service innovation that have a low level of brand equity, including new brands of service innovation, have more probabilities of having negative effects from the shortfalls of service innovations (Dorian-Laurentiu, 2015). As a consequence, a positive perception of the interaction of brand value with consumer can cause that such consumers do not evaluate negatively the shortcomings of the innovation activities (Munteanu, 2011). Moreover, considering that most releases of new services are pre-launched in the market (Bayus *et al.*, 2001), it is important to consider that the information offered to consumers must be precise, especially when there is a high level of perception of brand equity of the innovations of small firms (Dorian-Laurentiu, 2015).

Thus, the brand equity of services from small firms plays an essential role in service innovation (Atashfaraz & Sadr, 2016) since it practically refers to the value that the nave provides to a product or service (Ailawadi *et al.*, 2003). Therefore brand equity often reflects a positive attitude with consumers and it is closely related to the brand of products or services (Ailawadi *et al.*, 2003; Keller, 2003). That is why brands have a high level of perception of brand equity; they do not just tend to have a significant increase in their market participation and achieve competitive prices of their services like the ones of the main brands (Batra & Homer, 2004) but they also have more loyalty from their consumers in the purchase intention of the services (Atashfaraz & Sadr, 2016).

In this regard, Chandon *et al.* (2000) concluded that enterprises, especially small firms, can have a high or low level of brand equity but managers will have to develop a high level of brand equity of their products or services as it provides organizations higher benefits such as the perception of a higher level of service quality, lower costs of communication of the brand and a better evaluation of the brand from consumers (Liao & Cheng, 2014). Consequently, the increase in the evaluation of brand equity in the minds of clients and consumers can be a learning experience about the brand of the firms (Bridges *et al.*, 2000) as well as a fundamental element to achieve a higher level of satisfaction from consumers (Oliver & DeSarbo, 1988).

In this trend of ideas, Aaker (1996) defined brand equity as a set of elements that are closely linked with the name or logo of a company, which increase the value of goods or services provided to clients and consumers. On the other hand, Simon and Sullivan (1993) defined brand equity as the current differences in the consumer's choice between a specific brand of products or services and those from an unknown brand with the same level of quality. Moreover, Farquhar (1989) had already suggested a more simple definition of brand equity introducing and value addition that can create more benefits for enterprises. To sum up, brand equity can be defined as the value addition for enterprises, businesses or consumers that provide some products or services (Buil *et al.*, 2013).

In this context, consumers will determine in a high percentage the brand equity of the innovation of services provided by companies (Atashfaraz & Sadr, 2016). However, if small firms achieve a high brand equity, it is possible that consumers are willing to give a higher level of evaluation of brand equity in comparison to those enterprises that have a low brand equity even when they have a bad experience with service innovation (Wood & Moreau, 2006). For that reason, it is possible to find evidence in some published investigation in the marketing literature that the innovation of services, even when there are shortcomings, it is a lot easier to attain a higher level of evaluation of brand equity when there is a strong positioning of the brand (Brady *et al.*, 2008).

However, Choi and Mattila (2008) discussed that even when enterprises have a strong brand, the evaluation of brand equity from consumers can affect the brand of products or services if they are not perceived with good quality. Thus, consumers normally use their expectations as reference point to evaluate the brand equity of products or services (Oliver, 1997) and they tend to provide a higher level of evaluation of brand quality and value when they have a positive impression of the organization's image and when they have enough information about the innovation of the product or service (Bolton, 1998; Tax *et al.*, 1998).

Additionally, when small firms have a high level of reputation, consumers generally tend to be less strict in the evaluation of brand equity of the innovation of products or services which lessens the negative impacts in the

perception and image of the organization (Liao & Cheng, 2014) because the effects in the possible shortfalls that the innovation of a specific service may have they can be considered by consumers as insignificant by the perception of quality and reputation obtained by enterprises (Weiner, 2000). Consequently, Hess (2008) considered that brand equity can act as an essential element to create in consumers the perception of a strong brand as well as promote the innovation of products or services.

Thus, the development of a high level of brand equity from small firms will help to diminish significantly the negative aspects that could appear in the innovation of services (Sloot *et al.*, 2005) and when there is a flaw in the service provision the evaluation of brand equity from clients and consumers can remain relatively intact (Liao & Cheng, 2014). Furthermore, considering the previous arguments, it is possible to establish that the positive evaluation made by consumers about brand equity could produce the implementation of small changes in the delivery of the new service as well as a higher level of service innovation. Therefore, considering the information mentioned earlier, it is possible to establish the following research hypothesis.

H1: The higher level of brand equity, higher level of service innovation

2.1 Sampling Procedures

An empirical research of small enterprises in Aguascalientes (Mexico) was considered relevant in order to answer the hypothesis established in previous paragraphs by using the business directory of the Sistema de Información Empresarial Mexicano (System of Mexican Business Information, or SIEM) for Aguascalientes State in 2017 which had 1,427 registered enterprises, each one containing from five to 250 workers at the end of January. Moreover, an instrument of data collection was designed to be answered by managers and/or owners of 300 small service firms, which were selected through a random sampling with a maximum error of ± 5% and a level of reliability of 95%, which represents slightly over 21% of all the small service firms registered. Such interviews took place between February and April 2017.

2.2 Measures and Covariates

Accordingly, a scale proposed by Berthon *et al.* (2008) was taken from the scale developed by Keller (2008) who considered that brand equity can be measured through a scale of five items. Moreover, the scale developed by the Oslo Manual (OECD, 2005) was used to measure service innovation in small firms, which establishes that service innovation can be measured through a scale of 4 items. All the items considered of the scales of brand equity and service innovation were measured through a Likert-type scale of five positions from "1 = completely disagree" to "5 = completely agree" as limits.

Similarly, a Confirmatory Factorial Analysis (CFA) was carried out to evaluate the reliability and validity of the scales of brand equity and service innovation by using the method of maximum likelihood with the software EQS 6.2 (Bentler, 2005; Brown, 2006; Byrne, 2006). Furthermore, the reliability was evaluated with Cronbach's alpha as well as the Composite Reliability Index (CRI) (Bagozzi & Yi, 1988). The results obtained from the CFA are shown in Table 1, and show that the theoretical model analyzed has a good adjustment of data ($S\text{-}BX^2$ =321.537; df = 26; p = 0.000; *NFI* = 0.889; *NNFI* = 0.857; *CFI* = 0.897; *RMSEA* = 0.079). Likewise, the values of Cronbach's alpha and the CRI are higher than 0.7, which indicates the presence or reliability in the scales of brand equity and service innovation (Nunally & Bernstein, 1994; Hair *et al.*, 1995).

Furthermore, the results obtained from the CFA indicate that all the items of the factors related are significant ($p < 0.01$). The value of all the standardized factorial loads is higher than 0.6 (Bagozzi & Yi, 1988) and the Extracted Variance Index (EVI) of each pair of constructs of the theoretical model of brand equity and service innovation has a value over 0.5 (Fornell & Larcker, 1981). These values indicate that the theoretical model has an excellent adjustment of data and provide evidence of the presence of convergent validity.

Table 1. Internal consistency and convergent validity of the theoretical model

Variable	Indicator	Factorial Loading	Robust t-Value	Cronbach's Alpha	CRI	EVI
Brand Equity	BEQ1	0.838***	1.000[a]	0.896	0.897	0.638
	BEQ2	0.860***	22.089			
	BEQ3	0.838***	18.397			
	BEQ4	0.746***	16.071			
	BEQ5	0.699***	15.818			
Service Innovation	SIN1	0.964***	1.000[a]	0.981	0.982	0.923
	SIN2	0.978***	41.861			
	SIN3	0.962***	38.335			
	SIN4	0.960***	39.671			
S-BX^2 (df = 26) = 321.537; p < 0.000; NFI = 0.889; NNFI = 0.857; CFI = 0.897; RMSEA = 0.079						

[a] = Constrained parameters to such value in the identification process

*** = p < 0.01

Similarly, the discriminant validity of the theoretical model of brand equity and service innovation was measured through two tests, which are shown in Table 2. Firstly, *the reliability interval test* (Anderson and Gerbing, 1988) which establishes that with an interval of 95% of reliability none of the individual elements of the latent factors of the matrix of correlation must have a value of 1.0. Secondly, the test of extracted variance which establishes that the extracted variance of each pair of constructs is lower than their corresponding EVI. Therefore, based on the results obtained from the tests applied, it can be concluded that there is enough evidence of the presence of discriminant validity.

Table 2. Discriminant validity of the theoretical model

Variables	Brand Equity	Service Innovation
Brand Equity	**0.638**	0.240
Service Innovation	0.350 – 0.630	**0.923**

The diagonal represents the Extracted Variance Index (EVI), whereas above the diagonal the variance is presented (squared correlation). Below diagonal, the estimated correlation of factors is presented with 95% confidence interval.

3. Results

In order to answer the research hypothesis established in this empirical research, a model of structural equations was applied with software EQS 6.2 (Bentler, 2005; Byrne, 2006; Brown, 2006). Furthermore, the nomological validity of the theoretical model of brand equity and service innovation was examined through the square Chi test which compared the results obtained between the theoretical model and the measurement model. Such results indicate that the differences between both models are not significant which can offer an explanation of the relationships observed among the latent constructs (Anderson & Gerbing, 1988; Hatcher, 1994). Table 3 shows the results in a more detailed way regarding the implementation of the model of structural equations.

Table 3. Results of the structural equation model of Family SMEs

Hypothesis	Structural Relationship	Standardized Coefficient	Robust t-Value
H1: The higher level of brand equity, higher level of service innovation.	Brand Equity → Service I.	0.668***	12.908
S-BX^2 (df = 26) = 322.459; p < 0.000; NFI = 0.889; NNFI = 0.857; CFI = 0.897; RMSEA = 0.079			

*** = P < 0.01

Table 3 shows the results obtained from the implementation of the structural equations model and it can be observed that the results of the research hypothesis $\mathbf{H_1}$ the results obtained ($\beta = 0.668$, $p < 0.01$) indicate that brand equity has significant, positive effects in service innovation. Therefore, it is possible to establish that the evaluation and perception of brand equity made by consumers affect in a positive way the innovation of services of small firms.

4. Discussion

The results obtained in this empirical research allow us to conclude in two main aspects. Firstly, brand equity is becoming increasingly in a priority not only among small service firms but also for small manufacturing enterprises. As long as consumers give more value to the brand of the services offered in the market, their purchase intentions will be higher. Therefore, it is possible to conclude that if managers and/or owners of small service firms consider the brand equity activities as part of their daily actions then the results obtained could be the same in the purchasing preference of the services they offer in the market.

Secondly, the innovation in small service firms have to be considered as an essential activity since innovation allows small service enterprises to implement changes or improvements in the current services of the organization as well as to improve significantly the brand equity of both the brand and the services offered. Consequently, it is possible to conclude that the adoption and implementation of different activities that imply service innovation from small service firms will allow them not only to continue in the market where they participate but also to make their services stand out from those offered by their main competitors and produce with this a higher value of brand equity of their services and the company as a whole.

In this regard, it is possible to conclude in general terms that the value given to the brand of services of small firms by clients and consumers will have positive and significant effects in the innovation activities of the services they produce which will allow small service enterprises not only to improve significantly their market position but also to obtain more and better competitive advantages in comparison to their main competitors. Therefore, if small service firms can improve the perception of a higher brand equity of their services from their clients and consumers in a high percentage, then the probabilities of getting the necessary economic resources for the development of service innovation activities will increase a lot.

Likewise, these results also have some implications that are equally important to establish. The first one is that usually most small service firms, just like small manufacturing enterprises, do not have a registration of the trademark of their services. That is why it is important that, before thinking about improving the perception of the brand equity of their services, managers implement activities regarding the registration of the intellectual trademark of their services. This will avoid the replication or copy of the innovation of their services from their main competitors and it will also increase the possibility to produce a higher commercial exploitation of the service innovation.

A second implication obtained from these results is that usually most small service firms from developing countries and with an emerging economy, as it is the case of Mexico, service innovation activities are practically focused on the implementation of modifications or improvements to the current services (incremental innovation) in the company. Nonetheless, these changes or enhancements are accepted positively by a segment of clients and consumers not only because they suit to their needs but also because there is normally a customization of services which creates both a higher perception of brand equity of such services and the production of a higher level of purchase intention in comparison to the ones offered by their main competitors.

A third implication of these results is that managers and/or owners of small service firms have to encourage working together including all the staff of the organization as this will make that activities related to brand equity and service innovation can take place accordingly and have the expected results. Moreover, managers and/or owners of small service firms will have to involve all the departments or functional areas of the organization to adopt and implement brand equity and service innovation activities in a way that the information about the

preferences and needs of clients and customers as well as the perception of brand equity can be shared among the different departments so they have the possibility to come up with improvement actions.

Finally, a fourth implication of the results obtained is that managers and/or owners of small service firms will have to adopt and implement the necessary training programs for employees and workers in the activities related to brand equity and innovation in order to facilitate the development of these activities. This will determine in a high percentage that service innovation can fit the needs of consumers as well as a higher level of perception of brand equity of the services and the organization as a whole. Otherwise, it could jeopardize not only the implementation of two important activities but also the very survival of enterprises.

Additionally, this empirical research has some limitations that are necessary to mention. The first one is about the sample used as only small service firms that had between five and 250 workers were considered. That is why future investigations could consider in the sample small service firms with less than five workers in order to confirm the results obtained. The second limitation is that the questionnaire applied to collect the data only considered small service firms in the state of Aguascalientes (Mexico) even when small enterprises have similar characteristics in all the country. Future researches will need to apply the same questionnaire in other states of the country in order to verify the results obtained.

A third limitation is that only qualitative variables were considered to measure brand equity and service innovation so in future investigations it would be relevant to use quantitative variables or hard data to prove the results obtained. A fourth and final limitation is that the instrument applied to collect data only considered managers and/or owners of small service firms. This created the assumption in the research paper that they have a deep understanding about brand equity and service innovation of their enterprises. Future research papers could consider to apply the same questionnaire to employees and workers of the firm as well as their main consumers in order to confirm or deny the results obtained.

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Factors of Cluster Initiatives Management

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Abstract

The idea of clusters attracts attention of specialists as well as larger public since at least three decades. Presented paper addresses itself to one particularly important aspect of managing clusters*:* cluster excellence and the ways of achieving it. Despite the on-going debate there are still only a few studies that investigate cluster initiatives performance and management phenomena, identify the success factors underlying cluster initiatives management and compare their influence.
The objective of this study was to identify Critical Success Factors of cluster initiatives management. Further development of the field demands constant sophistication of analytical tools and modes of empirical research. There exist a need for selecting and assessing quality of data at researcher's disposal. It is particularly strongly felt when data come from respondents in social surveys, from participant observation, focus groups sessions, content analysis and so on. Methods listed above always bear some risk of subjectivism and arbitrary decisions of what is good or bad in data we have. AHP method adopted in research which paper is based on offers stronger ways of gathering, selecting and interpreting the validity of data. The proposed Analytic Hierarchy Process framework identified the relative importance of different success factors to cluster initiative management and determined the key areas of activity and management focus.
The AHP based interviews conducted among European cluster managers representing 19 cluster initiatives located in 10 countries allowed to identify the following Critical Success Factors: 'Assuring sustainability of financing', 'Development of CI mission, vision, strategy and operational action plan', 'Integration building partnerships inside the CI, creation of interpersonal links, social networks, trust' and 'Development of cluster's critical mass and management of partners' complementarities and interdependencies'. Their joint importance for cluster initiative management success reached 40%, while the remaining 60% was distributed among 16 other factors.
The results of this study support more effective management and better organization of cluster development processes. They are specifically tailored for entrepreneurs, willing to initiate or establishing cluster initiatives, as well as managers, responsible for CIs day-to-day operations and other CI stakeholders. They can also be utilized in the political area, as guidance for policy makers in redesigning policies of cluster initiatives support as well as monitoring and evaluation processes, so that they are based on identified CSFs.

Keywords: European Clusters, Analytic Hierarchy Process (AHP), Management, Critical Success Factors

1. Introduction

Clusters are relatively new organizational phenomenon but they have some predecessors. One of them is well known as an "industrial district" [Marshall 1920] and denotes certain number of enterprises acting in direct geographical proximity, usually surrounding larger city. Example could be Boston District, (described by [Breznitz S. and Anderson W. P. 2004]). Another one is the case of Italian footwear industry, particular case of a very specific organization (factories which group themselves together to better perform certain actions, such as preparation of an exhibition during international fairs or presentation of a tender to customers; see: [Amighini A. and Rabelloti R. 2006]. Still another example can be old industrial district transformed into new one, a form of departure from older industrial monoculture to more diversified one and more eco-friendly (Birmingham District in GB described in details by M.J. Wise in his publication "Essays on the Growth of Birmingham and other Contributions to the Geographical Study of the Birmingham Discrict, Birmingham, 1951; Birmingham's Transformation and Future Prospects, Economic Strategy Development and Culture Directorate, Birmingham City Council, [1951]. And finally we should mention here so called "competitiveness poles", being "a combination, within the same territory, of three components (enterprises, training institutions and research units) and three factors of critical significance (partenariat, innovation and international visibility)" [Largier et al., 2008]. Such poles are sometimes perceived as an intermediating form between industrial districts and clusters, and sometimes as phenomenon closely reminiscent clusters. In the actual research state of the art three cognitive perspectives have emerged, portraying industrial groupings of different subjects: (a) economic perspective, focused on sectoral aspects and stressing the relation "client-supplier" or technological ties, zones of employment or /…/ networks of common distribution, (b) relational perspective, putting stress on actors networks, geographical proximity and leading to great variability, (c) territorial perspective, which sees clusters mainly as the place or pole having a critical mass due to particular concentration of enterprises, research units and training institutions, acting in a particular domain, based on the presence of risk capital, the state and local communities aiming for international excellence" [Largier et al., 2008].

One common trait of these cluster-preceding forms was their grass-roots genealogy. In almost every case listed above, district or "network" was initiated mainly by entrepreneurs seeking for market opportunities or just trying to commercialize on them. However, local or even country-wide policies of economic development played here certain role. In the case of Birmingham District there was some support from local as well as central government reflecting the public authority's desire to overcome pitfalls of an older industrial order such as growing unemployment in the region, dying economic dynamics, and ecological degradation of an area. Rarely questions asked by practitioners or researchers dealt with identification of key success factors of such districts or – to put it more precisely – identification of key factors of districts' successful management. We may say that such questions were rather absent due to slightly different "ontologies" of older industrial districts and newer clusters.

What is so revolutionary new in all these cases of industrial clusters which demand for search of specific ways of cluster initiative management? Do clusters really need something we call (following others) "cluster initiative management"? Mentioned older forms of grouping entrepreneurial agents differ in several important points from today's clusters. Let us briefly point out these differences. First of all - clusters become part of regional and countrys' development policy and are seen as ways to promote this development. As such, clusters are now instruments of stimulating and promoting economic and social development of regions/countries. Secondly, clusters emerge as an international ventures, and – as in the case of EU – sometimes cross the borders of national states. There exist several examples of European initiatives fostering cross border cluster initiatives: European Policy Cluster Group, European Cluster Observatory, Cluster Innovation Platform, Cluster Excellence Initiatives. The common aim of all these efforts is the promotion of more world-class clusters in EU. Third, as the example of EU shows, clusters are now not only tools for reinforcing national economies but also for initiating international business cooperation [Meier zuKöcker, G., 2009]. Fourth – clusters incorporate not only enterprises, but also universities, research units and many other organizations. They demand more engagement from local and even governmental authorities. Fifth, cluster grow in number and size, conquer new areas of activity and focus on innovation to growing extent. All this traits demand some measuring instruments, since clusters today are not exclusively self-governing entities but are also co-governed by differentiated set of bodies.

This situation calls for common standards of measures applying to clusters' performance and its correlates. Let us list some specific reasons for the need of precise measuring of cluster or cluster initiatives' performance:

- Internal pragmatic reason: since clusters are now tools for promoting countries' and regions', economies, there is the apparent need to introduce indicators enabling the architects of national economic reforms to exercise control over (at least) the use of government's capital and other resources invested in clusters
- External pragmatic reason: comparative statistics regarding international performance of clusters; this reason calls for a separate set of indicators permitting to hierarchize clusters according to a clear and preferably simple measures of their success in the globalized context
- "Social auditorium" reasons: clusters functioning is carefully observed by a number of agents; public is informed about the input of clusters into regional/national prosperity and progress; interests groups use lobbying to gain some legal regulations in favor of their interests, future financial support for some cluster initiatives may depend on satisfaction of local communities from cluster and cluster initiative success;
- Cognitive reason: cluster theory remains one of the prominent currents in contemporary economics; its further development demands constant sophistication of analytical tools and modes of empirical research; this can be done mostly due to elaboration of new indicators or excelling of existing ones

Our attempt to study the success of cluster management initiatives through the application of AHP method stems from this fourth reason. And as in the case of social sciences one can notice that part of progress in empirical theory (theory founded on empirical testing of hypothesis) depends heavily on precise notions, strictly defined independent and dependent variables, proved methods of gathering data, and good measuring scales. Statistics certainly cannot offer a ready, satisfying patterns and procedures of drawing conclusions from any set of data. So there is a need for selecting and assessing quality of data at researcher's disposal. It is particularly strongly felt when data come from respondents in social surveys, from participant observation, focus groups sessions, content analysis and so on. Methods listed above always bear some risk of subjectivism and arbitrary decisions of what is good or bad in data we have. Thus AHP method can partly reduce the above mentioned uncertainty offering stronger ways of gathering, selecting and interpreting the validity of data.

Of course, previous studies already delivered a lot of interesting data on determinants of success of cluster initiative management. Moreover, some of these studies had explicitly formulated comparative aim of success factors measuring. Authors from Linkoping and Uppsala Universities point out that five factors ("big five") strongly influence the success of cluster initiative management: (a) idea specifying what needs cluster initiative satisfies, (b) driving forces and commitment: key highly motivated individuals in cluster initiative, (c) activities: structure of activities that make it attractive to be a member of cluster initiative, (d) critical mass; sufficient number of active members enabling meaningful and valuable exchange to occur, (e) organization: presence of a skillful coordinator able to ensure access to resources in everyday running of the cluster initiative. [Klofsten, M., Bienkowska, D., Laur, I., Sölvell, I.,2015]. This list of factors determining success of CI management comes from literature review and has rather "deductive" character. This is because of desire of authors to deliver a holistic perspective on CI development and at the same time perspective possible to use with diverse CIs [Klofsten, M., Bienkowska, D., Laur, I., Sölvell, I.,2015]. Being far from criticizing the presented framework we want to stress the necessity of further efforts going to still better elaboration of not only a lists of success factors but namely constructing such lists on the basis of inductive research, starting from social experts experience, e.g people involved in CI management. This can bring us closer to the reality of cluster initiatives management, and helps create chances to be more objective and less arbitral in defining factors of cluster initiative success. In the subsequent parts of this paper we present our position in more detailed manner.

2. Cluster Initiatives management

2.1 Cluster initiative concept

The cluster initiative concept is closely related to the terms 'cluster organization' and 'cluster policies' and often used interchangeably by different authors. However, it is worth underlining that these terms do not overlap completely.

In this paper the term *cluster initiative* will be also understood as:

- A cluster development project or any other organized effort to enhance the competitiveness of a cluster [Ketels, C., Lindqvist G., Sölvell Ö., 2006]
- Collaborative actions by groups of companies, research and educational institutions, government agencies and others, to improve the competitiveness of a specific cluster [Ketels, C., Memedovic O., 2008]

Cluster initiative refers to the process of cluster-related actions, while the term cluster organisation refers to the organisational entity facilitating these processes. A cluster organisation is the legal entity that may be set up to carry out the activities of a specific cluster initiative, or, more rarely, it may be an existing organisation that has been converted to this purpose. The activities of a cluster organization are often a subset of the activities conducted within a cluster initiative. It means that, a cluster initiative can be conceptualised as a framework within which some actions may be carried out by a dedicated cluster organization and others independently by indicated parties. In a typical case, a cluster initiative may lead to the establishment of one or several cluster organisations [Lindqvist, G., 2009]. Merkl-Rachbauer and Reingruber [2012] define cluster organisation as a specialised institution of various legal forms responsible for cluster initiative management.

Since majority of cluster supporting actions are undertaken by the local regional and national authorities cluster initiative concept may also be associated with the term ‘cluster policies’ understood as ‘programs or other organised efforts undertaken by government to increase the growth and competitiveness of clusters in its constituency’ [PwC, 2011]. In European countries cluster initiatives are often established as a result of public programs support.

Having in mind that all the three concepts are so correlated the success factors identified within this study should also refer to cluster organizations management and provide guidelines for cluster policies development and evaluation.

2.2 Cluster initiatives management

Cluster management refers to ‘the management of activities that involve or may be shared by clustered firms’. It is closely interrelated to cluster facilitation i.e. enabling groups and organizations to work more effectively, collaborate and achieve synergy [Kaner, S., Lind, L., Toldi, C., Fisk, S., Berger, D., 2007]. Cluster manager facilitates ties with cluster’s current and potential members and stakeholders and when a shared vision emerges, encourages its collective realization. According the Report of PricewaterhouseCoopers cluster management can be defined as: ‘the organization and coordination of the activities of a cluster in accordance with certain strategy, in order to achieve clearly defined objectives’ [PwC, 2011]. Cluster management is a complex, interactive and non-linear process.

Following the approach undertaken by Singh [Singh R., 2011] within his research on supply chains we might state that the conflicting objectives and lack of coordination between cluster members may often result in poorer performance of the cluster in the given region. Regular monitoring and implementation of performance measurement model (framework) may help in managing inter-dependencies, increase the efficiency of joint actions and improve the performance of the whole cluster by considering the needs of the individual CI member. Moreover CI is fully coordinated when all decisions are aligned with the agreed objectives of the initiative. Lack of coordination or poor coordination occurs when governing agents of the CI have incomplete information and undertake incentives that are not compatible with those objectives. In view of increasing importance of coordination for success of cluster initiatives, the proper management model and guidelines should be proposed.
Cluster initiative’s success might be understood as fulfillment of CI’s vision, mission, strategy and objectives as well as achievement of the desired outcomes and impacts of the cluster performance. The vision of the cluster represents a framework for the cluster’s strategic planning, specifying what the cluster would like to achieve in the long-term perspective, while the cluster mission refers to cluster organization’s role in achieving it. Cluster strategy determines the actions that have to be undertaken in order to realize the cluster vision. The detailed action plan usually consists of the following six elements [PwC, 2011] (1) Direction, specifying the long term

goals of the CI; (2) Scope, representing the key activities of the cluster initiative; (3) Competitive advantage, specifying the key strengths of the CI and ways of their utilization; (4) Resources, representing key resources (i.e., skills, assets, finance, relationships, technical competence, facilities) that are necessary for the realization of the cluster vision; (5) Climate, referring to external factors that might affect cluster's development (e.g., political, economic, legal factors); (6) Stakeholders; values and expectations of the key stakeholders and their effects on cluster's development.

Achieving cluster initiative success is a complex issue that demand multilateral coordination and requires more than just achieving the goals of individual organizations. It requires collective action and the management of these activities. Although, many cluster initiatives may not have a legal form its proper management is critical for overall effectiveness.

3. Methodology

3.1. Analytic Hierarchy Process method overview

The AHP (Analytic Hierarchy Process) method was selected for determining the relative importance of different success factors of cluster initiatives management. The AHP method is characterized by simplicity, applicability to various areas of science and high effectiveness in problem solving. Therefore, it can be successfully applied to estimate priorities (weights) in the area of cluster initiatives management. The AHP involves three major stages [Chen, C., Huang, C., 2004] [Wind Y., Saaty, T., 1980]: (1) 1st stage is a decomposition of a complex problem into a hierarchy; each level consists of a few manageable elements, which are in turn, decomposed into the given elements of the problem, typically the specific courses of action, which construct the lowest level of the hierarchy. A decision problem hierarchy is an efficient way of identifying the major components of the problem. The number of elements in each branch of the hierarchic decision tree should be more or less comparable. Moreover the elements should be of the same order of magnitude with respect to the basis of comparison. With regard to the principle of hierarchical decomposition, (a) the lower level elements must be outer-dependent on the associated level above, (b) the lower level elements must not be inner-dependent with respect to the elements at the level above, and (c) the higher level elements must not be outerdependent on the level below. A typical AHP model consists of an overall goal, a set of criteria to specify the goal decomposed to subcriteria, and the decision alternatives to be evaluated – constructing the lowest level of the hierarchy [Wolfslehner, B., Vacik, H., Lexer, M., 2005].

3.2. Research questions, aim and hypothesis

Since cluster initiatives are an important 'strategic tool' for regional development, the following questions have been taken under consideration and formed the basic research/study framework for the subsequent interviews and questionnaires. Based on the literature review, the following research questions were formulated:
1) What is meant by cluster initiatives management success?
2) How can cluster initiatives management success be achieved?
3) What are the Critical Success Factors of cluster initiatives management?

Main aim: to identify Critical Success Factors of cluster initiatives management effectiveness and to define the optimal cluster initiatives management model.
Main hypothesis: Estimation of Critical Success Factors of cluster initiatives management allows to determine the optimal model of cluster initiatives management.

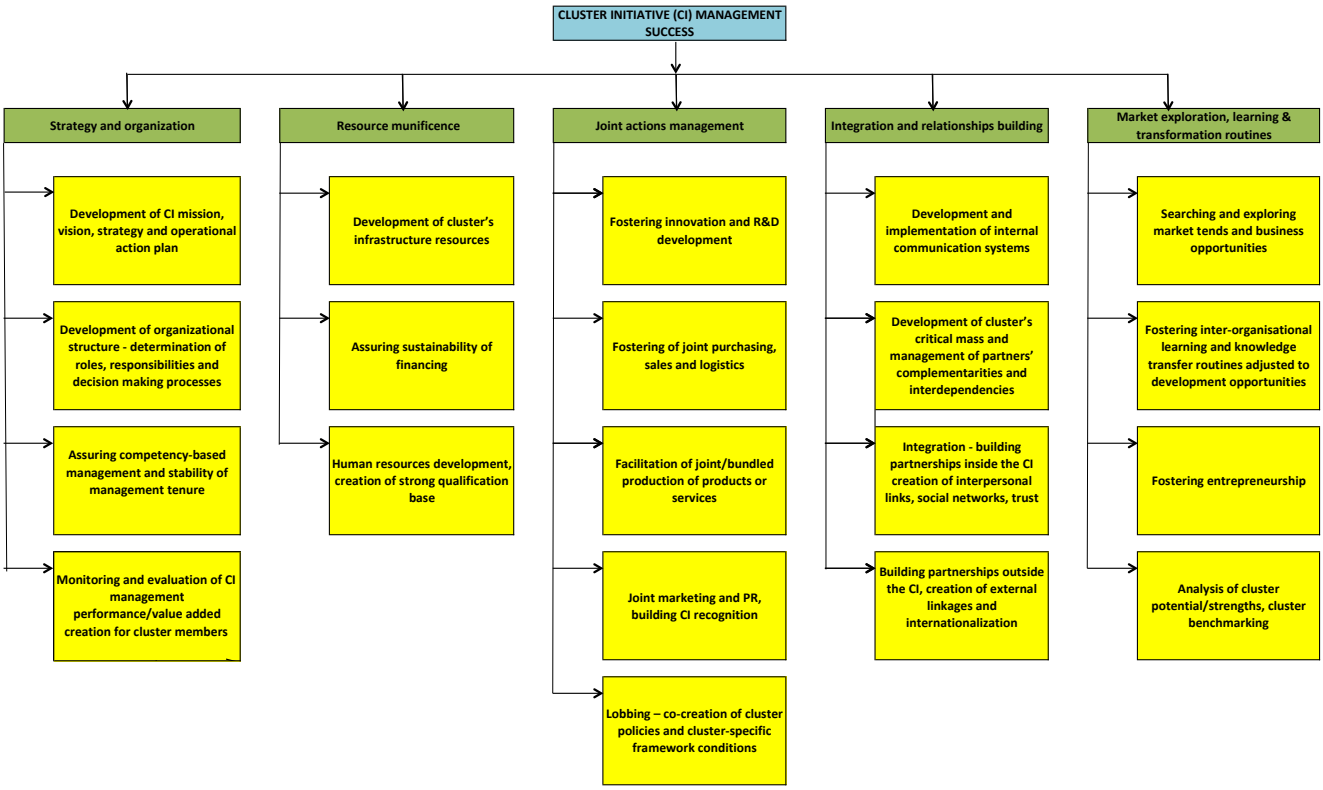
3.3. Application of AHP method for identification of Critical Success Factors of cluster initiative management

In order to determine the Critical Success Factors of cluster initiatives management the following steps of Analytical Hierarchy Process approach were adopted:

1) Extensive literature review and formulation of major criteria and subfactors/subcriteria affecting effectiveness of cluster initiatives management; Based on extensive review of existing literature on the cluster performance the list of success factors that ought to drive cluster initiatives performance was prepared. The extensive review was performed in related databases such as: Scopus, Science Direct, Emerald Intelligence, Google scholar. Initial research into the literature review was conducted in order to select keywords, which were utilised for further research.
2) Preparation of questionnaire used in AHP approach; AHP method was used for eliciting and refining judgments from a panel of experts. It allowed the experts to identify and elaborate on these factors, they consider important. Questionnaires were filled in during face to face or skype meetings.
3) Selection of the expert group taking part in AHP evaluation of CSFs; The success of an AHP study is largely dependent on the quality of the participants/experts therefore, the nomination of people who would be taking part in a study should be very precise and carefully thought out. This study was conducted among Polish and European cluster coordinators and managers representing cluster initiatives from 10 different countries of various development stages and specializations. Moreover, majority of experts were top quality managers holding European awards or representing formally recognized and labeled cluster initiatives.
4) Prioritization of CSFs with AHP method - collection of experts opinions/ideas/judgments about CSFs of cluster initiatives (filled in questionnaires) and formulation of hierarchical structure of the identified critical factors. At this phase of the study a pair wise comparison questionnaire of the success factors identified in previous phases was developed and used to collect pair wise comparison data. Evaluators of the criteria (experts) were expected to answer a series of questions such as: which of the criteria rank is more important in relation to cluster initiatives management success and which of the subcriteria are more important in relation to the given criterion as well as to what degree they are more important in the scale from equally important to absolute dominance. The evaluator's task was to mark in the pairwise comparison table the dominance of one criterion above another on the verbal scale from weak to absolute (extreme) dominance, called the fundamental preference scale of T. Saaty. If one criterion did not outweigh another in relation to the respective goal of comparison, i.e. in the case of equivalence of both criteria in the expert's opinion, the evaluators (experts) marked equal dominance of the criteria (the lack preference for one above the other). By the pair wise comparison data, the priority and ranking of each criteria and subcriteria in terms of effective and successful CIs management was obtained.

Figure 3.1 shows the hierarchy tree for making the decision about the priority of factors affecting cluster initiatives management success. The success factors identified in the literature review have been classified in 5 success criteria: ‘Strategy and organization’, ‘Resource munificence’, ‘Joint actions management’, ‘Integration and relationships building’ and ‘Market exploration, learning & transformation routines.

Figure 3.1. The hierarchy tree of cluster initiatives management success



Source: Own work

The table below presents definitions of all the main criteria and subcriteria distinguished.

Table 3.1. Definitions of criteria and subcriteria

Criteria	Subcriteria	Definitions
Strategy and organization		Set of management activities related to development of a cluster vision, mission, strategy, organizational structures, assuring stable competency-based management team and performance monitoring and evaluation practices
	Development of CI mission, vision, strategy and operational action plan	Set of management activities related to development and implementation of a cluster initiative's vision, mission, strategy and an action plan in close cooperation with the cluster participants. Internal process in which the needs and expectations of cluster stakeholders are discussed and translated into objectives and actions.
	Development of organizational structure - determination of roles, responsibilities and decision making processes	Set of management activities and supporting tools dedicated to determination of governance structures, controlling and decision-making processes within a cluster initiative. Operational rules and bylaws, for supporting the operation, regulation, and control of the CI structure: actors, positions, authorities, roles, rights, responsibilities and relationships between them developed and accepted by the full breadth of cluster participants.
	Assuring competency-based management and stability of management tenure	Set of management activities related to assuring competency-based management of cluster initiative and stability of management team, employment of highly qualified cluster manager and cluster management team and constant development of their qualifications and skills.
	Monitoring and evaluation of CI management performance/value added creation for cluster members	Set of management activities dedicated to planning, monitoring, evaluating and rewarding CI management performance based-on the definition of key performance indicators. Development of quality assurance system dedicated to performance monitoring and evaluation of cluster strategy execution and value added creation for cluster members ('client' satisfaction assessment). Implementation of consistent and effective ways to document and track activities/processes and integrate quality-oriented improvement approaches.

Resource munificence		Set of management activities dedicated to acquisition and sustainability of financial, human and infrastructure resources.
	Assuring sustainability of financing	Set of management activities and supporting tools associated with assuring the financial health and long-term sustainability and the efficiency of a cluster initiative. Development of a financing model based on regular and variable income sources such as: membership fees, sponsoring and donations, fees for services offered by the cluster management, incomes generated from patents and licenses owned by the cluster organization etc. as well as acquisition of external private and public funds.
	Development of cluster's infrastructure resources	Set of management activities and supporting tools for developing and managing CI infrastructure resources such as cluster offices, laboratories, communication and ICT systems, etc.
	Human resources development, creation of strong qualification base	Set of management activities dedicated to acquisition and development of highly talented and skilled human resources. Set of routines such as: provision of specialized trainings, support of regional educational institutions and infrastructure, talent acquisition from outside of the region, attraction of external companies with highly skilled labour force.
Joint actions management		Set of management activities and extent of routines dedicated to identification of partnering opportunities, development and supervision of cooperation projects between cluster actors (project portfolio management).
	Fostering innovation and R&D development	Set of management activities and extent of routines dedicated to stimulating development of joint R&D and innovation projects, technology transfer and scientific cooperation. Actions associated with improving innovative capabilities of cluster members.
	Fostering of joint purchasing, sales and logistics	Set of management activities and extent of routines dedicated to stimulating joint purchasing, sales and logistics among cluster actors.
	Facilitation of joint/bundled production of products or services	Set of management activities and extent of routines dedicated to stimulating joint/bundled production of products or services among cluster actors (development of cluster products or services – cluster external offer).
	Joint marketing and PR, building CI recognition	Set of management activities and extent of routines dedicated to development of cluster's marketing and PR system that facilitates communication with potential new members, external stakeholders and the general public. Actions associated with creating awareness of cluster vision and strategy, promoting the cluster brand, building international and national visibility and recognition of cluster and its actors. Development of marketing materials and tools for reinforcing the image of a cluster (publications, press releases, fairs etc.).
	Lobbing – co-creation of cluster policies and cluster-specific framework conditions	Set of management activities and extent of routines associated with improving cluster-specific framework conditions, extending location attractiveness and advantages, improving business climate and living conditions.
Integration and relationships building		Set of management activities and supporting tools associated with development of cluster internal communication, critical mass, internal and external relationships and partnerships.
	Development and implementation of internal information and communication systems	Set of management activities and supporting tools associated with creation of cluster internal communication system including websites, intranets, newsletters, bulletins, cluster resources and competence databases, suppliers and services catalogs etc.
	Development of cluster's critical mass and management of partners' complementarities and interdependencies	Set of management activities and supporting tools dedicated to the recognition of cluster members capacities and needs, gaining long-term commitment of CI stakeholders, mobilisation of the relevant regional players ensuring proper composition of cluster participants and representation of the whole value chain (involvement of all triple helix actors, assuring high quality of business and R&D sector and presence of competitors).

	Integration- building partnerships inside the CI creation of interpersonal links, social networks, trust	Set of management activities and supporting tools dedicated to building personal relationships and mutual trust among cluster members through organization of networking and matchmaking events, facilitation of internal partnerships.
	Building partnerships outside of CI, creation of external linkages and internationalization	Set of management activities and supporting tools dedicated to building partnerships outside of CI (cooperation with other clusters, scientific institutions, public authorities, supporting organisations) creating external linkages and facilitating internationalization and mobility of personnel.
Market exploration, learning & transformation routines		Set of management activities and routines dedicated to exploration of market trends, facilitation of knowledge transfer, fostering of entrepreneurship and analyzing of cluster potential and strengths.
	Searching and exploring market trends and business opportunities – building business intelligence	Set of management activities and routines dedicated to market trends exploration and identification of potentially valuable partnering opportunities related to cluster's specialization. A collaboration opportunity might be internal or external.
	Fostering inter-organizational learning and knowledge transfer routines adjusted to development opportunities	Set of management activities and extent of routines designed to facilitate collective learning process and flow of information, ideas, and resources within a cluster, as well as transregional knowledge exchange.
	Fostering entrepreneurship	Set of management activities and extent of routines designed to foster entrepreneurship and assure high dynamics of markets, products, services, new niche and market fields exploration, innovative start-ups creation, etc.
	Analysis of cluster potential/strengths, cluster benchmarking	Set of management activities and extent of routines designed to analyzing of cluster potential and strengths, including systematic SWOT analysis (macro, meso and micro levels) and international benchmarking.

Source: Own work

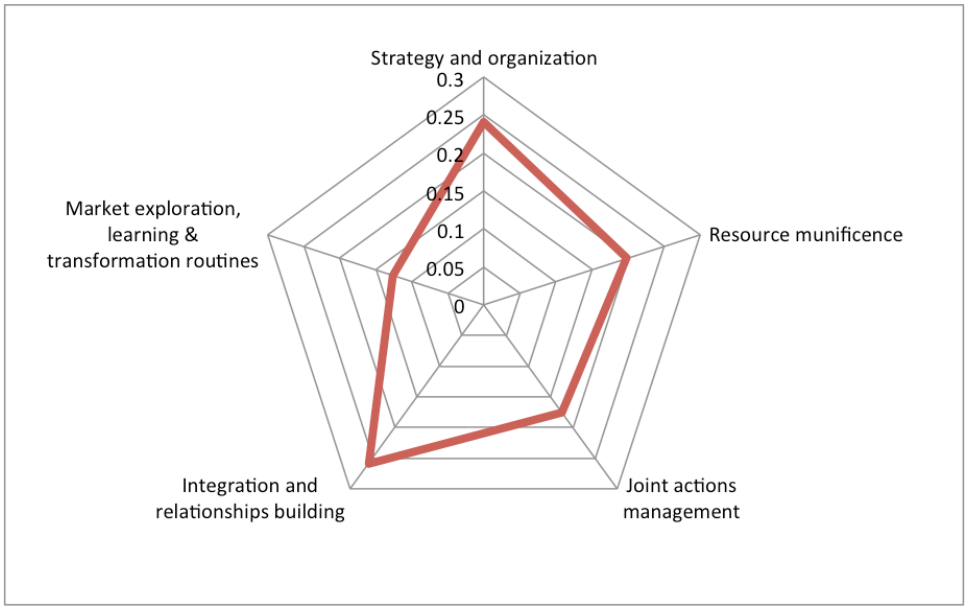
3.4. Characteristics and selection of research sample, interview structure

The cluster initiatives managers invited to be a part of the study were identified through sources such as Europa InterCluster (intercluster.eu), TCI Network databases (tci-network.org) and direct meetings during conferences, workshops, training sessions, and research projects dedicated to cluster related topics. These contacts were also used to get direct referrals to other experts identified through online search or experts databases such as LinkedIn. Out of nearly 90 experts - managers of cluster initiatives in Europe invited to participate in the study only 25 agreed to conduct the interviews. The study was conducted based on face to face and skype interviews. Each interview lasted approximately one hour. Out of 25 interviews only 19 responses qualified to be taken into consideration, the remaining 6 were either not fully completed (because of expert's lack of time) or their Consistency Ratio (CR) indicator exceeded 10%. Each expert within the interview made pairwise comparisons among the Success Factors grouped into main criteria and subcriteria. The experts represented 19 different cluster initiatives located in 10 European countries i.e. Clean Cluster (Denmark), Sustainable Infrastructure Cluster (Poland), Automotive Cluster of Slovenia (Slovenia), Cluster of Industries of Culture and Free Time INRE (Poland), South Poland Cleantech Cluster Sp. z o.o. (Poland), Gdańsk Construction Cluster (Poland), BIM Cluster - Cluster of Information Technologies in Building Industry (Poland), Luxembourg Maritime Cluster, ICT Cluster Bern (Switzerland), Clusterland Sweden/Cluster 55 (Sweden), Health Capital Berlin-Brandenburg (Germany), Cap Digital (France), ArchEnerg Cluster International Renewable Energy and Building Trade Cluster (Hungary), INNOSKART ICT Cluster (Hungary), Wielkopolska ICT Cluster (Poland), LifeScience Cluster Krakow (Poland), Business Upper Austria - OÖ Wirtschaftsagentur GmbH (Austria), ClusterAgentur Baden-Wuerttemberg (Germany), bioPmed Healthcare Innovation Cluster (Germany)

4. Research results

Results of comparisons of all 5 main criteria to the main goal cluster initiatives management success are presented in the Figure 4.1. The comparison was made based on the geometrical means of all experts' responses. 'Super Decisions' software was used for the computation of all priorities. The priorities were calculated for all cluster initiatives represented in this study regardless of their development stage, type of industry or location. The highest rank was given to 'Integration and relationship building', including the following subcriteria: 'Development and implementation of internal communication systems'; 'Development of cluster's critical mass and management of partners' complementarities and interdependencies'; 'Integration - building partnerships inside the CI creation of interpersonal links, social networks, trust' and 'Building partnerships outside the CI, creation of external linkages and internationalization'.

Figure 4.1. Priorities of the main criteria in all studied cluster initiatives

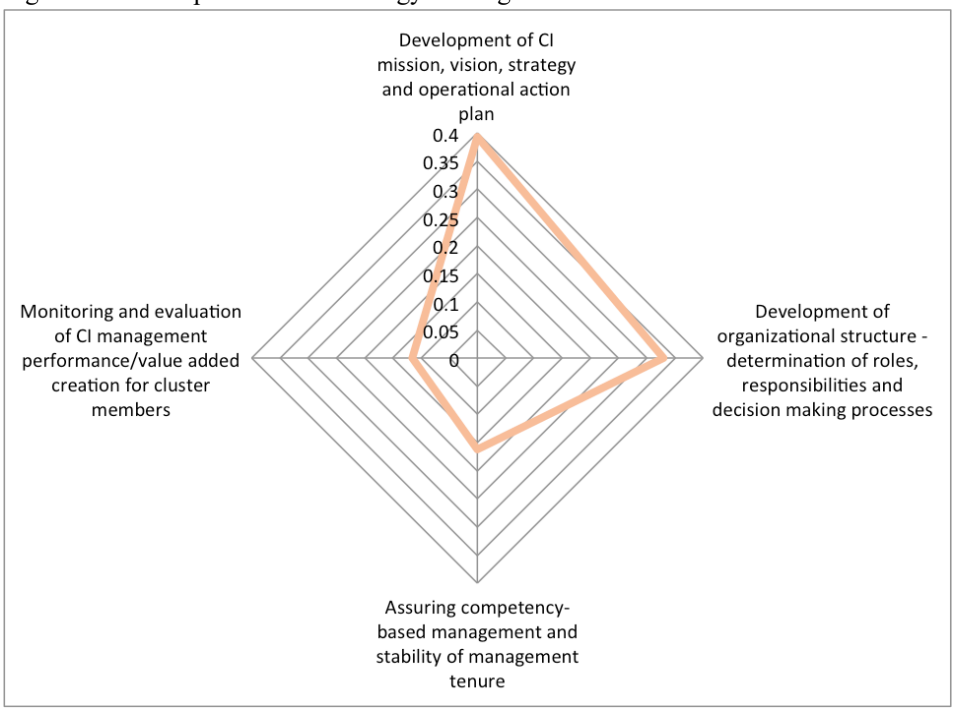


Source: Own work

'Integration and relationship building' was the most important critical success criterion of cluster initiatives management success, with 0.259 priority. The next, nearly equally high in relation to the main goal, was the 'Strategy and organization' criterion with 0.240 priority. The third most important criterion was 'Resource munificence' (P = 0.198), followed by only slightly less important criterion 'Joint actions management' (P = 0.175). The least important criterion of all five analyzed turned out to be 'Market exploration, learning & transformation routines' with priority P = 0.127.

In the next stage the subcriteria (success factors) within a given criteria (group of factors) were compared against each other in pairs. Figure 4.2 presents local priorities, the results of the comparison of all subcriteria against each other in pairs, in relation to 'Strategy and organization' criterion.

Figure 4.2. Local priorities of 'Strategy and organization' subcriteria

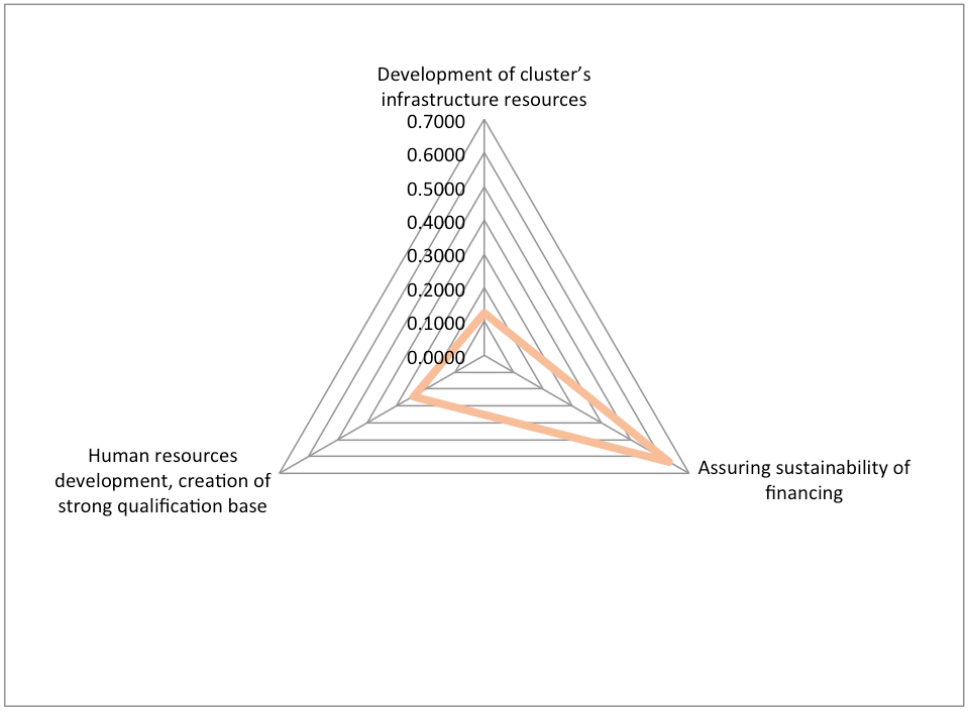


Source: own work

In this criterion the experts paid the greatest attention to 'Development of CI mission, vision, strategy and operational action plan' (P = 0.393) followed by 'Development of organizational structure - determination of roles, responsibilities and decision making processes' (P = 0.330). Third ranked 'Assuring competency-based management and stability of management tenure' received priority P = 0.163. Relatively least significant for 'Strategy and organization' success was 'Monitoring and evaluation of CI management performance/value added creation for cluster members' with priority P = 0.115.

The figure below presents the comparison of subcriteria against each other in pairs, in relation to 'Resource munificence'.

Figure 4.3. Local priorities of 'Resource munificence' subcriteria

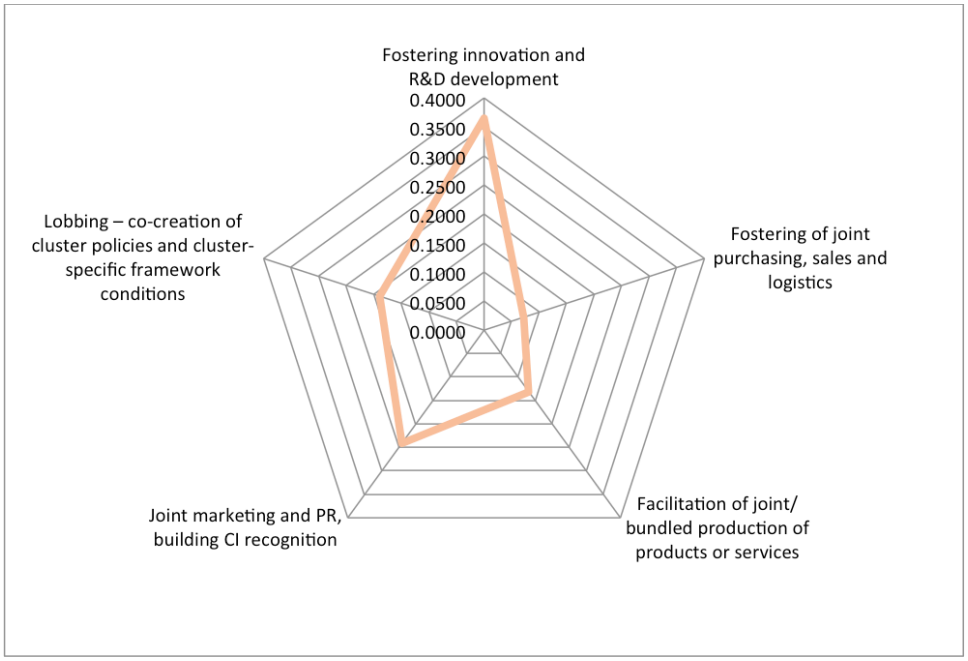


Source: own work

In the 'Resource munificence' criterion the experts paid the greatest attention to 'Assuring sustainability of financing' (P = 0.632). The next ranked subcriterion was 'Human resources development, creation of strong qualification base' with priority P = 0.243. The third criterion - 'Development of cluster's infrastructure resources' received the lowest priority P = 0.125.

The following figure presents the comparison of subcriteria against each other in pairs, in relation to 'Joint actions management'.

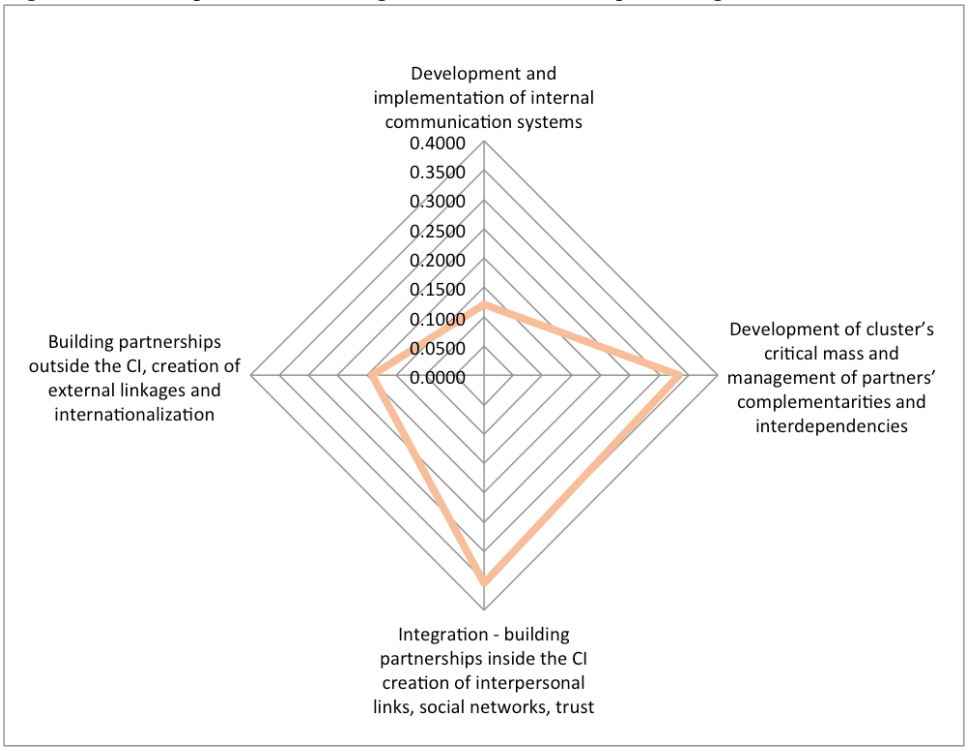
Figure 4.4. Local priorities of 'Joint actions management' subcriteria



Source: Own work

Within this group, the experts gave the highest priority to the 'Fostering innovation and R&D development' subcriterion (P = 0.364). The second most important subcriterion 'Joint marketing and PR building CI recognition' with priority (P = 0.241) was followed by 'Lobbing – co-creation of cluster policies and cluster-specific framework conditions' (P = 0.190). The two least important subcriteria: 'Facilitation of joint/bundled production of products or services' and 'Fostering of joint purchasing, sales and logistics' received accordingly P = 0.132 and P = 0.073.
The Figure 4.5 presents the comparison of subcriteria against each other in pairs, in relation to 'Integration and relationship building'.

Figure 4.5. Local priorities of 'Integration and relationship building' subcriteria

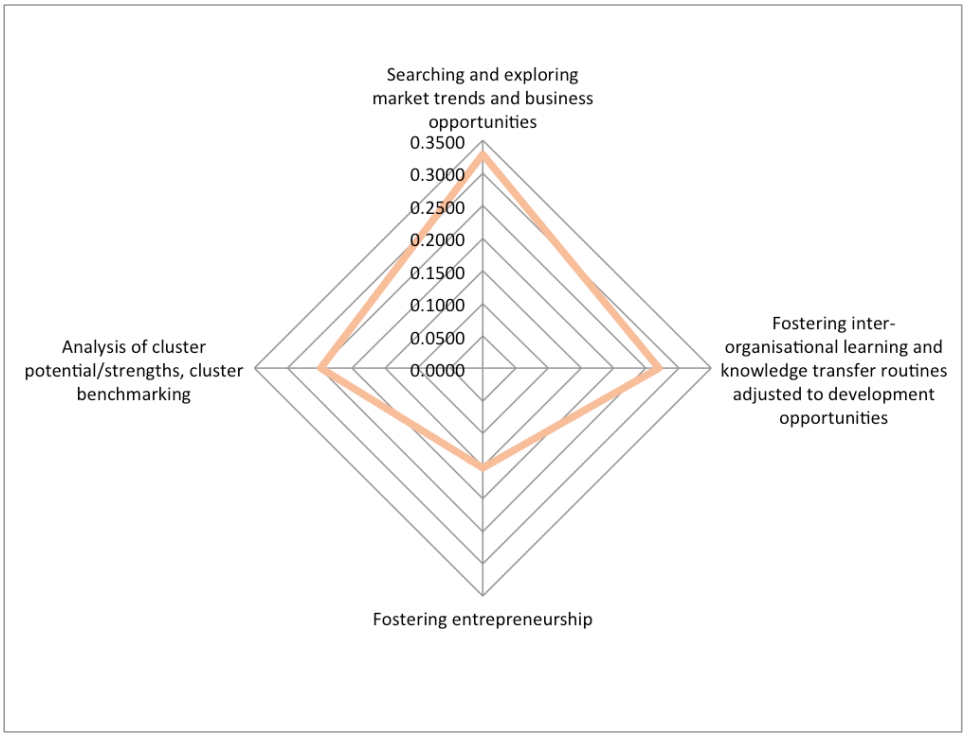


Source: Own work

Within this criterion experts assigned the highest priority to the subcriterion of 'Integration - building partnerships inside the CI creation of interpersonal links, social networks, trust' (P = 0.354). The second almost equally important subcriterion was 'Development of cluster's critical mass and management of partners' complementarities and interdependencies' with priority P = 0.334. The two least important subcriteria in this group: 'Building partnerships outside the CI, creation of external linkages and internationalization' and 'Development and implementation of internal communication systems' received accordingly P = 0.191 and P = 0.122.

The next figure presents the comparison of all subcriteria against each other in pairs, in relation to 'Market exploration, learning & transformation routines' criterion.

Figure 4.6. Local priorities of 'Market exploration, learning & transformation routines' subcriteria



Source: Own work

In this criterion the experts paid the greatest attention to 'Searching and exploring market trends and business opportunities' (P = 0.328) followed by 'Fostering inter-organisational learning and knowledge transfer routines adjusted to development opportunities' (P = 0.269). Third rank was given to 'Analysis of cluster potential/strengths, cluster benchmarking' with priority P = 0.249. Relatively least significant for market exploration's success was 'Fostering entrepreneurship' subcriterion with priority P = 0.153.

The magnitude of the global priority determines the percent of 'contribution' of the given subcriterion for overall cluster initiatives management success. In order to compute the exact influence of each subcriterion on the whole process of cluster initiatives management success for each subcriterion its global priority was estimated. The global priority means the individual influence of each subcriterion on the process of cluster initiatives management. To obtain it, the local priority of the main criterion was multiplied by the local priority of the given subcriterion according to the following formula:

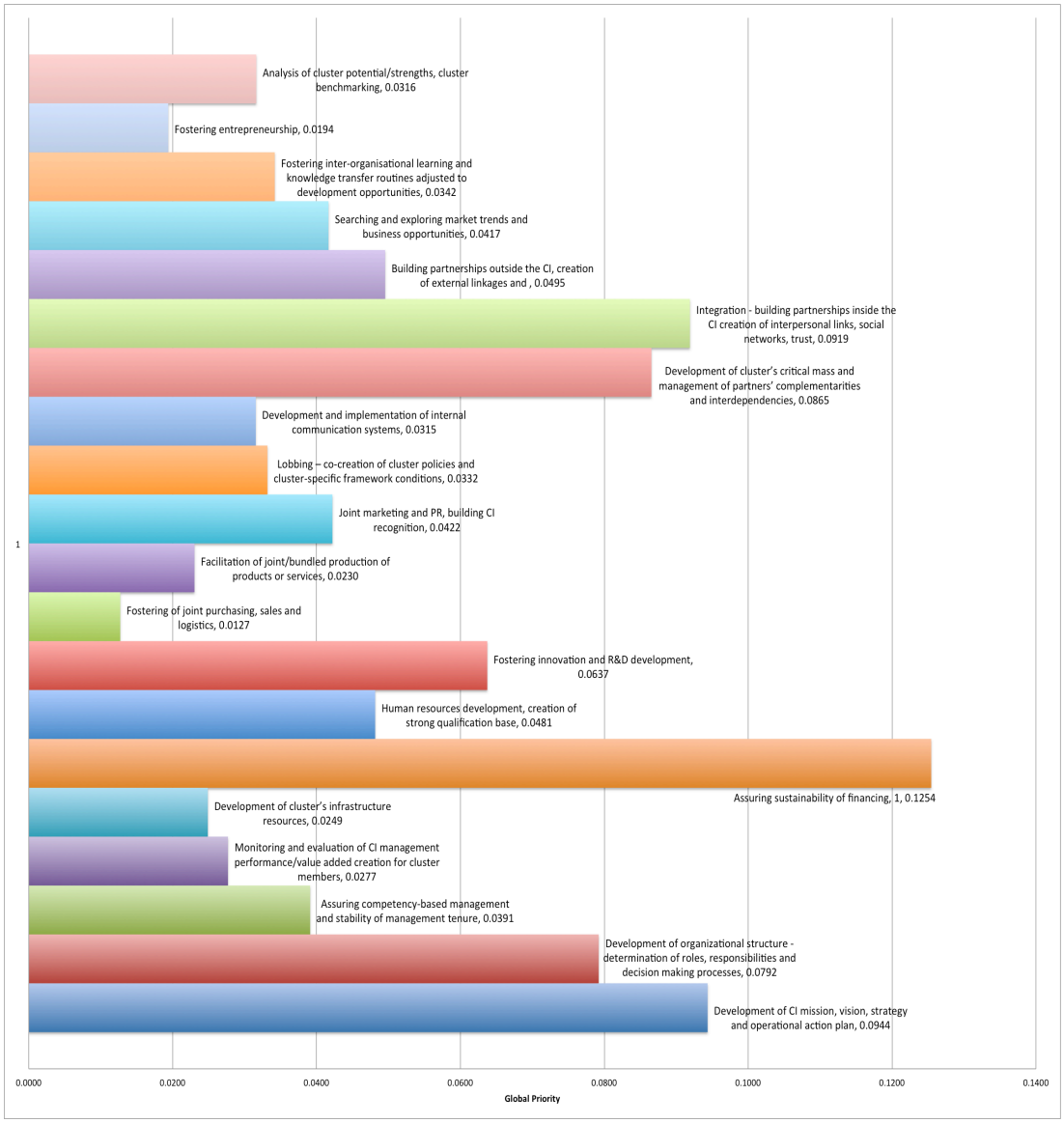
global weight (priority) of the j-thsubcriterion with regard to the i-th main criterion = [weight (priority) of the i-th criterion] x [local weight (priority) of the j-thsubcriterion with regard to the i-th criterion] *(1)*

Thus, for example, the global priority for 'Assuring sustainability of financing' was a result of the multiplication of the normalized local priority for 'Resource munificence' (P = 0.198) by the normalized local priority of 'Assuring sustainability of financing' (P = 0.632). The calculated global priority is thus equal to:

$P_g = 0.1985 \times 0.632 = 0.1254$ *(2)*

The Figure 4.7 presents the graphic visualization of all subcriteria global priorities indicated by interviewed cluster initiatives coordinators.

Figure 4.7. Global Priorities of all subcriteria in relation to the main goal



Source: Own work

According to Pareto's principle for many phenomena, 20% of invested input is responsible for 80% of the results obtained, in other words 80% of consequences are results of 20% of the causes. Taking this approach into consideration 20% of the highest ranked factors are responsible for 80% of overall cluster initiatives management success.

The top 20% ranked subcriteria were:

- Assuring sustainability of financing (P = 0.125);
- Development of CI' mission, vision, strategy and operational action plan (P = 0.094);
- Integration building partnerships inside the CI creation of interpersonal links, social networks, trust (P = 0.092);
- Development of cluster's critical mass and management of partners' complementarities and interdependencies (P = 0.086).

Joint importance of these 4 factors reached 40%, while the remaining 60% was distributed among 16 other factors. Identified Critical Success Factors of cluster initiatives management should be a basis for creation of the optimal model of cluster initiatives management and underline the areas of activity that require the most attention of governing bodies.

5. Conclusions

Cluster initiative success is a multidimensional process related to many factors. AHP analysis of collected data showed that there are chosen criteria and subcriteria that have more significant influence on cluster initiative management success than the others. The AHP based interviews conducted among European cluster managers representing 19 cluster initiatives located in 10 countries allowed to identify Critical Success Factors, which determine the key areas of activity and management focus. The research findings assigned 40% importance to the following 4 factors: 'Assuring sustainability of financing', 'Development of CI mission, vision, strategy and operational action plan', 'Integration building partnerships inside the CI, creation of interpersonal links, social networks, trust' and 'Development of cluster's critical mass and management of partners' complementarities and interdependencies', while the remaining 60% was distributed among 16 other factors. These priorities correspond with the V. Pareto's principle in which 20% of invested input is responsible for 80% of the results obtained.

The results of this study support more effective management and better organisation of cluster development processes. They are specifically tailored for entrepreneurs, willing to initiate or establishing cluster initiatives, as well as managers, responsible for CIs day-to-day operations and other CI stakeholders. They can also be utilized in the political area, as guidance for policy makers in redesigning policies of cluster initiatives support as well as monitoring and evaluation processes, so that they are based on identified CSFs.

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Present Health Status in Bangladesh: Challenges and Achievements

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Abstract
The health status in Bangladesh relies heavily on the government or the public sector for financing and setting overall policies and service delivery mechanisms. Based on a review of secondary data, the paper assesses the overall challenges and evaluates the current situations of health status and health care development in Bangladesh. Here non-empirical study will apply and the analysis will be made from the data and contents collected from various articles and journals published by various authors and released through various sources. This study revealed that Bangladesh had achieved notable improvements in health status by achieving health-related MDGs where infant or child mortality rate and maternal mortality rate have changed insignificantly than many other developing countries and rapidly improving on other key indicators including immunization coverage, and survival from some infectious diseases including malaria, tuberculosis, and diarrhea. However, Bangladesh faces a lot of challenges in its health care system. These challenges must be resolved to improve the existing health system so that the deprived and vulnerable people can get better access to basic health care services.

Keywords: Child Health, Communicable and Non-Communicable Diseases, Health Care, Health Status, Maternal Mortality, Ministry of Health and Family Planning (MOHFW)

Abbreviations: ANC: Antenatal Care; ICDDR, B: International Centre for Diarrhoeal Disease Research, Bangladesh; HPNSDP: Health, Population and Nutrition Sector Development Program; MDGs: Millennium Development Goals; MMR: Maternal Mortality Rate; SDGs: Sustainable Development Goals

1. Introduction

Health is a fundamental requirement to improve the quality of life. A nation's social and economic development depends on the state of health. A large number of Bangladesh's people, particularly in rural areas and urban slum areas, remained with no or little access to health care facilities (Islam and Ullah, 2009). Health systems and policies have many challenges and barriers in Bangladesh. The main challenge is the lack of participation and accession of the mass population in health service. This challenge has many extent and complexities on the overall development of the health system and policy in Bangladesh. Lack of education among general people is

also an influential challenge or barrier in the development of the health sector. Administrative factors could play a significant role in increasing the people's participation and awareness in Bangladesh's health sector (Islam and Ullah, 2009).This study reveals the present health status and its achievements in Bangladesh.

The health system of Bangladesh is a pluralistic system with four key actors that define the structure and function of the system: government, private sector, non-governmental organizations (NGOs) and donor agencies (Ahmed, et al. 2015). The Government or public sector is the first key actor who by the constitution, is responsible not only for policy and regulation but for the provision of comprehensive health services, including financing and employment of entire health staff. The Ministry of Health and Family Welfare, through the two Directorates-General of Health Services (DGHS) and Family Planning (DGFP), manages a dual system of general health and family planning services through district hospitals, Upazila Health Complexes (with 10 to 50 beds) at sub-district level, Union Health and Family Welfare Centers at union level, and community clinics at ward level. In addition, the Ministry of Local Government, Rural Development and Cooperatives manage the provision of urban primary care services. Quality of services at these facilities, however, is quite low due to insufficient allocation of resources, institutional limitations and absence or negligence of providers.

In 2017 the total number of hospitals in Bangladesh was 6237. Of these 6237 hospitals, 1214 were government hospitals and 5013 were non-governmental (BBS, 2017). Moreover, services in private and public hospitals are not the same standard and category. In both public and private hospitals have many challenges besides some opportunities for both doctors and patients. Generally, private hospitals are too much expensive in most of the cases poor people cannot get support or admit into in the private hospitals like Appollo, Popular Diagnostics Centre, Square, Lab aid, etc. most renounced hospitals in Bangladesh. On the other hand, the quality of service in the public hospitals is not so standard and people-oriented. In both of the two cases for both doctors and patients have many challenges besides a small opportunity (Bangladesh Health Watch, 2016).

Although a very little number of studies have been done on this issue, most previous studies have only focused on the evaluation of the health care system in Bangladesh. No previous study has investigated the present health status under different health care systems like the Ministry of Health and Family Welfare (MOHFW) in Bangladesh elaborately. Therefore, this study will discuss a comprehensive explanation of recent trends in health status and trends in Bangladesh.

The main objective of this study is to describe and evaluate the current situations of health status and health care development in Bangladesh. The issues of health care and services have achieved an important issue in Bangladesh, especially when Bangladesh has made significant changes within the health-related MDGs like infant or child mortality rate and maternal mortality rate than many other developing countries and now on the new track of SDGs. This study also makes a comparative analysis of main health indicators among some Asian countries, including Bangladesh.

The paper is organized as follows. The recent health status of Bangladesh is presented in section 2. Here we elaborately discuss different health issues like child health, maternal health, communicable, and non-communicable diseases. Section 3 presents an overview of a few physical characteristics of the households in Bangladesh, while section 4 discusses shortly comparison of health indicators of selected South Asian countries. Finally, the conclusion of this work is presented in section 5.

1.1 Methodology

This paper is based on an extensive review of published and unpublished data and information on the health system in Bangladesh. These include relevant annual as well as special reports of different years by the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the World Bank, Bangladesh Bureau of Statistics, National Institution of Population Research and Training (NIPORT), Ministry of Health and Family Planning (MOHFW) and the Bangladesh Health Watch Reports by the Directorate General of Health Services as well as that of other national and international agencies were also considered. Articles and research

papers published in social science and scientific journals were also reviewed. In short, the paper is a review article based on secondary data.

On the other hand, the study will be referring to several other literatures on the current health service situation in Bangladesh published by various sources. In this study, the non-empirical study will apply and the analysis will be made from the data and contents collected from various articles and journals published by various authors and released through various sources. The references of those will be given in the reference part.

2. Health Status in Bangladesh

Bangladesh is the most densely populated country in the world with a population estimated at 167 million, and a population density of more than 1290 people per square kilometer (Worldometers, 2019). About 64 percent of people live in rural areas.

Table 1: Trends in population/demographic indicators, selected years

Indicator	1970	1980	1990	2000	2010	2017
Total population (million)	66 309	82 498	107 386	132 383	151 125	157 826 (July 2017 est.)
Population aged 0–14 (% of total)	44.7	44.4	42.1	37	31.7	27.76
Population aged 15–64 (% of total)	51.9	52	54.2	59	63.7	65.02
Population aged 65 plus (% of total)	3.5	3.6	3.7	4.1	4.6	6.23
Population growth (%/year)	2.4	2.8	2.5	1.8	1.1	1.04
Population density (people/sq.km)	509.4	633.8	825	1017	1161	1265
Fertility rate (TFR)	6.9	6.4	4.6	3.1	2.3	2.17
Crude birth rate / 1000	47	43.1	35.1	27	20.9	18.8
Crude death rate /1000	19.2	13.8	10.1	7.2	5.9	5.4
Age dependency ratio (% of working age population)	92.9	92.3	84.5	69.6	56.9	50.3
Proportion population urban (% of total population)	3.6	6.3	9.0	11.2	14.4	35.8

Source: http://publications.worldbank.org/WDI/indicators

Another trend is the rapid rate of urbanization. Natural disasters, small size and low productivity of land andrural unemployment, and the surplus agricultural labour force in rural areas are reported as keyfactors contributing to the movement of people from rural to urban areas. Bangladesh hasexperienced one of the highest urban population growth rates (nearly 7 percent per year inthe urban slums) in the last three decades, with about 35.8 percent of the population nowliving in urban areas (Bangladesh Demographics Profile, 2018).

An analysis of the health in Bangladesh shows that the health status of the country's population has improved substantially over the past decade. Life expectancy at birth increased by 8.4 years from 2000-2017 (BBS, 2017). This happened due to the steady decline in childhood and maternal mortality. Between 1999-2003 and 2010-2017, under-5 mortality declined from 88 to 38 deaths per 1,000 live births (BBS, 2017). Maternal mortality also declined by 26 percent from 322 to 196 deaths per 100,000 live births between 2001 and 2016 (BMMS, 2016). As a result, Bangladesh has achieved its Millennium Development Goal (MDG) 4 target for under-5 mortality (48 deaths per 1,000 live births) and was expected to achieve its MDG 5 target for maternal mortality (143 deaths per 100,000 live births) by 2015. But the MMR in Bangladesh declined between 2001 and 2010 but has now stalled. Evidence suggests that changes in fertility behavior have been one of the major contributors to the steady decrease in mortality. Between 2000 and 2011, the total fertility rate in Bangladesh declined by a child from 3.3 in 1999- 2000 to 2.3 in 2011 (NIPORT, 2013) and in 2017 (NIPORT, 2018), it was 2.17 which is

remarkable progress, related to fertility reduction; increased access to maternal health care; increased use of maternal health services in the antenatal, delivery, and postpartum periods and socioeconomic improvements.

Bangladesh has also sustained an amazingly rapid reduction in the rate of a child under nutrition in the last two decades. The 2014 Bangladesh Demographic and Health Survey (BDHS) showed that Bangladesh had already achieved MDG 1 target for underweight among under-5 children (33 percent), according to the National Center for Health Statistics (NCHS) reference. Bangladesh is only 2 percentage points short of reaching the MDG 1 target for underweight with the WHO reference (BDHS, 2014). Rapid wealth accumulation and large gains in parental education are the two largest drivers of such accomplishment, although health, sanitation, and demographic factors have played significant secondary roles (Headey et al., 2015). Despite these achievements, Bangladesh continues to carry a high burden of disease that includes non-communicable diseases (NCDs), tuberculosis, respiratory infections, and neuropsychiatric conditions. As a country, Bangladesh is committed to addressing such health problems.

Table 2: Mortality and health indicators

Indicator	1970	1980	1990	2000	2010	2017
Life expectancy at birth, total (years)	42	55	59	65	69	73.4
Life expectancy at birth, female (years)	44	54	59	65	69	75.6
Life expectancy at birth, male (years)	40	56	60	65	68	71.3
Mortality rate, adult, female (per 1000 female adults)	-	-	-	171	137	107(2016 est.)
Mortality rate, adult, male (per 1000 male adults)	-	-	-	179	163	148(2016 est.)
Adolescent fertility rate (per 1000 women ages 15–19)	-	195.38	163.68	116.63	83.83	84
Infant mortality rate (per 1000 live births)	-	133	99.5	64.2	37.5	31.7
Neonatal mortality rate (per 1000 live births)	-	-	54.1	40.7	27	18
Under-5 mortality rate (per 1000 live births)	-	197.8	143.6	87.7	47.2	32.4
Maternal mortality ratio (per 100 000 live births)	-	-	551.9	322	194	196 (2016 est.)

Source: http://publications.worldbank.org/WDI/indicators, BBS, 2018; Bangladesh Maternal Mortality and Health Care Survey 2016

2.1 Recent trends in health status

2.1.1 Gender equity in the health sector

In 2001, MOHFW adopted its Gender Equity Strategy (MOHFW, 2001) for the Health and Population Sector Programme (HPSP). This was the first Gender Equity Strategy of MOHFW and was designed to provide coordination to the efforts of health planners and providers in identifying and dealing with gender equity issues in planning and implementing health policy. Later than, Gender Equity Strategy (GES) 2014 has been developed for a period of 10 years, (2014-2024) and the primary goals are to professionals' awareness of the role of gender norms, principles, and equity in development of health and nutritional status, and to promote the gender perspectives in different health development plans and programs with a view to achieving gender equity in health.

The goal of the GES 2014 is "to improve the health of the people of Bangladesh through better utilization of services especially for women, children, adolescents, socially excluded and geographically marginalized population and the poor." According to the Human Development Report 2018, Bangladesh ranked 134 out of

160 countries of the world in terms of the Gender Inequality Index in 2017, which is developed on the status of three elements: a) Reproductive health b) Empowerment; and c) the labour market.

2.1.2 Child and infant health

Bangladesh has succeeded in reducing under-five mortality by almost 70 percent, from 146 deaths per 1,000 live births in 1991 to 38 in 2017, has achieved the Millennium Development Goal 4 target—48 deaths per 1,000 live births by 2015—ahead of time (table 1). Bangladesh was one among only 19 countries that are on track, and it has the highest rate of decline among low-income countries.

Bangladesh Demographic and Health Survey (BDHS) data also show that the neonatal mortality rate declined from 54 per 1,000 live births in 1991to 18 in 2017, showing progress overall but at a much lower rate compared with the under-five and infant mortality rates.

In the last two decades, under-5 and infant mortality declined by 65 percent and 56 percent, respectively. Neonatal mortality declined by 46 percent, while postneonatal mortality fell by 71 percent. The perinatal mortality rate is 44 deaths per 1,000 pregnancies (BDHS, 2011).

Only 37 percent of children receive appropriate care within 24 hours of birth and the challenge is that 62 percent of births occur in the home (BDHS, 2011). While it is difficult to determine trends with respect to low birth weight, it is estimated that about 40 percent of perinatal deaths are associated with low birth weight. There is no longer a notable difference in the post-neonatal mortality rates of male and female children (BDHS, 2007). Perinatal mortality is highest in the first pregnancy (51 deaths per 1,000 pregnancies). Overall, perinatal mortality has a negative association with the mother's education and wealth status (BDHS, 2014).

Figure 1: Reproductive, maternal, newborn and child health coverage (Latest available data 2010-17)

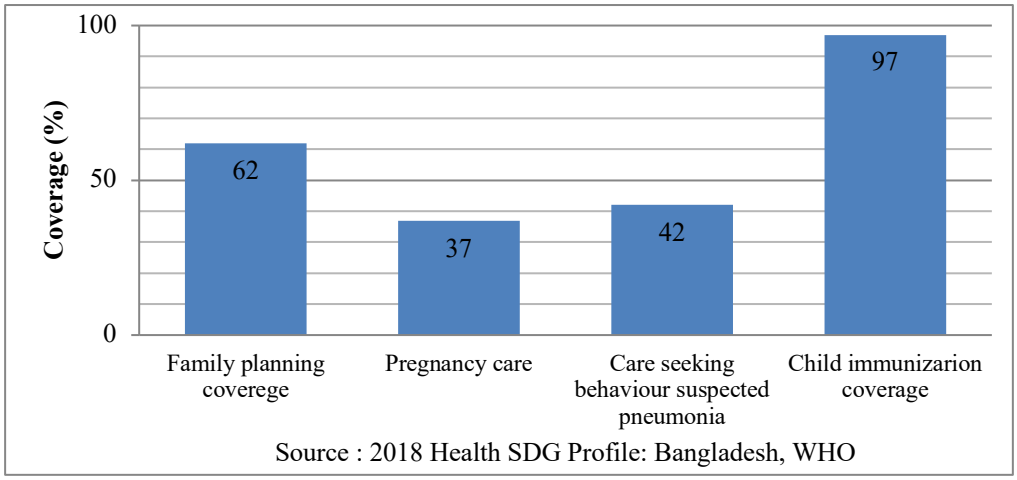


Table 3 shows that Bangladesh made a successful story of child immunization and coverage of vitamin A capsule in the last couple of years. The Expanded Programme on Immunization (EPI) in Bangladesh has had a large effect on vaccine-preventable illnesses and almost 90 % of children are now under the vaccination coverage. The current status of vitamin A supplementation raises concern because the Ministry of Health and Family Welfare (MOHFW)'s Health, Population and Nutrition Sector Development Program (HPNSDP) 2011-2016 was the target of 90 percent needed to be achieved during 2016 (MOHFW, 2011).

Table 3: Child and maternal health coverage

Coverage of vitamin A capsule (EPI CES, 2016)	Vitamin A coverage: Infant (6-11 months) 86.1%; Children (12-59 months) 91.3%; Postpartum women 37.8%
Immunization (valid vaccination	≤12 months old children: BCG 99.5%; OPV1 97.8%; OPV2 97.0%;

coverage) (EPI-CES, 2016)	OPV3 90.1%; Penta1 97.8%; Penta2 97.0%; Penta3 90.1%; MR1 87.5%; Full vaccination 82.3% ≤23 months old children: BCG 99.5%; OPV1 97.9%; OPV2 97.2%; OPV3 90.4%; Penta1 97.9%; Penta2 97.2%; Penta3 90.4%; MR1 92.3%; Full vaccination 86.8%
Family planning	Contraceptive prevalence rate (%): 62.3 (SVRS, 2016) Contraceptive prevalence rate (modern methods) in %: 58.4 (SVRS, 2016) Unmet need for family planning (%): 12.0 (BDHS, 2014)
HIV/AIDS (ASP, 2017)	Antiretroviral treatment (ART) coverage among adults needing ART in 2016: 44.5% HIV prevalence among key populations in 2016: Less than 1% People living with HIV (PLHIV) in 2016: 4,721

Source: Health Bulletin 2017

2.1.3 Maternal health

Despite the early and significant decline in the maternal mortality ratio in Bangladesh from 574 in 1990 to 320 in 2001, there was a main concern that this rate of decline had not been sustained. Between BMMS (Bangladesh Maternal Mortality Survey) 2001 and BMMS 2010, MMR (maternal mortality rate) declined significantly: from 322 to 194 maternal deaths per 100,000 live births. This decline was evidence of significant progress linked to fertility reduction; access to qualified maternal health care; increased use of maternal health services in the antenatal, delivery, and postpartum periods; and socioeconomic and infrastructural improvements (Arifeen et al., 2014).

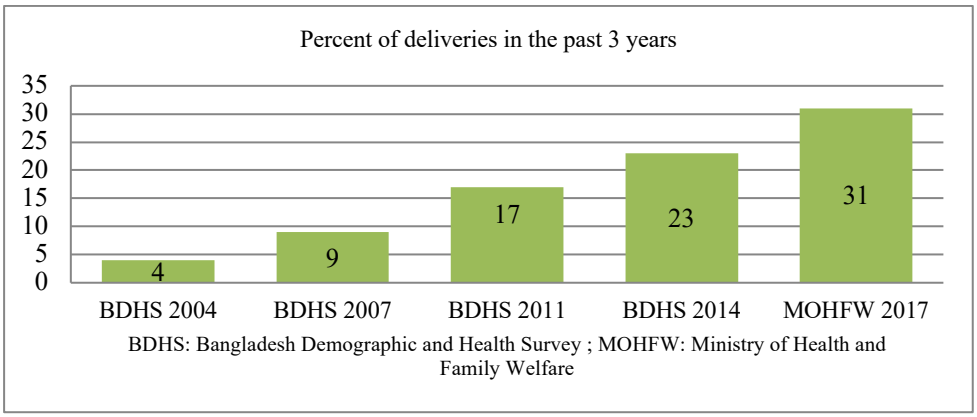
The MMR in Bangladesh declined between 2001 and 2010 but has now stalled, although Bangladeshi women are increasingly seeking maternal care from health facilities (BMMS, 2016). The MMR estimate from the BMMS 2016 in 196 maternal deaths per 100,000 live births, almost identical to the estimate of BMMS 2010. Bangladesh is not the only country that has experienced increased utilization of maternal services with no impact on MMR. There is international preference for a stall in MMR decline in low- and middle-income countries, even with increased care in facilities. An analysis of 37 countries in sub-Saharan Africa (SSA) and South and Southeast Asia (SSEA) found a weak association between the MMR and the percentage of deliveries occurring in a health facility (Hasib, 2017).

Bangladesh has made rapid progress in increasing the number of births attended by medically trained attendants. In 2016, 50 percent of births were attended by medically trained personnel, compared to 27 percent in 2010. Between 2010 and 2016, more women across Bangladesh delivered their babies in healthcare facilities. The percentage of births in health facilities increased from 23 percent in 2010 to 47 percent in 2016. Now, about 1.46 million births occur in health facilities every year (BMMS, 2016).

The risk of maternal death is high among first-time mothers (215 per 100,000 live births) as well as for parities 4 or higher. Hemorrhage was the most common cause of maternal mortality, followed by eclampsia, indirect causes, and abortion-related complications. Hemorrhage and eclampsia account for 54% of all maternal deaths in BMMS 2016, slightly higher than in BMMS 2010 (51%).

The private sector is now the most prominent source of ANC, both in urban and rural areas. Overall, 58 percent of ANC seekers went to the private sector to receive checkups, while 36 percent used the public sector. A notable proportion of pregnant women (22 percent) were receiving ANC at home.

Figure 2: Trends in birth delivered by C- section (2004-2016)



Bangladesh achieved the HPNSDP target of 50 percent of births attended by a medically trained provider by 2016. Deliveries by Cesarean section (C-section) increased from 12 percent to 31 percent during 2016. Eighty-three percent of births in private facilities are by C-section (MOHFW, 2015). Moreover, Bangladesh is facing a massive boom in the number of medically unnecessary C-sections - between 2016 and 2018 the number of operations increased by 51 percent (Save the Children, 2019).

2.1.4 Communicable diseases

In Bangladesh, the Communicable diseases—though decreasing in terms of the proportion of the overall burden of disease—continue to cause about 20 percent of overall mortality and morbidity in Bangladesh. The spread of communicable diseases is under good control due to comprehensive preventive measures and improved treatment protocols. Bacterial and protozoal diarrhea, hepatitis A and E, and typhoid fever are major food or waterborne diseases in Bangladesh**.** Dengue fever and malaria are high risks in some locations (Bangladesh Demographics Profile, 2018).

Tuberculosis (TB) is a major public health problem in Bangladesh. WHO's data estimate that TB has been accounted for 3.3 percent of all deaths in Bangladesh in 2012 (WHO 2012). While the prevalence of tuberculosis (TB) has declined substantially, Bangladesh still ranks among the top ten countries in the world with the highest TB burden. The disease is found primarily among the poor and least educated populations. After the National TB Prevalence Survey (2015-2016), the revised estimates by WHO for incidence and prevalence rates of all forms of tuberculosis in 2016 are 221 and 260 per 100,000 people, respectively. It is further estimated that about 40 per 100 000 people died of TB in the same year. Remarkable progress in TB control has been made in terms of DOTS (Directly-observed treatment-short course) coverage, detection of TB cases and treatment success since the introduction of DOTS in 1993.

Acute respiratory infection (ARI), particularly pneumonia, is the leading cause of communicable disease mortality (10 percent) and morbidity (7 percent) in Bangladesh, accounting for about a third of all deaths annually among children less than five years of age (Bangladesh Demographics Profile, 2018). According to the World Health Organization, nearly 400 children die each day from ARIs in Bangladesh. Pneumonia, infection, and birth asphyxia are major causes of under-five deaths in this country.ARIs were also accountable for about 39% of total pediatric hospital admissions and, 40 to 60% of the total pediatric outpatient department visits in Bangladesh (Kabir, 2016).

Diarrhoeal disease is also a leading cause of significant morbidity and mortality, accounting for 2.7 percent of all mortality in Bangladesh (WHO, 2012). In the last five years, approximately 12.9 million patients had visited health facilities for seeking care, while at least 115 patients died (MOHFW, 2017). Diarrhoeal diseases are one

of the major causes of hospitalization among under-five children in Bangladesh. According to the latest hospital-based surveillance in Bangladesh, childhood Diarrhoeal diseases were responsible for 40% and 18% of hospital admissions in sub-district and district-level hospitals, respectively, while at least 7% of under-five children were admitted to the medical college hospitals (MOHFW, 2017). The deaths due to diarrhea decreased almost each year but drastically from 2007 to 2015. The amazing reduction in diarrhea-related mortality over the last few years proves the effectiveness of the strategies adopted, which include the provision of early oral rehydration at the household level.

As one of the major public health problems in Bangladesh, malaria is endemic in 13 eastern and north-eastern border districts, a total of 17.52 million people living in these areas are at risk of malaria (Haque et al., 2009). Bangladesh has made significant progress against malaria. The annual malaria incidence declined from 7.77 per 1000 population in 2008 to 1.58 per 1000 population in 2016 and severe malaria gradually decreased by 78% from 2008 to 2016 (Laskar, 2017). However, about 17 million people still at risk from the disease, Bangladesh has a long way to go until elimination. The revised strategy has been drafted to ensure alignment with the WHO *Global technical strategy for malaria (2016–2030).* This will also greatly contribute towards overall national development and the Sustainable Development Goals (SDGs). As part of the new plan, Bangladesh aims to achieve a "malaria-free Bangladesh by 2030" (APLMA, 2017)**.**

HIV prevalence in Bangladesh is low and remains a concentrated epidemic because of the high prevalence in neighboring countries and the high mobility of people within and beyond the country. Inadequacy incorrect knowledge about HIV and AIDS due to illiteracy, ignorance, and gender inequity intensify the vulnerability. In total, 578 new HIV infections have been detected in 2016, in which the total number of detected cases was 4,721 (MOHFW, 2017). Over the last 10-15 years, dengue fever and dengue hemorrhagic fever have become the leading causes of hospitalization and deaths among both children and adults in South-East Asian regions. A similar situation can be seen in other countries, such as India and Sri Lanka, where DENV3 (prevalent serotypes of dengue) have been reported most of the time in dengue-related illnesses (MOHFW 2018). As a dengue-like disease, Chikungunya fever, Zika Virus, Filaruasis, Kala-azar are emerging alarmingly in the country in recent years.

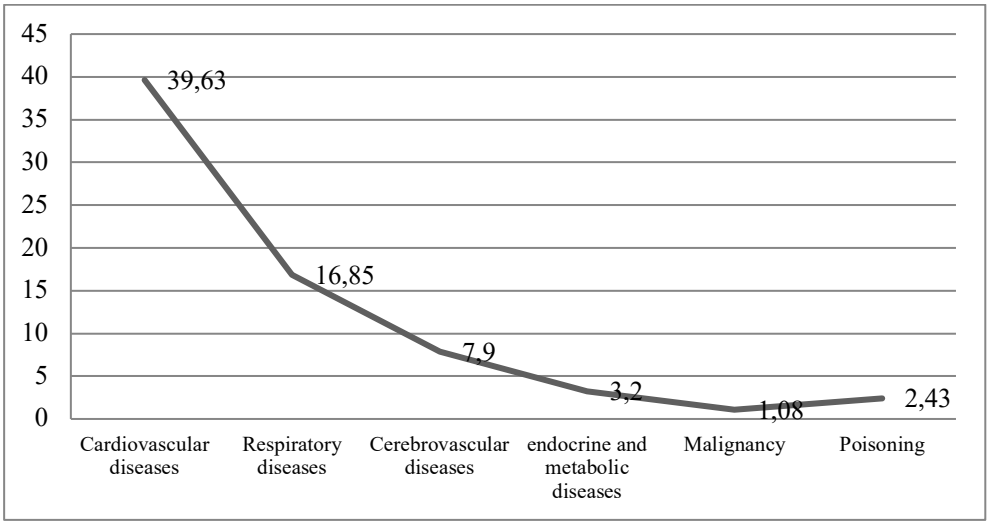
2.1.5 Non-communicable diseases

Non-communicable diseases (NCDs) are the most well-known cause of morbidity and mortality worldwide. Like many other developing countries, in Bangladesh also non-communicable diseases (NCDs) are emerging as a major cause of morbidity and mortality, accounting for 61% of all deaths (D. Iam et al., 2013). The most common NCDs in Bangladesh include cardiovascular diseases, diabetes mellitus, cancer and chronic respiratory diseases. These diseases are increasing in Bangladesh as the population becomes more urbanized. In the first national survey (2011) to measure blood pressure and blood glucose, about one in three women and about one in five men age 35 and older has elevated blood pressure and roughly one in ten has elevated blood glucose, an indication of diabetes (BDHS, 2011). Cancer is the sixth leading cause of death in Bangladesh, accounting for more than 150,000 deaths annually (Eminence, 2013).

Cardiovascular disease, particularly ischaemic heart and cerebrovascular disease (stroke), unintentional injury, cancer, and chronic obstructive pulmonary disease were among the top 10 causes of death in 2004. Further, a study published in 2009 (Karar, 2009) in medical college hospitals observed that about one-third of admissions were due to major NCDs for patients aged 30 or above.

According to ICDDR, B 2015, in South Asia**,** NCDs account for around half of annual mortality and burden of disease.NCDs account for an estimated 59% of total deaths in Bangladesh – 886,000 deaths a year.In Bangladesh, 48% of men smoke; 20% of men and 32% of women have raised blood pressure.There were **7**.1 million cases of diabetes in 2015 and a further 3.7 million cases may go undiagnosed.An estimated 129,000 deaths were attributed to diabetes in 2015 (ICDDR, B, 2019).

Figure 3: National Trends in major causes of mortality among patients aged above five years during 2016



Source: District Health Information System software version 2, 2018

Respiratory tract infections were the topmost causes of mortality among under-five children nationwide in 2016. Other causes of mortality were asphyxia, sepsis, low birth weight, etc.The figure shows the major causes of mortality among patients aged above five years nationally in 2016 in percentages. Pregnancy and associated complications were the least, and cardiovascular disease was the highest cause of mortality.Other major causes were diseases of the respiratory system, cerebrovascular diseases, infectious diseases, poisoning, injury due to assaults and accidents, etc. (Sultana et al., 2015). This implies that a common scenario in mortality profile among patients aged above 5 years was reflected from both medical college hospitals and district-level hospitals.

3. Household Facilities

This section presents an overview of a few physical characteristics of the households, which reflect the general well-being and socio-economic status of the members of the households. The information provided includes such facilities as sources of drinking water, sources of fuels, and sources of electricity, toilet facility. Bangladesh society is primarily a dominant male society and as a consequence of this, most families are headed by males (BBS, 2017). It is well-documented that women almost everywhere are disadvantaged relative to men in their access to asset, credit, employment, and education. Consequently, it is often suspected that female-headed households are poorer than male-headed households, and are less able to invest in the health and education of their children (Folbre 1991, UNDP 1995, United Nations 1996, World Bank 2001). However, this feature is changing over time.

Table 4: Household characteristics and utilities of Bangladesh

Household size (no. of persons):	4.3 Male- headed (%): 87.2 Female-headed (%): 12.8
Water and Sanitation (% households):	Drinking – water: Access to tap and tube well water 98% Toilet facility (%): Sanitary 75; others 22.3; Open defecation 2.7
Sources of light(% households)	Kerosene: total 13.0; rural 18.9; urban 5.8 Electricity: total 81.2; rural 71.4; urban 93 Solar: Total 5.6; rural 9.5 urban 1.0 Others: total 0.2; rural 0.2; urban 0.2
Information technology	Internet subscribers: Total 67.245 million Mobile internet 63.120 million WiMAX 0.089 million ISP+PSTN 4.036 million
	Mobile phone subscribers: 129.584 million

Source: BBS, Health Bulletin 2017

4. Comparison of Health Indicators of Selected South Asian Countries

During the past 50 years Bangladesh has made remarkable improvements in life expectancy, child health (Table 5), literacy and disaster preparedness (Balabanovaet al., 2013), Bangladesh has made more notable gains in a number of indicators than some of its neighboring countries which have higher per capita income. For instance, GDP per capita in Bangladesh ($4200) are almost half that of India ($7200) in 2017, and lower than that Pakistan ($5400), yet average life expectancy, percentage of children immunized against various communicable diseases, family planning method and the literacy rate for young women are higher in Bangladesh than in Pakistan and in India (Basu, 2018). In the three decades between 1990 and 2017, under-five mortality has fallen by more than 75%, while infant mortality and neonatal mortality have declined by around half (Table below). The under-five mortality rate (32.4 deaths per 1000) in Bangladesh is significantly lower than India (39.4 per 1000) and Pakistan (74.9 per 1000) (World Bank, 2019).

Table 5: Comparison of health indicators of selected South Asian countries, 2018

Country	Life expectancy at birth (year)	Infant mortality rate (per 1,000 live births)	Births skilled attendant (%)	Contraceptive prevalence (%)
Bangladesh	72	34.2	50	72.5
India	69	43.0	86	72.0
Pakistan	66	78.8	55	47.0
Srilanka	75	9.4	99	74.1
Nepal	70	34.5	58	56.1

Source: World Health Statistics 2018, WHO

5. Conclusion

Despite many challenges, population health outcomes have shown marked improvement, with falls in maternal, infant and under-five mortality rates, and significant reductions in total fertility rate. In comparison with MDG targets, infant and under-five mortality and total fertility are already to reach; maternal mortality and prevalence of underweight are not so satisfactory despite significant reductions, while targets for HIV, malaria, and TB are still potentially achievable. These outcomes have been achieved by improvements in coverage with key interventions, such as delivery in a health facility, childhood immunization, and management of diarrhea with oral rehydration salts, and treatment success rates for TB. However, the provision and coverage of services for the growing burden of non-communicable diseases is just a good start. Quality of care in both public and private services is poor, with little consideration of the quality of provider care, low levels of professional knowledge, and poor application.

Bangladesh has set a surprising example of gaining good health at a very low cost and has been proposed as a role model for other developing countries in the region (Ahmed et al., 2015). While the gains in health have been credited to the Ministry of Health and Family Welfare, the progress of other ministries relevant to public health accelerated the success of the overall health agenda of the Government. It is a contradiction that despite the lack of coordination of the health ministry with other sectors, a number of vertical health programmes, particularly in preventive care such as immunization, control of diarrhea, TB and other emerging infectious diseases have been sustained successfully over a long period, impacting positively on health outcomes. Moreover, Bangladesh has made more notable gains in a number of indicators than some of its neighbours with higher per capita income, such as India and Pakistan.

Bangladesh has successfully applied IT to its information and management systems to ensure they are easily accessible for performance assessment of specific programmes at least up to the sub-district level. Overall, the Bangladesh health system would contribute to the improvement of the health of the population and fulfill the Government's mission to achieve complete health coverage within the anticipated future.

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Effect of Organizational Culture on Employee Performance in Selected Deposit Money Banks in Enugu State

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Abstract
This study determined the effect of organizational culture on employee performance in deposit money banks in Enugu State, Nigeria. Specifically, the study intent to: ascertain the extent bureaucratic culture has significant influence on employees' performance of deposit money banks and determine whether innovative culture has significant influence on employees' performance of deposit money banks. Survey research design was employed for this study. The data were collected through the questionnaires administered to the respondents. The formulated hypotheses were tested with regression analysis. The result shows that bureaucratic culture does not significantly affect employee performance of deposit money banks. Another finding is that innovative culture has significant affect employee performance of deposit money banks. The study therefore, recommended among other things that the management of deposit money banks should develop cultures that will enhance performance, having the interest of their customers and employees at heart.

Keywords: Organizational Culture, Employee Performance, Bureaucratic Culture and Innovative Culture

1. INTRODUCTION

The idea that organizations can have a culture that affects the performance of its employees started when scholars within the field of sociology responded to Max Weber's theory of bureaucracy (Nier, 2009). During the period of economic recession, the issues of maximizing output are essential to shareholders. Organization realizes that it is the employees that make businesses work and that the culture of an organisation connects employees to the organisation. This led in the idea that maximizing an employee's performance in organizations needs the execution of policies, practices, and procedures that match the employee's needs (Isa, Ugheoke & Noor, 2016).

Although the writing on organisational culture and its alliance with organisational performance are wealthily varied, there is a small amount of study that really examines the concept of this connection. Culture has been set up as the main factor to be considered through in organisational life along with its positive impact on the success of the organizational performance (Durgadevi & Vasantha, 2017). Because it is evolved through the organisation

culture in array to sway the behaviour and attitude of the employees, organisational culture depends on the views and characteristics of the employees working in the organisation. In an effort to have a better understanding, many cultural typologies have been developed, because a particular type of culture produces a different outcome and the overall performance of an organisation is subject to the extent to which the values of the cultures are extensively shared (Ogbonna & Harris, 2000). For instance, the competing value framework (CVF) classifies organisational culture into four cultural categories, such as clan, adhocracy, market, and hierarchy (Quinn & Robert 2011; Tseng, 2010). The hierarchical culture has an unambiguous organisational structure, standardized policy and procedures, stringent control, and well-defined responsibilities. Gu, Hoffman, Cao, and Schniederjans (2014) classify organisational culture into four dimensions, such as leadership ability to take risks, tolerance, results-oriented, institutional collectivism, and positive work environment. Other researchers further narrow the organisational culture into three dimensions. For instance, Zehir, Ertosun, Zehir, and Müceldili (2011) classify organisational culture into competitive, bureaucratic, and community dimensions. Yiing and Ahmad (2009) divide the organisational culture into a supportive, innovative, and bureaucratic culture. Supportive culture is distinguished by unbiased, friendly, trusting, as well as shared behaviors. However, a study by Klehe and Anderson (2007) divided organisational culture into two categories, such as collectivism and individualism. This demonstrates that there is no one acceptable way of examining organisational culture. This is consistent with Schneider, Ehrhart, and Macey (2013), who claim no precise way of how organisational culture should be studied. It is emphasized that no one type of organisational culture is better than the other, and different types of culture are better for different workplaces, different corporate philosophies and different type of companies (Schneider, et al. 2013). Hence, it is better for an organisation to focus on the type of culture that will create a better performance (Iliuta, 2014).

Organizational culture is based on cognitive systems, which help to explain how employees think about and make a decision. Charles and Gareth (2009) argued that "organizational culture is the specific collection of values and norms that are shared by people and groups in an organisation. To them, the culture of the organisation control the way employees interact with each other and with stakeholders outside the organisation." This shows that the organisation's norms and values have a strong effect on all those who are attached with the organization. (Isa, Ugheoke & Noor, 2016).

Many studies have also been carried out on organizational culture and employee performance; some of the studies found a significant positive effect between organizational culture and employee performance. Despite the above results, some researchers found a negative effect between organizational culture and employee performance. The results from the empirical studies are inconsistent and some are contradictory, ranging from positive to insignificant negative relationship. Besides, there is a limited study of this nature in the Nigerian banking sector and this created a gap in the literature which this study becomes significant. Based on this, the study, therefore, seeks to determine the effect of organisational culture on employee performance in deposit money banks in Enugu state. Specifically, the study intent to:

1. *Ascertain the extent of bureaucratic culture has a significant effect on employees' performance of deposit money banks.*
2. *Determine if innovative culture has a significant effect on employees' performance of deposit money banks.*

2. REVIEW OF RELATED LITERATURE

Conceptual and Theoretical Framework

Organizational Culture

Many definitions of organizational culture, but essentially these definitions refer to three approaches on references (Martins, 1992), namely: (i) Integration approach, states that every organization has one type of culture that coloring all the values and activities of its members. This approach emphasizes the consensus of all members of the organization to a dominant culture. (ii) Differentiation approach, emphasizing the sub-cultural consensus. In this approach, it is possible for every organization to have one or more sub-cultures that can still

be divided into three, namely sub-cultures that are in line with corporate culture, sub-cultures that are different from corporate culture and sub-culture that are opposed to corporate culture. (iii) Fragmentation approach, in this approach, there is no consensus among members of the organization and there is no similarity or agreement of values adopted in the members of the organization. In other words the corporate culture does not exist, that there are personal values of members of the organization (Romi, 2018). According to Cambridge dictionary, culture can be defined as the way of life, especially the general customs and beliefs, of a particular group of people at a particular time.

Organizational culture, according to Mobley, Wang, and Fang (2005), is a less tangible factor that determines the source of competition outside quality, cost, technology, consumer service brand, etc. Organizational culture is introduced to all employees once they are recruited; this helps them to be acquainted with the organization and the happenings in the system (Fakhar, Zahid & Muhammad 2012). According to Alvesson (2002), organizational culture is behavioural regularities, that guide policies on how to best workers and customers are to be treated. That is, the organizational climate gives an overall feeling, and this is portrayed in the physical layout, interaction process, and the ways employees conduct themselves. Organizational culture is the values, principles, traditions, and attitudes that affect the way members of an organization behave (Robbins, Odendaal, & Roodt, 2007).

According to Kreitner and Kinicki (2005), culture has several functions in the organization. First, hold the key to the limits, meaning a culture of creating differences between one organizations to another. Second, create a cultural identity of members of the organization. Thirdly, culture helped create employee commitment to the organization that is greater than the individual interest. Fourth, culture improves the stability of the social system. Each organization is able to build and develop the culture of the organization in accordance with the demands of the external environment; the culture will have an effective and efficient to improve performance to meet the needs of stakeholders and existence.

The dimensions of organizational culture according to Schein (2014) consists of three dimensions, namely: a) External adaptation tasks, consisting of the mission, goals, basic facilities, and the measurement of success; b) Internal integration tasks consist of restrictions in the group, the placement status / power, and the relationships within the group; and c) Basic underlying assumptions consist of a relationship with the environment, the nature of the activities of employees, the nature of time, and the nature of the relationship between employees. According to Greenberg (2010), dimensions of organizational culture, that is: a) Company founder. Cultural organizations working can be traced, at least in part, on the company's founder. b) Experience with the environment. Cultural organizations often develop outside the organization's experience with the external environment; c) Contact with others. Organizational culture is also growing outside the contact between a group of individuals within the organization who came to share the interpretation of events and activities within the organization.

Furthermore, Robbins (2008) mentions the seven dimensions of organizational culture, namely: a) Innovation and risk-taking, namely the extent to which employees are encouraged to be innovative and take risks; b) Attention to details, namely the extent to which employees are expected to exhibit precision, analysis, and attention to detail; c) Orientation results, namely the extent to which the management focus on results rather than on the techniques and processes used to achieve those results; d) Orientation of people, namely the extent to which management decisions take into account the impact of the results of the employee; e) Orientation teams, namely the extent to which work activities are organized based on the team; f) Aggressiveness, namely the extent to which employees are aggressive and competitive; and g) Stability, namely the extent to which the organization's activities emphasize the maintenance of the status quo.

Employee performance

Employee performance is a record of the results obtained from the specific job functions for a certain period of employee **(**Bernardin and Russel: 2008) and according to Mathis and Jackson (2011) the employee's performance is something that has been done and not done by employee. John (2012) stated that the object of the

performance appraisal evolved from an individual-centered approach moving towards employment (job centered) and finally centered on the target (objective centered). Individual-centered approach is evaluating the character or personal characteristics of an individual. Job centered approach is more focused on the behavioral approach. Finally, the approach shifted towards output orientation that person's performance ratings based on results (outputs). Employee performance appraisals are done properly in accordance with its function would benefit the company because it can improve performance.

The dimensions of the employee performance according to Dessler (2012) consists of five dimensions, 1) Quality of Work, is characteristic of a job that can show the level of needs and desires that are expected by a person; 2) The quantity of work, is the amount of work successfully completed by the employee in accordance with the job description in a specified period; 3) Supervision, is the attitude of giving landing a job or duty of superiors to subordinates who lack the knowledge and skills; 4) Presence, is the level of attendance of employees in the workplace; 5) Creation, is the attitude or activities to protect, maintain and allocate something. According to Bernardin and Russel (2008), the dimensions of employee performance consists of 1) Quality, which shows the level of the work process or the work that has been achieved from a job; 2) Quantity, which is the amount of product produced expressed in the currency, the number of production units, or the number of cycles of activities have been completed; 3) Timelines, namely the speed of a work that has been completed within a predetermined time; 4) Cost-Effectiveness i.e., the maximum level of use of the existing resources in doing a particular job; 5) Supervision, namely the extent to which an employee can complete the work without the need for supervision; 6) Interpersonal impact, that levels of the circumstances in which employees can create a comfortable atmosphere in work, confident, doing good, and work together with colleagues.

Business researchers and management scholars are mainly concerned in identifying the most significant definition of employee's performance. Even though employee's performance has become a common phenomenon in management studies and makes its definition and structure reliable and explicitly justified March and Sutton (1997). Additionally, as mentioned earlier, Anitha (2014) defined employee performance as the financial or non-financial outcome of the employee that has a direct link with both the performance of the organization and its success.

Organization and employee performance

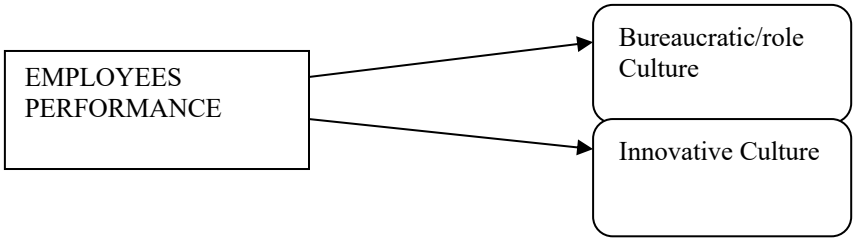
Many organizational behavioral theorists believe that a good fit between employees and the organization is significant to performance. The linkage among organizational culture and performance has received great deal of attention from scholars in the field of organizational culture (Ogbonna and Harris, 2000). Stoica et al. (2004) asserted that the relationship between culture and performance is influenced by the way organizations search for and use information. Therefore, comprehending the correlation between organizational culture and employee's task performance is an important research subject because detections of various studies have demonstrated that an individual's work performance is a vital element toward the success of organizations (Shahzad et al.2013). A well-built organizational culture serves as a powerful tool to execute innovative ideas, influences employee's behaviors, and increases performance (Kim Jean Lee & Yu, 2004). When an individual's values and organizational practices are well integrated, it will largely affect the level of individual and organizational output. The more employees identify that an organization provides uninterrupted learning, dialogue with employees, and has a well-connected system with good leadership, the more committed they will be to the organizational goals (Joo & Lim, 2009; Joo & Shim, 2010).

Possibly, employee's dissatisfaction with an organizational culture is the most important reason that causes poor performance and turnover in current organizations. Consequently, Silverthorne (2004) argues that the better the fit, the better the extent of job satisfaction, not considering the type of organizational culture. Following this, the literature suggests that organizations should pay attention to their culture and build suitable communication and capability to manage uncertainty and to achieve the needed organizational commitment (Cheung, Wong, & Wu, 2011; Ezirim, Nwibere, & Emecheta, 2012).

In view of the above, different cultural practices have gained research attention. For instance, a study by Higgins and McAllaster (2002) opined that an innovative-supportive culture is obtained from values, an informed underlying belief structure in addition to strong daily practices. Accordingly, Detert, Schroeder, and Mauriel (2000) argue that the values of an organization serve as the foundation of cultures that promote process innovation that permit or hinder performance improvement. It is a system that allows innovation, necessitates a culture of discipline (for example, an attitude and practice that emphasizes the monitoring of quality to be aware of problems), and encourages creativity in the process of solving problems. A study by Silverthorne (2004) involving a sample of Taiwanese employees argues that a bureaucratic organization has a larger problem in sustaining employee job satisfaction than organizations that have an innovative or supportive culture; thus, emphasizing that an organization that has a bureaucratic culture result in the lowest level of job satisfaction.

A study by Ogbonna and Harris (2000) also established that competitive and innovative cultures had a direct relationship with employees' performance, while community and bureaucratic cultures had no direct relationship with performance. According to Damanpour and Gopalakrishnan (2001), effective innovation improves organizational effectiveness and responsiveness. However, despite the significant argument on innovative culture, other researchers argue that innovation-supportive culture remains a difficult and unstructured phenomenon (Higgins & McAllaster, 2002). An innovative culture poses great challenges. For instance, Baer and Frese (2003) and Black, Carlile, and Repenning (2004) argue that an innovative culture is highly disruptive, changes relationships across functional as well as occupational limits, or causes adjustments to the organizational structure and climate. These results further indicate that different cultural practices have different effects on employees' performance.

There are different Organizational cultures, this culture as a programming of the mind which categories members of the organization in different sections.



Source: Researchers proposed Model, (2019)
Figure 1: Relationship between Organizational Culture and employee performance

Referring to the diagram value stands as the life of culture in the organization, value cannot do without ethics and moral identity ability of the employees to be creative on the task to be carried out and are able to find out if it suites both the employees and the employers.

Bureaucratic/Role Culture and Employee Performance

Bureaucratic/role culture is a type of culture that is characterized by bureaucracy as work is coordinated by a manager or a small number of managers at the top. In a role culture orientated organization, structures and systems give protection to subordinates and stability to the organization. The duties and rewards of employee's roles are clearly defined.

Bureaucratic Leadership is an ability to inspire trust and support from the people which is needed to achieve an organizational objective (Kim & Maubourgne, 1992). Leadership style has been proven to be the determinant of more than one aspect in organization and employees' behavior (Randeree & Chaudry, 2012). Leadership style is one of the components that can be linked to commitment (Williams & Hazer, 1986). Leadership behavior affects organizational commitment (Rowden, 2000). Leadership that is practiced by a leader is able to generate commitment from the organization's members. Supportive leadership indirectly and positively influences performance (Montes et al. 2005). Leadership positively correlates to service quality as a measure of

organization performance (Naceur & Aisha, 2005). Leadership that is owned by a leader is able to support and encourage organizational performance.

Commitment is used as the mediating variable between an independent variable and dependent variable (Terawatnavong & Webster, 2005). Commitment is an incentive that directs a behavior toward one or more objectives and generally, this term is conceptualized as a multi-dimensional construct that consists of several antecedents from some correlation and as a consequence, which ranges from some dimensions (Meyer et al., 2002). As a psychological construct in organizational behavior research, commitment has been studied for more than four decades (Alqurashi, 2009).

Innovative Culture and Employee Performance

Innovative/ entrepreneurship culture is the culture in which organization of activities that makes the employees come together for easy familiarization and socialization as this helps to enhance good relationship among the employees of an organization. Ojo (2010) argued that high levels of risk-taking, dynamism, and creativity characterize an entrepreneurial culture. There is a commitment to experimentation, innovation, and being on the leading edge. This culture does not just quickly react to changes in the environment; it creates change. Individual initiative, flexibility, and freedom foster growth are encouraged and well rewarded in this culture.

Most entrepreneurial ventures start as very small firms with a single purpose: capturing and exploiting the vision of the entrepreneur. A primary challenge for these firms as time passes is moving beyond the start-up phase to become more mature operations, even if they remain small businesses (Blumentritt, Jill & Lisa, 2005). Doing so often requires standardizing and institutionalizing organizational practices, structuring the contributions of employees, and expanding on the original entrepreneurial proposition that served as the impetus for the firm's creation.

Review of Empirical Studies

Various studies have been carried out on organizational culture, and employee performance across the globe, including Nigeria and they have mixed and controversial results. Maartje (2018) analyzed the effect of work stress, organization culture and job satisfaction toward employee's performance in Bank Maluku of Ambon Province. The research finding showed that organization culture has positive and significant effect toward performance, work stress has negative effect toward performance and job satisfaction has no effect on employee's performance in Bank Maluku of Ambon Province. Hailin Haimeng and Qiang (2018) examined whether corporate culture promotion affects firm performance in China in terms of firm market value, firm financial performance, and innovation output. They find consistent evidence that corporate culture promotion is negatively related to firm market value, positively related to innovation output and not significantly related to firm financial performance. Inienger and Emem (2018) examined the effect of organizational culture on employee's performance. Content analysis was used for the study and the hypotheses were tested with regression analysis. The study found that the culture of organization is central to either the impressive or unimpressive performance of the employees. Amirreza and Abdollah (2018) studied the impact of High-Performance Work System (HPWS) and the culture of organization on employees' performance in the Iran ministry of education. A survey research design was used. Findings showed that the ministry of education in Iran requires immediate action toward improving performance of members to obtain the desired outcome. Wiwi Widarsih, Madhakomala, and Yetty (2018) determined the effect of organizational culture, personality, and job satisfaction towards employee performance in the Directorate General of Industrial Resilience and International Access Development. The research shows that organizational culture, personality, job satisfaction had a direct positive effect on performance. Eric (2018) determined the effects of organizational culture on employee turnover. The paper was limited to the administrative staff of Private Universities in Ghana. Correlation and regression analysis were done to test the relationship between the organizational culture and employee turnover as well as their impacts. The study found that Bureaucratic Culture (BC) significantly influences employee turnover. Anozie and Ismail (2017) measure and identify how organizational culture affects the performance of its employees. A descriptive research design was used for the purpose of this research work. The result shows

that organizational culture such as ritual, value, and heroes has a huge and significant impact on employee's performance and through this research, which shows that symbols have little or no impact on employee's performance. Sipahutar, Wibowo., Umar, and Riady (2016) examined the influence of Training, Organizational Culture, Work Motivation, and Job Satisfaction on the Employee Performance at the Defence Industry in the Province of West Java. The method of research used descriptive statistics and Structural Equation Modeling (SEM). The results showed that the Training has a significant impact on Performance; Organizational Culture has a positive and significant impact on Job Performance. Elvis (2015) determined on how the impact of organizational culture on employee job satisfaction can be a source of competitive advantage. Using a case study method, the paper derives quantitative data from the employees of a selected banking company in Oxford, a city in United Kingdom. The empirical findings show that cultural traits of communication, motivation, growth opportunities and supervising support in organizations tend to make employees shift mind set and help the firm in its competitive advantage. Mashal and Saima (2014) ascertained the impact of organizational culture on organizational performance in order to know how the culture of an organization assists in enhancing organizational performance. The findings indicate that all the dimensions of the culture influence the different perspectives of organizational performance. Fakhar, Zahid, and Muhammed (2013) examined the impact of five organizational culture dimensions such as customer service, employee participation, reward system, innovation & risk-taking, and communication system on employee's job performance of selected software houses in Pakistan. Results showed that all the five dimensions of organizational culture have a significant positive impact on employee's job performance at selected software houses in Pakistan. Aftab, Rana, and Sarwar (2012) examined the impact of four organizational culture dimensions, such as involvement, consistency, adaptability, and corporate mission on role-based performance. Results confirmed that involvement, consistency, adaptability, and corporate mission are positively related to work performance. Sinha and Arora (2012) examined the influence of organizational culture dimensions such as innovation, communication, environment, humanistic workplace, commitment, systems, and result orientation on the business performance of the electric plant in India. Results indicated that all the seven dimensions have a positive and moderate relationship with business performance. Santos and Brito (2012) evaluated the impact toward a subjective measurement model for firm performance reported that the dimensions could not be used interchangeably since they represent different aspects of firm performance and corroborate the idea that stakeholders have different demands that need to be managed independently. Their study used confirmatory factor analyses data from 116 senior Brazilian managers to test its fit and psychometric properties. Mohammad, Rumana, and Saad (2013) examined the impact of organizational culture on employee performance. The study found that organizational culture significantly influences employee performance and productivity in the dynamic emerging context. Hasan and Hamid (2011) studied the link connecting four types of organizational cultures and how it shapes the organization. Results of Correlation and Friedman tests reveal that there is a significant correlation between organizational cultures and learning organizations. Results indicated that all service culture dimensions had a positive effect on organizational excellence. The above literature and empirical studies on organisational culture and employees performance were characterised with mixed reactions from different researchers, some are of opinion that there is a significant positive relationship between organisational culture and employees performance while some had a contrary view between organisational culture and employees performance; However, lack of consensus on the empirical literature calls for further studies on study of this nature.

3. METHODOLOGY

Research Design

This study will adopt survey research design. Survey design involves the use of sample to obtain the opinion of large number of people. It is a research design that study the information gathered from a fraction or percentage of the population.

Population and sample size of the Study

The population of the study consists of five selected deposit money banks quoted on the Nigerian Stock Exchange. The element of the population comprises all the 127 staff of the bank branches across the state.

Considering the population size which is not large, the reseachers therefore used all the population size for the study.

Method of data collection

There is a cover letter to the questionnaire addressed to the respondents, where they were assured that all information provided will be treated with utmost confidentiality and used for the purpose of the research work. The questionnaire were close-ended questions on the research study, structured on a scale of Strongly Agree (SA), Agree (A), Undecided(UN), Disagree (D) and Strongly Disagree (SD); to give the respondents choice of ticking most perceived option. The researchers visited the banks with two assistants to administer the questionnaire to the respondents. The copies of the questionnaire distributed to the respondents were retrieved within 10 working days after administering it to the respondents.

Method of Data Analysis

Data collected for the study were analyzed by the researcher using frequency counts, mean score and standard deviation. The three hypotheses were tested using simple regression statistical tool with aid of SPSS version 20.0 at 5% level of significance.

Decision Rule:

The decision for the hypotheses is to accept the alternative hypotheses if the p-value of the test statistic is less or equal than the alpha and to reject the alternative hypotheses if the p-value of the test statistic is greater than alpha at 5% significance level.

Model Specification

The researcher estimated model in the following form:

$EMPFM_{it} = a_0 + \beta_1 BUR_{t+} \sum_{it}$ ……..…….(ii)

$EMPFM_{it} = a_0 + \beta_2 INN_{it+} \sum_{it}$ ……..…….…...(iii)

Where:

The dependent variable: Employee performance (EMPFM) and

The independent variables:

BUR = Bureaucratic culture

INN = Innovative culture

a_0 = slope of the model

β_I, β_2, β_3, = coefficient of parameters.

i for the financial year ending at year *t*.

DATA PRESENTATION AND ANALYSIS

Out of 127 copies of questionnaires distributed, 94 were completed and returned. This represents 74%.

Data Presentation

Table 1: Analysis of data collected from the targeted respondents

S/N	STATEMENTS	SA	A	UN	D	SD
	Bureaucratic culture and employees' performance					
1	The obligations and rewards of employee's roles are clearly defined.	39	33	8	12	2
2	Structures of the organization and systems ensure protection to subordinates.	30	42	13	7	2
3	The employers help in stabilizing and developmental structure	20	41	8	19	6
4	Operations are being coordinated by the superior for performance appraisal.	31	33	3	18	9

5	Provides welfare facilities to their employees	19	49	11	9	6
6	There is motivator for high performance.	21	40	8	20	5
	Innovative culture and employees' performance					
7	There is quick reaction for operations changes.	32	44	0	12	6
8	Individual initiative and flexibility are being encouraged	23	37	5	22	7
9	Ensure the development of personal qualities such as creativity.	22	49	7	11	5
10	There is room for togetherness, familiarization and socialization	30	42	0	18	4
11	Commitment to experimentation, innovation, and being on the leading edge.	28	37	8	21	0
12	Synergy between employees and organization	25	40	5	19	5
	Employee Performance					
13	Build suitable communication and capability	30	46	2	10	6
14	Quantity enhances	23	37	5	22	7
15	Conservation to manage uncertainty	25	49	4	11	5
16	Interpersonal relationship and achieve the needed organizational commitment	32	42	0	16	4
17	Increase in the employee productivity	27	38	8	20	1
18	Quality of services to customers	27	35	5	24	3

4.3 Test of Hypotheses (Null)

Hypothesis One

H_{O2}: Bureaucratic culture does not significantly affect employee performance of deposit money banks.
In testing this hypothesis, questions 1 to 6 that contain in table 1 were used.

Table 2: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28630.364	1	28630.364	133.281	.001[b]
	Residual	644.436	3	214.812		
	Total	29274.800	4			

a. Dependent Variable: Employee performance
b. Predictors: (Constant), Bureaucratic

Table 3: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.411	10.889		1.140	.337
	EMPFM	.890	.077	.989	11.545	.001

a. Dependent Variable: Employee performance

In table 2, it reveals that the p-value is 0.001 indicates that the hypothesis is statistically significant at level of significance (5%); hence p-value of the test statistic is less than alpha value.

In table 3, the regressed coefficient correlation result shows that an evaluation of the employee performance of the explanatory variable (Beta Column) shows that Bureaucratic culture is significant (Sig.= 0.989).

Since p-value of the test statistic is less than alpha, we, therefore, reject null hypotheses and uphold alternative hypothesis which state that the bureaucratic culture has significant affect employee performance of deposit money banks.

Hypothesis Two

Ho_2: Innovative culture does not significantly affect employee performance of deposit money banks.

In testing this hypothesis, questions 7 to 12 that contains in table 1 were used.

Table 4: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35923.147	1	35923.147	4977.120	.000[b]
	Residual	21.653	3	7.218		
	Total	35944.800	4			

a. Dependent Variable: Employee performance

b. Predictors: (Constant), Innovation

Table 5: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.350	1.996		.175	.872
	EMPFM	.997	.014	1.000	70.549	.000

a. Dependent Variable: Employee performance

In table 4, it reveals that the p-value is 0.000 indicates that the hypothesis is statistically significant at level of significance (5%); hence, p-value of the test statistic is less than alpha value.

In table 5, the regressed coefficient correlation result shows that an evaluation of the employee performance of the explanatory variable (Beta Column) shows that innovative culture is significant (Sig. = 1.000).

Since p-value of the test statistic is less than alpha, we, therefore, reject null hypotheses and uphold alternative hypothesis which stated that innovative culture has significant affect employee performance of deposit money banks

Discussion of Findings

Bureaucratic culture: based on findings, was found to affect positively on our dependent variable, employee performance. This effect was statistically significant. This finding, therefore, supports our aprori expectation and the findings of Rambo and Orwa (2018) Maartje (2018); Eric (2018) and negates the view of Anozie and Ismail (2017).

Innovative culture: based on findings, was found to affect positively on our independent variable, employee performance, but this effect was statistically significant. This finding, therefore, supports the finding of Inienger and Emem (2018) Mohammad, Rumana, and Saad (2012) and negates our aprori expectation and the view of Al-Enezi (2011).

Conclusion and Recommendation

This study examined the effect of organizational culture on the performance of Nigerian deposit money banks. The study found that bureaucratic culture and innovative culture has a positive influence on the dependent variable (employee performance). The study has identified the specific types of organizational cultures that facilitate employee commitments towards achieving the performance of their organization. The outcome of this study indicates that all the organizational culture is most effective in all ramifications. However, the level of motivation has the greatest effect on employee performance, meaning that employee motivation must be the organizational priority even can be improved through suitable communication between the management and the employees. Conclusively, the findings show that various organizational culture influences the different

perspective of organizational performance. Based on the outcome of the study, it recommended that deposit money banks management should develop cultures that will enhance performance having the interest of their customers and employees.

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The Art of Crafting Actionable National Innovation Policy: The Case of Sri Lanka

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Abstract
Innovation or S&T policy has become one of the crucial policy domains in almost all the countries during the last three decades. The association between the level of innovation and the socio-economic development of a country has created a considerable national level prominence to work on formulation and implementation of innovation policy which will direct to configure a national level innovation eco-system. This study examines the contribution of National S&T Policy of Sri Lanka published in 2008 together with analysis of the National Science, Technology and Innovation Strategy 2011-2015 presented in 2010 for making recommendations for effective designing and implementation of the innovation policy in the light of rationality model for policy. Document analysis, secondary data sources and in-depth interviews with key personalities were the methods applied to meet study purposes. The design effort of the Policy and the Strategy is appreciated as this was the first attempt in formulation a policy in innovation in Sri Lanka. Nevertheless, incompatibilities that the two documents presented have created inconsistency of the goals and objectives. Loop holes in assigning strategic actions amongst relevant actors, lack of guidance for resource allocation, and ambiguity in coordination and communication are highlighted as weaknesses in these policy initiatives. Overall, it reveals that the gap between stipulated goals and objectives of the Policy and the level of attainment has been widening annually over 10 years of the policy formulation. Therefore, this study recommends that it necessitates the policy to be appropriately adjusted in order to meet with timely needs and crafting actionable strategies accordingly.

Keywords: Innovation, National Innovation Policy, National Innovation Strategy, Rationality Model for Policy

1. Introduction

1.1 Introduction to the Problem

Policies are widely used in many countries for the purpose of appropriation of limited national resources to maximize the achievement of different national priorities. Public policy has been defined as '…the series or pattern of government activities or decisions designed to remedy certain social problems, as a purposeful course

of action that an actor or the group of actors follows in dealing with a problem or matter of concern' (Khan and Khandaker, 2016, pp. 539). Accordingly, the issue of public policy is two folded–to set reasonable and attainable goals and objectives for long term in a particular national level concern, and to decide strategies intentionally to reach those goals and objectives effectively.

A policy, having innovation in the label had appeared in the literature from mid1990s. However, the influence of public policies on innovation had been in existence for centuries with conviction (Edler and Fagerberg, 2017). According to Meissner et al. (2017), the innovation policy has become a popular scientific research domain in knowledge-based societies. The old version of this particular policy domain was 'Science and Technology Policy' and the new version sometimes got renamed as 'Science, Technology and Innovation Policy.' Innovation policy covers all the science, technology, education, economic, industry and political domains that are undertaken by public organizations that influence on innovation for national development needs (Edquist, 2005; Borrás and Edquist, 2013). Hence, whatever the title given in different contexts, this policy domain covers almost all the institutions and functions associated to national level innovation system of a country.

1.2 Explore Importance of the Problem

National Innovation System (NIS) comprises main actors and their interrelationships focused on main functions of a NIS - knowledge generation, knowledge exploitation and dissemination, commercialization of the outcome, training of R&D personnel, managing innovative processes, coordination, legal regulation, mediation, financial support, and other facilitations for innovation. NIS works as the network of public and private sector institutions (NIS actors), whereby the activities and interactions initiate, import, adopt and disseminate new decisions, technologies (Juknevičienė, 2019). Accordingly, the broad framework is required to cover the above national level considerations in the formulation of an effective national innovation policy.

Hence, the innovation policy and the strategy work as the general guiding framework of the country towards establishment of a national level eco-system for promotion of innovation. However, in the same policy domain, some countries implement the policy successfully to gain socio-economic advantages while some countries struggle with difficulties of gaining benefits through successful deployment of the policy. The intellectual dilemma on why do these gaps exist among performance of different countries and how the slow performing countries can work on speeding up innovation performance through formulation and implementation of innovation policy has become important and concurrent in research arena.

The national commitment on this policy domain in Sri Lanka was shown through formulation of S&T Policy in 2008 and developing National Science, Technology and Innovation Strategy 2011-2015. Although the commendable job s performed by formulating a world-class standard policy, it is discernible that outcomes such as national innovation performance, awareness and enthusiasm on innovation, are still not manifested. Meanwhile, similar slow-performing nations two decades ago, such as Malaysia, Thailand, Vietnam, Taiwan as well as big nations in the region, China, India, Bangladesh and Indonesia, are steadily increasing their innovation performance and capabilities. Therefore, it has become a propitious and important consideration apropos assessing the role of national innovation policy to identify missing elements and ingredients for making recommendations to accelerate innovation for socio-economic development targets of Sri Lanka through strong policy formulation and implementation practices.

1.3 Describe Relevant Scholarship

The development and implementation of national innovation policies in knowledge-based, developed countries have become a popular interest of researchers and policymakers (Meissner et al., 2017). According to Borrás and Edquist (2013), this policy domain covers all the related public institutions and their combined actions, which create an impact on the process of innovation of a nation. Innovation policy is identified as public action that influences technical change and other kinds of innovations and it includes elements of research and development (R&D) policy, science and technology policy, infrastructure policy, regional policy, education policy and other related policies. Therefore, this policy is named as science, technology and innovation policy as well (Edler and

Fagerberg, 2017). Innovation policy is a prerequisite to accelerate innovation at both the national and the local levels necessitating interactions and interrelationships of actors to be synchronized in order to make an effective national innovation system with clear responsibilities. Thus it enables control and supervision of the actions of actors for successful implementation of S&T policy (Pülz and Treib, 2006).

The system is defined as the input-process-output model required boosting innovation performance while it highlights the actors as well as their interdependencies with clarifications for their roles and functions. The necessity of adopting transformative change-oriented style of the system is also accepted by the concept of NIS (Hitt et al., 2011). Hence, the policies and strategies need to be developed to promote such changes and adjustments to accommodate the timely emerging necessities. However, complexity associated with the innovation process at the national level due to involvement of multi-actors, ambiguous nature of relationships and interdependencies as well as openness of the innovation process has created difficulties in understanding the boundary of the policy and assessing its effectiveness. It will further affect disruptions in the process of implementation.

In order to minimize the complexity in understanding the innovation policy, Jukneviciene (2019) has introduced and used four types of an innovation policy viz: 1) mission-oriented policies, 2) invention-oriented policies, 3) system-oriented policies, and 4) transformative change-oriented policies. This categorization has been presented by analyzing ten research papers of different authors and it defined each category with citation of original works as depicted in Table 1.

Table 1: Types of innovation policies

Type	The core of the type	Requirements
Mission-oriented policies	Policy-makers consider all phases, in broad approach, of the innovation process to design and implement policies aiming at providing new solutions to specific challenges that are on the political agenda.	Solutions should be practiced/ implemented.
Invention-oriented policies	Policy-makers believe in the potential benefits of S&T which will contribute to the society. The concentrate on the R&D, invention phase and leave the possible exploitation and diffusion of the invention to the market. Hence, this is considered as a narrow approach.	Creation of new public organizations, supporting firms and public research organizations of various types for R&D.
System-oriented policies	Concentrate on the system-level features, parts and interaction between different parts of the system; the extent to which some vital component of the system is in need of improvement; or the capabilities of the actors that take part. Policy focuses on building links, clusters and networks and on stimulating learning between elements in the systems and on enabling entrepreneurship.	The creation and development of national innovation system (NIS).
Transformative change-oriented policies	Policy-makers are trying to match S&T policy with social needs and sustainable development of inclusive societies at a more fundamental level or their associated ideologies and practices. This promotes experimentation albeit there is an argument that the Global South does not necessarily need to catch-up the transformation model of the North.	Transformation refers to sociotechnical system change.

Source: Jukneviciene (2019)

Although the author has introduced these contents as four types of innovation policies, it is more valid in introducing as functions of innovation policy as there may be combination of two or more orientations in a single national innovation policy. Therefore, this exercise provides a strong basis to understand the constituents of the policy and assess the national level innovation policy.

There are well crafted public policies in all the countries that can guide the sustainable socio-economic development of those nations. However, policies can generate the desired results only if the implementation part is carried out successfully. Policy implementation is the process of translating the goals and objectives of the

policy into actions. The gap between the expectations and the realization of performance creates frustration and it continues mainly due to drawbacks in the implementation process of the policies. Successful policy implementation depends not only on designing effective systems but also on managing implementation with a good execution plan which will connect all stakeholders effectively and assists to obtain their maximum support (Brinkerhoff and Crosby, 2002; Khan and Khandaker, 2016). Therefore, in order to address these implementation necessities, it is necessary to provide significant resource allocation, have expertise skills and pay attention to designing policies.

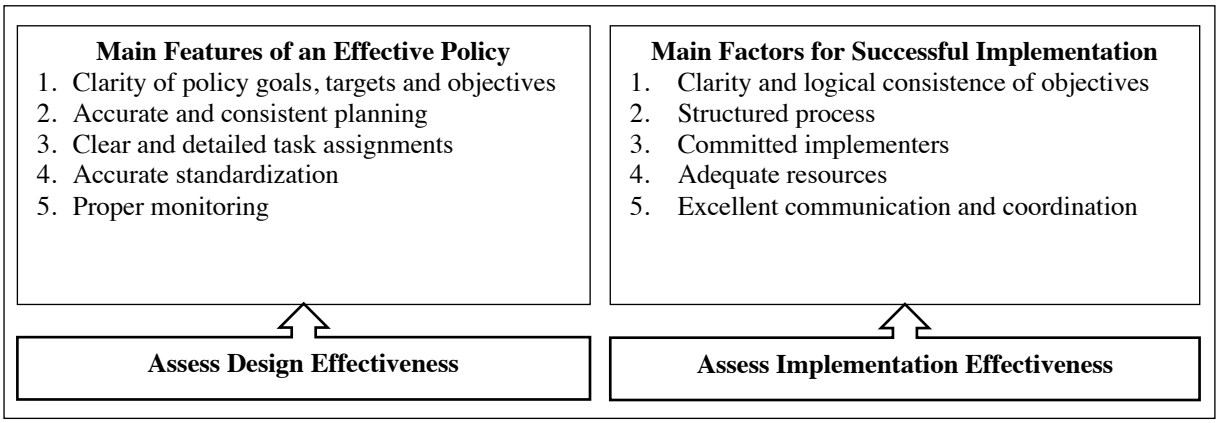
Multiple factors are linked to poor policy performance such as lack of coordination, funding, commitment as well as capabilities among implementers and support from top to bottom in the national governance system. Bitrán (2017) has suggested five main requirements of successful policy implementation viz: clarity and logical consistence of objectives; structured process; committed implementers; adequate resources; excellent communication and coordination. Five theoretical models namely; rational, organizational, political, bureaucratic and management has been summarized (Table 2) by Jukneviciene (2019) to guide understanding of the constituents of innovation policy and conditions for successful execution of the policy.

Table 2. Models for the successful policy designing and implementation

	Rational Model	*Management Model*	*Organizational Development Model*	*Bureaucratic Model*	*Political Model*
Main features in designing	1. Clarity of policy goals, targets and objectives 2. Accurate and consistent planning 3. Clear and detailed task assignments 4. Accurate standardization 5. Proper monitoring	1. Sufficient and effective use of budget 2. Right organizational structure 3. Effective communication 4. Involvement of stakeholders 5. Adequate equipment and appropriate technology 6. Correct location	1. Effective leadership 2. Motivation 3. Engagement of people 4. Team building 5. Accuracy of decisions	1. Proper discretion of frontline implementers 2. Competency of front-line implementers 3. Control of the behavior of front-line implementers 4. Commitment of front-line implementers	1. Avoiding complexity of joint actions 2. Capacity for bargaining capacity 3. Harmony among political actors; 4. Active political motivation 5. Minimizing the influence of pressure politics
Factors affecting implementation	1. The clarity of goals and objectives 2. Details plans and assigning jobs appropriately 3. Effectiveness of evaluation and monitoring 4. comprehensive and efficient operating procedures,techniques required assisting implementers	1. Organizational structure 2. Personnel and human resources 3. The activities of front-line implementers 4. Equipment and technology 5. Coordination and cooperation 6. Exercise of authority 7. Location	1. Leadership capacity 2. Team building 3. Engagement of the various parties 4. Participation, motivation, coordination, and commitment	1. The role of members of staff who directly come into contact with people and other stakeholders	1. Outcome of interactions between agents 2. Bargaining power 3. Conflict resolution 4. External environmental factors (economic, political and social)

Source: Jukneviciene (2019)

Many recent researchers have used the five functions introduced in the rationality model as in Table 2, to assess S&T and Innovation policy. This research also applies the same rationality model to assess the content of the policy and to identify the prevailing condition which is affecting the implementation of the policy as summarized in Figure 1.



1.4 Research Questions

Despite the declared goals of the Policy and the Strategy, the priorities in national strategies, governmental funding, promotion and support, the progress in R&D and innovations in Sri Lanka still remains at a low level. Hence, three specific research questions are drawn to guide this study:

1. What are the main features (presented in Figure 1) have been included in formulations the national S&T policy?
2. How those factors are associated with effective implementation reflected in the Sri Lankan S&T policy?
3. What are the fostering and hindering factors for successful implementation of Sri Lankan S&T policy?

According to the research questions, this study aims at assessing the gap between the level of expectations and level of achievements of the goals and objectives of the Policy and the Strategy. Further, the study suggests practical recommendations for the effective execution of the goals and objectives established in the Policy and the Strategy with special references to the identified barriers.

2. Method

Conceptual model for the study was developed following the rational model which was developed with the contribution of scholars Khan and Khandaker (2016); Bitrán (2017); Singh (2017); and Jukneviciene (2019). Accordingly, five features of the formulation stage viz: 1. Clarity of policy goals, targets and objectives, 2. Accurate and consistent planning, 3. Clear and detailed task assignments, 4. Accurate standardization, and 5. Proper monitoring) have been considered to determine design effectiveness while five factors viz: 1. Clarity and logical consistence of objectives, 2. Structured process, 3. Committed implementers, 4. Adequate resources, and 5. Excellent communication and coordination have been traced to assess effectiveness of implementation of Sri Lankan S&T Policy. This study follows the rational model rather than the other four perspective approaches (presented in Table 2). This is a qualitative study which applies document analysis, secondary data analysis, analyzing expert opinions for the summarization and interpretation of the study results. Two main documents that are National Science and Technology Policy (2008) and National Science, Technology and Innovation Strategy 2011-2015 (published in 2010) to elicit meaning, gain understanding, and develop empirical knowledge. Many other national documents available in the public sources such as NASTEC evaluation reports of S&T institutions and Annual reports of S&T institutions were analyzed with the aim to reveal objectives of the study.

Secondary data available for innovation inputs and innovation outputs were analyzed to assess the innovation performance of Sri Lanka. Data sources available at National Intellectual Property Office (NIPO), World Intellectual Property Office (WIPO), World Bank Statistics and specially, reports of Global Innovation Index from 2014 to 2018 was accessed and used in this study. Key officials from representative organizations were interviewed and qualitative data was collected to make clarifications to be certain extent about secondary

documents and secondary data sources to strengthen the understanding of the researchers to make more effective and realistic interpretations.

Methods used in the document analysis and secondary data analysis, were helpful to identify main insights of the empirical research and to explain links between theoretical and empirical findings. National level related documents published from 2008 to 2018 were accessed for analysis in the empirical stage of the study.

3. Results

Sri Lanka is a small island in the South Asian region and located at southern tip of the Indian Mainland of the Indian Ocean. The whole land area including the internal water sources covers 65,610 square kilometers. The population is approximately 21.44 million (World Bank Report, 2017) and it maintains rather a tardy population growth. There was an attractive growth in the Gross Domestic Product with an average of nearly 7 percent per annum till 2015 and in the backdrop in which most other economies are experiencing an economic turbulence caused by recession and political altercations in the world during the same period. The highest growth rate in the country post-independence period, 8.3 percent, was recorded in 2011. As per Dutz and Cornnell (2013), it ushered a sustainable optimistic period in the country with the prospects of accelerated economic growth and poverty reduction within the post-war period. Nevertheless, after 2015 the growth has been slowed down again after the regime change that occurred in the country by virtue of presidential election and the general election as well as the recent political instability. The per capita income of the country has been increasing considerably from USD 855 in 2000 to USD 4065 by 2016 (World Bank Report, 2017).

Apropos the compelling necessity of socio-economic development of the country, Sri Lanka has also paid enough attention on innovation as emerging policy domain. Thus, the Ministry of Science, Technology and Research is the dedicated Ministry in Sri Lanka in the matters of administrative functions in innovation. The National Science and Technology Commission (NASTEC) of Sri Lanka initiated for formulation of National Science and Technology Policy of Sri Lanka in 1994 and NASTEC developed a more comprehensive policy for Sri Lanka in 2008. This policy document has presented ten broad objectives that are essentially linked with the prospects of triumphing over into a scientifically and technologically advanced society manifesting a holistic approach to strengthen and develop science and technology in the country.

Subsequently, there was an initiation of a strategic plan preparation for the purpose of effective transformation of the S&T Policy, more action-oriented. Thus, the Ministry of Science, Technology and Research prepared ‘Science, Technology and Innovation Strategy for Sri Lanka 2011-2015’ published in 2010 with four main broad goals. This document was presented along with suitable measures and time-frames in order to facilitate the implementation and to evaluate the performance of the initiations. More importantly, this strategy has emphasized the need of establishing a world-class national research and innovation eco-system by requesting the attention to be paid on NIS of Sri Lanka with the concurrent consideration of the concept of NIS. It has been emphasized that NIS is the core of the strategy.

It is hard to present detailed and complete analysis based on these two large documents with the relevant data and information herewith. Therefore, the summary of the analysis on design effectiveness of the policy has been presented based on five areas in the rationality model as in Figure 1.

3.1 Policy Design

3.*1.1 Clarity of policy goals, targets and objectives*

Both the National Science and Technology Policy (2008) and Science, Technology and Innovation Strategy (2010), here-after referred to as 'the Policy' and 'the Strategy,' documents have emphasized the deficiency of effective and efficient national system for innovation and forwarded suggestions for the effective and efficient eco-system for innovation. On the whole, the Policy, as well as the Strategyprovides a broader missiontowards formulation of a world-class national innovation system for Sri Lanka. □

In order to meet the mission prescribed above, ten policy objectives have been derived in the Policy viz: 1) Creating Conducive Science, Technology and Innovation Culture, 2) Building Capability in Science and Technology, 3) Developing S&T Human Resource Base, 4) Promoting a Research Culture, 5) Developing and Acquiring New Knowledge and Technologies, 6) Ensuring Sustainable Use of Natural Resources, 7) Encouraging Development and Use of Indigenous Technologies, 8) Ensuring the Protection of Intellectual Property Rights, 9) Assuring Quality and Performance of S&T Institutions, and 10) Encouraging Applications of S&T for Human and National Security. It seems that there is a broad range of considerations covered in this policy document to lead to the aforementioned mission. It is a good analysis of the present situation of each sector covered in all the ten objectives and more importantly, a large number of strategic actions are suggested with concise measurements for the achievement of the mission and objectives that lead to configuration of a world-class national innovation system.

Meanwhile, the Strategy has presented four main broad goals viz: 1) Science, technology and innovation for economic development, 2) A world-class national research and innovation eco-system, 3) An effective framework to prepare the people of Sri Lanka for a knowledge society, and 4) Ensuring sustainability. This indicates little contradiction compared with objectives of the Policy. Goals are generally broader than objectives. Generally, it is imperative that the strategy be more action-oriented and follows the policy as a guiding document for the strategy. However, that contradiction and deficiency could be minimized if initiation is made to match the two documents. Anyway, the document period has now expired and it needs to work out the next strategic plan to meet the objectives.

The Policy and the Strategy documents are separately providing clear guidance with clear mission, goals, objectives and strategic actions but creating confusion is inevitable when the users try to match both. Hence, this weakness is critical in analyzing design effectiveness of the innovation policy of Sri Lanka. The compatibility of this policy with other related public policies such as industry policy, education policy, trade and investment policy, and financial policy is also a critical consideration, in addition. However, there is little information about consideration of those policies while formulating this policy.

3.1.2 Accurate and consistent planning

These two documents separately depict the accurate process in aligning policy objectives from top to bottom and bottom to top in order to reach the broad aspiration of configuration of world-class NIS. Policy designing effectiveness concerning the accurate formulation of individual documents is highlighted. However, to ensure the consistency in the planning the strategy definitely should follow the policy as a predecessor of the planning process. Such a deficiency would remain as a main drawback and would cause a huge negative impact in assessing the consistency of the planning process.

3.1.3 Clear and detailed task assignments

Tasks or strategic actions are derived for aligning with the mission and broad goals as discussed in the previous two sections. However, assigning task to responsible parties has continued as it is another drawback in this policy formulation process. A strategic apex body has been newly suggested viz: National Science, Technology and Innovation Council to work as a national level linking and coordinating mechanism. This has addressed the complex nature of this public policy domain which is linked with many national-level considerations. Nevertheless, there are no clear role assignments for most of specific strategic actions suggested in both documents. Hence, in order to ascertain who are the responsible parties to carry out the suggested actions have not been sufficiently mentioned.

3.1.4 Accurate standardization

Standardization is generally associated with measures in specific considerations. There is inherent difficulty in standardization of vague and broad national policy domains. Therefore, standardization cannot be assured to a large extent. However, there is a number of measurements presented in both documents comparing with world standards, regional measures, and current status of the particular concerns in order to understand requisite states of the standards. Allocation for R&D expenditure as a percentage of GDP, number of scientists per million of the population, number of patents has been considered in the policy initiatives that are some good examples to prove that the standardization has been considered. Further, these are good denotative actions suggested for standardization of procedures of the national innovation system through the Policy and the Strategy initiatives. Therefore, it can be concluded that the attempts for standardization of the design stage of the policy as commendable.

3.1.5 Proper monitoring

It is appreciated that producing measurement indicators, as discussed in section 3.1.4 above, facilitates monitoring of the progress of the actions in the policy formation process. Although a number of key performance indicators have been produced to facilitate the monitoring of the progress it continues unclear who will engage in the monitoring the progress at different levels. Hence, identical matters as in many public policy domains, the monitoring part of the policy have not been sufficient cause for concern in this policy context too.

Overall, the attempts of formulating National S&T Policy with the contribution of different experts can be appreciated as it is the first such initiative to move the country forward by dint of a systematic approach for national-level innovation.

3.2 Policy Implementation

The process of the implementation of the Policy and the Strategy is also clearly documented. Government has realized the importance of policy intervention in the field and attempted to create a strategic framework with target-oriented actions although implementation has been abandoned. However, the broad acceptance and meeting a commitment to the lack of implementation of the policy are not depicted in the actions and performance of the key actors of the NIS yet.

The Science, Technology and Innovation Strategy has been prepared with an evaluation of extant science, technology and innovation outcomes, inputs and capabilities by establishing performance targets for the period of 2011-2015. Those performance targets included progress-oriented features and were aligned with the requisites of effective NISs in the world. The strategy indicated an improved friendly-eco-system of national research and innovation for Sri Lanka by the year 2015 with the implementation of the strategies suggested. As data presented in Global Innovation Index 2016 and 2017, it was not proven that the performance targets set in the Strategy document had realized until 2017. There exists a considerable gap between the expected targets in the strategy and the actual performance achieved. For example, it was expected to progressively increase the investment for S&T up to 1.5 percent of GDP by the year 2016, with a public spending of at least 1 percent. Nevertheless, it still remains far below that level, when compared to all the other regional countries (GERD 0.11 percent from GDP in 2015) as summarized in Table 3.

Table 3. R&D Allocation as Percentage of GDP over Time

Country	R&D % GDP in				
	1996	2000	2004	2011	2014
South Korea	2.24	2.18	2.53	3.75	4.28
Singapore	1.32	1.82	2.10	2.15	2.20
China	0.56	0.90	1.21	1.78	2.02
India	0.63	0.74	0.74	0.83	0.63 (2015)

Pakistan	0.16 (1997)	0.13	0.44 (2005)	0.33	0.25 (2015)
Thailand	0.12	0.24	0.24	0.36	0.48
Malaysia	0.22	0.47	0.60	1.03	1.26
Sri Lanka	**0.18**	**0.14**	**0.18**	**0.14 *(2010)**	**0.106 *(2015)**

Source: UNESCO Institute for Statistics 2017, available at: https://data.worldbank.org /indicator/GB.XPD.RSDV.GD.ZS
*National Science Foundation, 2018

Notwithstanding many measurable outcomes that lag behind the expectation of the strategy, the intuitional initiative and the governing framework suggested by the policy, the strategy necessitates being established successfully. These institutions require working with the assigned tasks and their performance should effectively be monitored by NASTEC according to the mandate assigned to it. Therefore, it requires to investigate how the five factors mentioned in the rational model (Figure 1) have been contributed to the implementation of national innovation policy of Sri Lanka.~~, viz:~~

5.2.1 Clarity and logical consistence of objectives

It discussed the incompatibility of the Policy and the Strategy in the assessment of the design effectiveness of the policy. Thus, it remains as the major inconsistency as explained in the previous section. It requires to pay attention to remove this incompatibility to make a clear chain of goals and objectives from top to bottom and vice versa. Exiting two documents have created confusion among the stakeholders of this policy domain in making decisions relevant in the implementation stage. This should be dealt with in future initiatives of the national innovation policy formulation.

5.2.2 Structured process

The Policy document has not been aligned with the introduction of the structured process for the implementation and has abandoned the suggestion of a structured process for implementation (Table 4). The responsibility has been transferred to the Strategy making process and the Strategy has contributed to making a detailed process for implementation of the Policy despite that the mismatch of goals and objectives still remains. The planned configuration of the NIS of Sri Lanka would become a more realistic if it had been worked during the last ten-year period.

Table 4. Supportive mechanisms suggested in the Strategy

Suggested Mechanism	**Description**
National Center of Excellence ~~Letters~~	This has been suggested to be established with partnership of the state research institutes, universities and the private sector. The main aim of this setting up is to centralize human and physical resources required for research and innovation in the domain of critical science and technology. This center is to be self-reliant with proper systems and procedures to work in critical technologies such as biotechnology, nanotechnology and IT that cut across many core technologies as suggested in the Strategy.
Science Parks	Science parks were proposed to setup at deferent levels and network with those to facilitate research and innovation from grass-root levels to a higher level of the economy. The basic village level centers (through Vidatha Centres) are suggested to address techno-entrepreneurial capabilities at grass-root level while a Minipolis is established at the district level by connecting village level centers. Technopolis at regional level has been proposed to establish connecting with several Minipolises. Megapolis is suggested as the central hub which facilitates advanced research and innovation while coordinating with all other centers.

Sri Lanka Institute of Technology and A National Cadre of Researchers (NCR)	It has suggested initiating Sri Lanka Institute of Technology collaborating with international institutions such as IIT in India, MIT in US, AIT in Thailand for the purposes of training and development of the human capital stipulation. Establishment of a National Cadre of Researchers is suggested herein in order to secure the maximum contribution of knowledge workers. The Strategy document has proposed that S&T personnel should be considered as a special group of employees in the National Carder in order to motivate and retain them to derive the maximum contribution from their work to the development of the country. Recruitment of S&T personnel with international exposure as well as expatriate personnel are also aimed at through the establishment of NCR. Both of these suggested establishments can be considered as sine qua non for the development of science and technology outcome through refined and highly and motivated S&T personnel. Therefore, there arises the necessity of identifying the implementation barriers carefully in the current policy and strategy-making the process.
National Research and Technology Fund (NRTF):	It suggests to establish the NRFT managed by the National Science, Innovation and Technology Council. Operation flexibility and efficiency in fund allocation and utilization for R&D activities both locally and abroad are expected. Government allocation from the annual budgets, funds from local and international donors, government special taxes on R&D purposes, entering into R&D contracts with different parties and industrial contribution for R&D are expected as the contribution for the fund. However, it has not expected to impose restriction or discourage access to different funding by individual institutions and universities for the R&D and innovation activities through the establishment of NRTF.

5.2.3 Committed implementers

This remains unclear and less dealt with in the policy preparation as a result of inability to assign the responsibilities to existing authorities clearly. Instead, most of responsibilities are assigned to proposed authorities which will be new institutional formulations. Most of suggested entities are still not established and coordination among existing partners to guide them and motivate towards the implementation is yet lacking.

5.2.4 Adequate resources

This is one of main factors affecting the achievement of the set goals and objectives in the Policy. Resource allocations as well as dedication to allocate resources have recorded one of the weakest aspects. Hence, most of the goals still remain below the level of expectation. It has created a big challenge to develop a retained human capital, the requisite innovation facilitators and infrastructure which is a necessity for a world class NIS and other capability development for R&D and innovation.

5.2.5 Excellent communication and coordination

There are a large number of institutions working on the formulation and implementation of the national S&T policy and strategies. According to the findings of this study, it is difficult to find a strong coordination mechanism to connect different institutions to a strategic apex body. Although NASTEC has been established for this purpose initially, the main role of NASTEC is limited to creation of an evaluation mechanism and carrying out evaluations. It was restricted to engagement of post-evaluation activities due to the fact that no clear mandate exists in order to govern other S&T institutions. The suggested Council was also not yet established.

~~Key findings are presented herewith aligning with the rationality model for innovation policy. The section presented the features to determine the design effectiveness and factors associated with effective implementation referring to innovation policy of Sri Lanka. Next section presents concussions and recommendations based on these findings.~~

4. Discussion

This study aimed at investigating the policy initiatives on national innovation from the rationality perspectives for policy analysis. Main documents relating to national innovation policy initiatives and secondary data sources were used in the empirical stage of the study while experts in the field were interviewed to collect their opinions and get clarifications for unclear areas. Features of effective policy design and factors affecting the effective implementation were investigated with the theoretical support of rationality model to draw conclusion about effectiveness of policy designing and implementation.

On the whole, the 'Policy' as well as the 'Strategy' provides a broad range of strategic goals objectives and initiatives for the formulation of world-class national innovation system for Sri Lanka. The process of the implementation of the Policy and the Strategy is also separately documented to meet main features of clarity, accuracy, standardization and ability of monitoring which are presented in the rationality model to decide designing effectiveness. However, the major weakness is arising with the consistency and compatibility with the two documents. The Strategy is not based on the Policy document which should be all the strategic actions to meet national innovation goals. The strategy document has surpassed the content of the policy regarding some points being broader than the contents in the Policy. Hence, this alignment if strongly recommended in the next policy initiative on national level innovation needs revision. Broadening scope is even possible by revising the Policy. Anyway, this revision has to be effected before the formulation of the Strategy and the Strategy should follow the Policy.

In addition to the incompatibility in the design stage, role assignment among the actors of the innovation policy is also not clear enough. Furthermore, it suggests several new institutions and mechanisms instead of assigning roles to the already existing national-level bodies by duplicating functions and requesting more resources for the establishment of such entities. Setting up new establishments is not an easy task within the resource-constrained conditions faced by the government subsequent to the long term internal war situation. Therefore, understanding the existing large number of institutions which are mostly underutilized, examining roles and functions of those institutes and obtaining their maximum contribution through effective management and coordination mechanism are strongly recommended in this study.

The factors affecting the effective implementation of the innovation were investigated in this study to address second research question. According to the factors suggested by rationality model, viz: 1. Clarity of setting goals and objectives and 2. Introducing structured process for the implementation are positive factors associated with innovation policy of Sri Lanka. However, the other three, viz: 3. Commitment for implementation, 4. Adequate resource allocation, and 5. Excellent Coordination and communication are the missing factors revealed in this study. The next policy initiative on innovation should take these missing areas into consideration. Institutional support and contribution for the implementation assigning responsibility and accountability to meet goals and objectives, sufficient funding allocation with national-level commitment as well as clear and unidirectional coordination mechanism with proper communication are recommended actions to be included in the next policy formulation initiative.

Albeit, the government has realized the importance of policy intervention in the field and attempted to create a strategic framework with target-oriented actions it can be concluded that implementation part has been abandoned based on the investigations of this study. Hence, the achievement of the set goals and objectives in the Policy and the Strategy still remain below the level of expectation. Resource allocations as well as dedication to allocate resources were recorded as one of the weakest aspects in addition to lack of focused attention on all related national-level initiatives. □

There are a large number of intuitions working on the formulation and implementation of the national innovation policy and strategies. According to the findings of this study, it is difficult to find a strong coordination mechanism to connect different institutions to a strategic apex body. Although NASTEC has been established for this purpose, the main role of NASTEC is limited to creation of an evaluation mechanism and carrying out evaluations. It was restricted to engagement of post-evaluation activities due to the fact that no clear mandate exists in order to govern other S&T institutions. Meanwhile, it was observed that the Coordinating Secretariat for Science, Technology and Innovation (COSTI) had been established in 2013, aiming at coordination and

monitoring of Science, Technology and Innovation activities. This was a one strategic action presented in the Strategy document and initiative to address the coordination and communication function of the policy. However, it is too early to present opinions on its functioning as there is still no proper assessment on the role played by COSTI yet.

It is of paramount importance to draw prompt attention of policy makers, strategists, government and other related institutions apropos of this policy. Absence of commitment, resource allocation, coordination and communication mechanism, following up process and mechanism for overseeing the different roles played by S&T institutions have created repetition of the functions, resource misappropriation as well as underutilization of resources and funds in this fragmented innovation system of Sri Lanka. Hence, a follow-up process is a compulsory requirement to ensure the achievements of the policy goals and objectives. This follow-up process should be facilitated with a national-level data collection and processing system to make timely statistics and information required to make timely decisions on the innovation system. Lack of such data collection and processing mechanisms creates an obstacle for researchers in conducting comprehensive studies in this policy domain.

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Clustering Neural Network Analysis of Recreational Fisheries Management Strategies

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Abstract
This study utilized data extracted from the 2013 National Saltwater Angler Survey to understand saltwater recreational anglers' preferences toward recreational fisheries management strategies, to identify groups exhibiting common patterns of responses, and to examine the association between socio-demographic characteristics and the groups identified. Saltwater recreational anglers' preferences toward recreational fisheries management strategies were examined through factor analysis which identified four reliable factors. Cluster analysis was employed to identify three prominent recreational angler groups. Statistical tests were employed to investigate the association between socio-demographic characteristics, including age, gender, income level, educational level, region of the respondent, and the identified recreational angler groups. The multilayer perceptron neural network model was utilized as a predictive model in deciding recreational anglers' preferences toward recreational fishing management strategies. From an architectural perspective, it showed a 15-7-3 neural network construction. The results also revealed that fisheries habitat development and bag limit consideration were the greatest effect on how the recreational anglers' preferences in terms of recreational fisheries management strategies. Results of this study may provide insight regarding the preferences toward recreational fisheries management strategies from saltwater recreational anglers as an indicator of potential participation and behavior of saltwater recreational fisheries management.

Keywords: Saltwater, Recreational Anglers, Preferences, Recreational Fisheries Management Strategies, Factor Analysis, Cluster Analysis, Discriminant Analysis, Multilayer Perceptron, Neural Network

1. Introduction

The National Oceanic and Atmospheric Administration (NOAA) is responsible for the management, conservation, and protection of living marine resources within the United States. *A Vision for Managing America's Saltwater Recreational Fisheries* (The Commission on Saltwater Recreational Fisheries Management, 2014) outlined a new paradigm for conserving marine fishing resources while producing the full range of saltwater recreational fishing's economic, social, and conservation benefits.

In 2011, approximately 11 million Americans saltwater fished recreationally, spending $27 billion in pursuit of their sport. That activity generated more than $70 billion in economic output and sustained 450,000 jobs. Anglers also contributed more than $1.5 billion annually to fisheries habitat and conservation via excise taxes and license fees alone (The Commission on Saltwater Recreational Fisheries Management, 2014). From 2006 to

2015, the total number of anglers has decreased by 33.1%. The number of angler trips also decreased by 27% during that same time period (National Marine Fisheries Service, 2017). Although these decreases may reflect recessionary economic conditions, recreational fisheries management strategies are in need of an update and may benefit from placing more emphasis on recreational fishing on a federal level.

The primary law governing marine fisheries management in the United States, known as the Magnuson-Stevens Act, has never properly addressed the importance of recreational fishing and this has led to shortened or even cancelled seasons, reduced bag limits, and unnecessarily imposed restrictions. Recreational fishing in the United States has decreased significantly over the last decade. Increasingly aware of how important and integral recreational fishing is to the nation's commerce, NOAA has decided to create the U.S. National Saltwater Recreational Fisheries Policy to make this a "key focus of Agency action." Its major goals include: Support and maintain sustainable saltwater recreational fisheries resources, including healthy marine and estuarine habitats; Promote saltwater recreational fishing for the social, cultural, and economic benefit of the nation; Enable enduring participation in, and Enjoyment of, saltwater recreational fisheries through science-based conservation and management (National Marine Fisheries Service, 2015).

On April 6, 2017, the Modernizing Recreational Fisheries Management Act was introduced in the House of Representatives as HR 2023. It is designed to address federal saltwater management issues by adapting the federal system that has historically focused on commercial fishing to now meet the needs of the nation's saltwater anglers (National Marine Fisheries Service, 2017). Regardless of which recreational fisheries management strategies are implemented, understanding the preferences of the recreational anglers themselves when planning such strategy should increase the likelihood for successful implementation (Ihde et al., 2010). The key to the sustainability of recreational fisheries is good governance, which is transparent and provides for the stakeholders to feel adequately represented (Hilborn, 2007).

The main purpose of this paper was to explore segmentation of the recreational angler population based on certain preferences of interest regarding recreational fisheries management strategies using psychometric data, while also estimating the size of recreational angler subgroups that have been identified, which may be useful for saltwater recreational fisheries managers to prioritize and effectively allocate fisheries management initiatives and resources. Neural networks have been used in fisheries related research in forecasting, classification, distribution, and fisheries management since 1978 (Suryanarayana et al., 2008). Very few detailed studies have been carried out on understanding how saltwater recreational anglers perceive recreational fishing management strategies and specifically on the classification of this interest group of recreational anglers by using the statistical model identification based clustering neural network approach.

2. Clustering Neural Networks

Clustering using neural networks has recently demonstrated promising performance in machine learning and computer vision applications. It is widely used for pattern recognition, feature extraction, image segmentation, function approximation, and data mining. Clustering is a fundamental data analysis method, can be based on statistical model identification or competitive learning. Clustering of data is also a method, most commonly referred to as unsupervised learning technique as the grouping is based on a natural or inherent characteristic, by which large sets of data are grouped into clusters of smaller sets of similar data.

As an unsupervised classification technique, clustering identifies some inherent structures present in a set of objects based on a similarity measure. It is primarily concerned with distance measures and clustering algorithms which calculate the difference between data and divide them systematically. The K-means clustering algorithm (Forgy, 1965; MacQueen, 1967) is one of the simplest unsupervised learning algorithms that solves the well-known clustering problem. The procedure follows a simple and easy way to classify a given data set through a certain number of clusters fixed a priori.

On the other hand, classification, also known as supervised learning technique wherein machines learn from already labeled or classified data, is a process related to categorization, the process in which ideas and objects

are recognized, differentiated and understood. It is highly applicable in pattern recognition, statistics, and biometrics. Classification seeks to determine which explicit group a certain object belongs to, while clustering organizes objects with the aim to narrow down relations as well as learn novel information from hidden patterns.

Neural networks have emerged as an important tool for classification. A neural network is a mathematical procedure which is optimized, or taught, to produce some sort of output which is desired. This can be used for anything which needs to make some sort of prediction based on evidence which takes the same form of representation consistently. Neural networks are well suited to model complex relationships between inputs and outputs or to find patterns in data. Moreover, neural networks are used for clustering through unsupervised learning, which means you can group categorize labeled data.

The purpose of a neural network is to learn to recognize patterns in your data. Once the neural network has been trained on samples of your data, it can make predictions by detecting similar patterns in future data. The behavior of the neural network depends on the relationships and connections among individual components of the network. A neural network is a multilayer perceptron with simple connections between different components, is especially suitable for classification and is widely used in practice. In each layer, one or more processing unit(s) called artificial neurons or nodes are present which perform a simplified version of what human brain's neurons do (Manel et al., 1999). Gardner and Dorling (1998) define multilayer perceptron as: “a system of simple interconnected neurons, or nodes, which is a model representing a nonlinear mapping between an input vector and an output vector”.

There are three main neural layers in each neural network: The first layer which is called the input layer is where the data enters the network and is then transferred to the processors. The second layer is called hidden layer. This layer functions by receiving the inputs from the input layer and by considering the weights of the relationships among different input units and hidden units. These weights determine when the hidden layer should be activated. The last layer is called the output layer. The functionality of this layer depends upon the activities of hidden layer and the weights between hidden units and output units. Multilayer perceptron uses backpropagation to classify instances, which is one of the most widely used neural network techniques in data analysis (Rumelhart, Hinton, and Williams, 1986; Chauvin and Rumelhart, 1995).

3. Materials and Methods

The data used in this study was extracted from the 2013 National Saltwater Angler Survey (Brinson and Wallmo, 2013), which was developed by the NOAA Fisheries and collected by CIC Research. The survey targeted saltwater anglers, 16 years of age and older, who had been saltwater fishing at least once in their lives. The survey was designed to elicit various data related to their participation, fishing preferences, and attitudes. The survey was implemented in six regions in the United States, including North Atlantic, Mid-Atlantic, South Atlantic, Gulf of Mexico, West Coast, and Alaska.

Respondents were asked, “Please state your preference for using each strategy listed below,” to indicate 15 statements regarding optional recreational fisheries management strategies, using a Likert-type scale that ranged from 1 (do not prefer at all) through 4 (strongly prefer), and 5 (I am unsure). This study examined the psychometric properties of recreational fisheries management strategies from the 7764 saltwater anglers who provided complete information for all 15 optional statements (Table 1).

First, the dimensionality of the 15-item recreational fisheries management strategies was assessed by examining the factor solution (Gerbing and Anderson, 1988). Specifically, the amount of variance explained by the extracted factors (i.e., their eigenvalues) was noted. In addition, item-factor correlations (i.e., factor loadings) and other indices of model adequacy were examined. A principal component analysis was used to determine the factors identified to the sample in this study. Second, a K-means cluster analysis was conducted to identify respondent groups exhibiting common patterns of responses. Third, a series of statistical tests was utilized to examine the association between socio-demographic characteristics and the identified clusters. Fourth, a

multilayer perceptron neural network model was employed as a predictive model in deciding the saltwater anglers' preferences toward recreational fishing management strategies.

Table 1: Descriptive Statistics of Recreational Fisheries Management Strategies

Strategy	Please state your preference for using each strategy listed below	Mean	S.D.	Communalities
Strategy01	Establish minimum size limits of the fish you can keep	3.32	0.92	0.637
Strategy02	Establish minimum size limits of the fish you can keep	2.72	1.26	0.545
Strategy03	Limit the total number of fish you can keep	3.12	1.02	0.593
Strategy04	Manage some species as catch-and-release only	2.75	1.24	0.486
Strategy05	Establish longer seasons with more restrictive bag limits	2.59	1.31	0.375
Strategy06	Establish shorter seasons with less restrictive bag limits	2.02	1.38	0.705
Strategy07	Establish shorter seasons with a larger variety of species you can legally catch	2.25	1.41	0.673
Strategy08	Increase the recreational harvest limit by decreasing the commercial harvest limit	3.05	1.27	0.525
Strategy09	Divide the recreational harvest limit among different modes (e.g. private anglers and for-hire/charter boat anglers)	2.64	1.38	0.368
Strategy10	Restrict certain types of fishing gear	2.74	1.35	0.330
Strategy11	Require the use of release techniques that reduce fish mortality	3.20	1.08	0.451
Strategy12	Provide artificial fish habitat (e.g. artificial reef) in some areas of the ocean	3.43	0.95	0.513
Strategy13	Protect and restore fish habitat that has been degraded	3.61	0.72	0.505
Strategy14	Designate some areas of the ocean as marine reserves with catch-and-release fishing only	2.99	1.23	0.724
Strategy15	Close some areas of the ocean for certain seasons	2.77	1.37	0.674

(Strongly prefer = 4, Somewhat prefer = 3, Slightly prefer = 2, Do not prefer at all = 1, I am unsure = 5)

4. Results

4.1 Factor Analysis

Factor analysis uses mathematical procedures for the simplification of interrelated measures to discover patterns in a set of variables (Child, 2006). In this study, the original 15-item recreational fisheries management strategies was factor analyzed with varimax rotation, providing a clearer separation of the factors. As a result of the exploratory factor analysis, four factors were identified. The KMO measure of sampling adequacy was 0.821, which met the fundamental requirements for factor analysis. The Bartlett's test of Sphericity showed that nonzero correlations existed at the significance level of 0.001 (Table 2).

The Cronbach's alpha, developed by Lee J. Cronbach in 1951, is the most widely used measure of reliability which is an assessment of the degree of consistency between multiple measurements of a variable. The internal consistency coefficient score of the 15-item recreational fisheries management strategies showed the Cronbach's alpha of 0.793, which was acceptable. Each of these four factors had a satisfactory Cronbach's alpha of 0.696, 0.637, 0.659, and 0.716, respectively, which explained a cumulative 54.025 percent of the variance in statement response (Table 2).

Table 2: Factor Analysis of Recreational Fisheries Management Strategies

Please state your preference for using each strategy listed below	*Keep Limits*	*Catch Limits*	*Season Limits*	*Zone Limits*
Establish minimum size limits of the fish you can keep	0.779			
Establish maximum size limits of the fish you can keep	0.710			
Limit the total number of fish you can keep	0.742			
Manage some species as catch-and-release only	0.495			
Establish longer seasons with more restrictive bag limits			0.481	
Establish shorter seasons with less restrictive bag limits			0.835	

Establish shorter seasons with a larger variety of species you can legally catch			0.809	
Increase the recreational harvest limit by decreasing the commercial harvest limit		0.628		
Divide the recreational harvest limit among different modes		0.462		
Restrict certain types of fishing gear		0.431		
Require the use of release techniques that reduce fish mortality		0.521		
Provide artificial fish habitat (e.g. artificial reef) in some areas of the ocean		0.696		
Protect and restore fish habitat that has been degraded		0.604		
Designate some areas of the ocean as marine reserves with catch-and-release fishing only				0.810
Close some areas of the ocean for certain seasons				0.783
Eigenvalue	2.198	2.046	1.939	1.920
% of variance	14.656	13.640	12.926	12.802
Cumulative %	14.656	28.297	41.223	54.025
Reliability Alpha Coefficient	0.696	0.637	0.659	0.716
Reliability Alpha Coefficient of All 15 Items = 0.793				
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy = 0.821				
Bartlett's Test of Sphericity: Approx. Chi-Square = 25364.604, $df = 105$, $p < 0.001$				

Each factor was named by examining the content of the variable making the greatest contribution to each of the dimensions. An initial interpretation of these factors suggested that Factor 1, named *Keep Limits* factor, comprised four items (structure coefficients ranging from 0.779 to 0.495) and explained 14.656 percent of the variance with an eigenvalue of 2.198. Factor 2, which emphasized *Catch Limits* factor, comprised six items (structure coefficients ranging from 0.696 to 0.431) and explained 13.640 percent of the variance with an eigenvalue of 2.046. Factor 3, which focused on *Season Limits* factor, comprised three items (structure coefficients ranging from 0.835 to 0.481) and explained 12.926 percent of the variance with an eigenvalue of 1.939. Factor 4 named on *Zone Limits* factor comprised only two items (structure coefficients ranging from 0.810 to 0.783) and explained 12.802 percent of the variance with an eigenvalue of 1.920 (Table2).

4.2 Cluster Analysis

Cluster analysis technique assigns objects to groups so that there is as much similarity within groups, and difference between groups, as possible (Churchill and Iacobucci, 2005). Factor scores of recreational fisheries management strategies dimensions were used to cluster recreational anglers. The K-means clustering method was used to identify a solution with the specified number of clusters. Consequently, a three-cluster solution was agreed upon, which were labeled as *Zonal and Catch Restrictions*, *Keep and Catch Restrictions*, and *Seasonal Restrictions* clusters (Table 3).

The *Zonal and Catch Restrictions* cluster, with 29.0 percent of the respondents, was named after the positively strong association with *Zone Limits* and *Catch Limits*, but negatively identified with *Keep Limits* and *Season Limits*. Furthermore, the *Zonal and Catch Restrictions* cluster demonstrated more preference for prohibiting recreational fishing in certain geographic areas or zones and for fish population development.

The *Keep and Catch Restrictions* cluster was the largest group comprising of approximately 44.8 percent of the respondents. These respondents were positively associated with *Keep Limits* and *Catch Limits*, but negatively identified with *Season Limits* and *Zone Limits*. Furthermore, the *Keep and Catch Restrictions* cluster also demonstrated more preference for various restrictions related to fish caught and for fish population development.

The *Seasonal Restrictions* cluster was the smallest group, comprising of approximately 26.2 percent of the respondents, named because of the positive factor score associated with *Season Limits* and negatively identified with *Catch Limits*, *Zone Limits*, and *Keep Limits* among these respondents. Furthermore, the *Seasonal Restrictions* cluster demonstrated more preference for prohibiting recreational fishing during certain times of year or seasons.

Table 3: Cluster Analysis of Saltwater Recreational Anglers

	Zonal and Catch Restrictions	*Keep and Catch Restrictions*	*Seasonal Restrictions*
Keep Limits	-0.977	0.696	-0.109
Catch Limits	0.352	0.387	-1.052
Season Limits	-0.193	-0.209	0.571
Zone Limits	0.441	-0.012	-0.468
n = 7764	2252	3479	2033
Percentage	29.0	44.8	26.2

4.3 Discriminant Analysis

Discriminant analysis is a statistical technique to classify the target population into the specific categories or groups based on the certain attributes (predictor variables or independent variables) (Fisher, 1936; Tabatchnick and Fidell, 2013). Results of the cluster analysis were tested for accuracy using the linear discriminant analysis employed as a useful complement to cluster analysis, which is used primarily to predict membership in two or more mutually exclusive groups. In this case, the Wilk's Lambda scores were 0.193 ($\chi^2 = 12763.468$, $df = 8$, $p < 0.001$) and 0.471 ($\chi^2 = 5839.489$, $df = 3$, $p < 0.001$) for both discriminant functions, respectively, indicating that group means were significantly different. The canonical correlation results were both above 0.7, supporting that there were strong relationships between the discriminant score and the cluster membership (Table 4).

Table 4: Canonical Correlation of Discriminant Functions

Function	Eigenvalue	% of Variance	Canonical Correlation
1	1.441*	56.2	0.768
2	1.122*	43.8	0.727

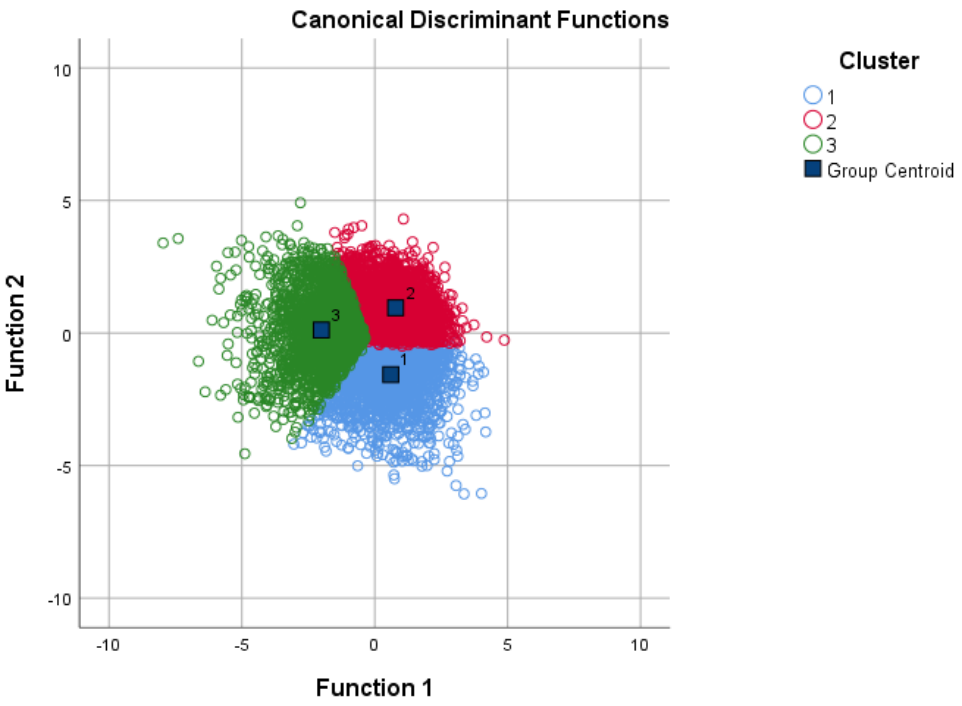
* First 2 canonical discriminant functions were used in the analysis.

Two discriminant functions were formulated (Table 5). The first function is a function for discriminating between *Zonal and Catch Restrictions*, *Keep and Catch Restrictions* and *Seasonal Restrictions* clusters combined, and the second function for discriminating between *Keep and Catch Restrictions* and *Seasonal Restrictions* clusters, respectively. The first function is the most powerful differentiating dimension, but the second function may also represent additional significant dimensions of differentiation. Though mathematically different, each discriminant function is a dimension which differentiates a case into categories of the dependent variable, the three identified recreational angler groups, based on its values on the independent variables. Furthermore, the territorial map is a tool for assessing discriminant analysis results by plotting the group membership of each case on a graph (Figure 1).

Table 5: Standardized Canonical Discriminant Function Coefficient

	Function 1	Function 2
Keep Limits	0.158	0.989
Catch Limits	0.992	-0.040
Season Limits	-0.650	0.028
Zone Limits	0.510	-0.391

Figure 1: Territorial Map



(1 = *Zonal and Catch Restrictions* cluster; 2 = *Keep and Catch Restrictions* cluster; 3 = *Seasonal Restrictions* cluster)

The classification results based on discriminant analysis (Table 6), 2252 cases fell into the *Zonal and Catch Restrictions* cluster, 3479 fell into the *Keep and Catch Restrictions* cluster, and 2033 fell into the *Seasonal Restrictions* cluster in the original row total, which is the frequencies of groups found in the data. Across each row, how many of the cases in the group can be classified by this analysis into each of the different groups. For example, of the 2252 cases that were in the *Zonal and Catch Restrictions* cluster, 2172 were predicted correctly and 80 were predicted incorrectly (61 were predicted to be in the *Keep and Catch Restrictions* cluster and 19 were predicted to be in the *Seasonal Restrictions* cluster).

Predicted group membership indicates the predicted frequencies of groups from the analysis. The numbers going down each column indicate how many were correctly and incorrectly classified. For example, of the 2200 cases that were predicted to be in the *Zonal and Catch Restrictions* cluster, 2172 were correctly predicted, and 28 were incorrectly predicted (20 cases were in the *Keep and Catch Restrictions* cluster and 8 cases were in the *Seasonal Restrictions* cluster) (Table 6).

Table 6: Classification Results[a] Based on Discriminant Analysis

		Cluster	Predicted Group Membership			
			Zonal & Catch	Keep & Catch	Seasonal	Total
Original	Count	Zonal & Catch	2172	61	19	2252
		Keep & Catch	20	3416	43	3479
		Seasonal	8	8	2017	2033
	%	Zonal & Catch	96.4	2.7	0.8	100
		Keep & Catch	0.6	98.2	1.2	100
		Seasonal	0.4	0.4	99.2	100

a. 98.0% of original grouped cases correctly classified
(Zonal & Catch = *Zonal and Catch Restrictions* cluster; Keep & Catch = *Keep and Catch Restrictions* cluster; Seasonal = *Seasonal Restrictions* cluster)

4.4 Statistical Tests

Using the Chi-square test, the three identified recreational angler groups demonstrated significant differences in gender composition ($\chi^2 = 11.251$, $df = 2$, $p = 0.004$) (Table 7), and in region composition ($\chi^2 = 61.582$, $df = 10$, $p = 0.000$) (Table 8). But there were no significant differences in income composition ($\chi^2 = 19.208$, $df = 14$, $p = 0.157$) (Table 9), and in education composition ($\chi^2 = 7.163$, $df = 8$, $p = 0.519$) (Table 10) among the three identified recreational angler groups, respectively.

Table 7: Gender Composition of the Saltwater Recreational Angler Clusters

Gender / Cluster	Zonal and Catch Restrictions	Keep and Catch Restrictions	Seasonal Restrictions	Total
Male	1840	2959	1720	6501
Female	412	520	331	1263
Total	2252	3479	2033	7764

Table 8: Region Composition of the Saltwater Recreational Angler Clusters

Region / Cluster	Zonal and Catch Restrictions	Keep and Catch Restrictions	Seasonal Restrictions	Total
Alaska	63	61	59	183
West Coast	294	511	372	1177
North Atlantic	285	468	329	1082
Mid-Atlantic	550	817	386	1753
South Atlantic	504	807	432	1743
Gulf of Mexico	556	815	455	1826
Total	2252	3479	2033	7764

Table 9: Income Composition of the Saltwater Recreational Angler Clusters

Income Level / Cluster	Zonal and Catch Restrictions	Keep and Catch Restrictions	Seasonal Restrictions	Total
Less than $20,000	139	210	137	486
$20,000-$39,999	307	417	292	1016
$40,000-$59,999	368	596	314	1278
$60,000-$79,999	352	572	322	1246
$80,000-$99,999	350	497	309	1156
$100,000-$149,999	433	651	384	1468
$150,000-$199,999	142	256	145	543
$200,000 or more	161	280	130	571
Total	2252	3479	2033	7764

Table 10: Education Composition of the Saltwater Recreational Angler Clusters

Educational Level / Cluster	Zonal and Catch Restrictions	Keep and Catch Restrictions	Seasonal Restrictions	Total
12th Grade or less	162	262	164	588
High school graduate or GED	536	797	506	1839
Associate or technical school degree or college coursework	691	1048	594	2333
Bachelor's degree	495	811	469	1775
Advanced, professional, or doctoral degree or coursework	368	561	300	1229
Total	2252	3479	2033	7764

Table 11: Cluster Means of the Saltwater Recreational Angler Clusters

Dependent Variable	Zonal and Catch Restrictions		Keep and Catch Restrictions		Seasonal Restrictions		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Years of Fishing	27.65	17.504	29.07	17.636	25.20	17.382	27.64	17.600
Age	52.44	13.832	53.40	13.801	51.36	14.402	52.59	13.993

The results of one-way ANOVA showed that significant differences in age ($F(2, 7761) = 13.781$, $p < 0.001$) and years of fishing ($F(2, 7761) = 31.273$, $p < 0.001$) were found within the three identified recreational angler groups (Table 11). Furthermore, a one-way multivariate analysis of variance (MANOVA) was employed. The independent variable studied was *Cluster*, the three identified recreational angler groups. The dependent variables considered were age and years of fishing. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted.

The Box's Test of Equality of Covariance Matrices checks the assumption of homogeneity of covariance across the groups using $p < 0.001$ as a criterion. The results of the Box's Test of Equality of Covariance Matrices showed that there were no significant differences between the covariance matrices – as Box's M = 9.086, $F = 1.514$, $p = 0.169 > \alpha = 0.001$. Therefore, the assumption is not violated and Wilk's Lambda is an appropriate test to use.

A one-way MANOVA revealed a significant multivariate main effect for the three identified recreational angler groups, Wilks' Lambda = 0.992, $F(4, 15520) = 16.304$, $p < 0.001$, partial eta squared = 0.004. Power to detect the effect was 1.000. Given the significance of the overall test, the univariate main effects were examined. Significant univariate main effects for the three identified angler groups were obtained for age, $F(2, 7761) = 13.781$, $p < 0.001$, partial eta square = 0.004, power = 0.998; and years of fishing, $F(2, 7761) = 31.273$, $p < 0.001$, partial eta square = 0.008, power = 1.000.

According to the post-hoc comparisons with the Tukey HSD test, significant clustering pairwise differences were obtained both in age and years of fishing between the *Zonal and Catch Restrictions* cluster and both *Keep and Catch Restrictions* and *Seasonal Restrictions* clusters (Table 12).

Table 12: Post Hoc (Tukey HSD) Test among the Saltwater Recreational Angler Clusters

Dependent Variable	Group (I)	Group (J)	Mean Difference (I-J)	Std. Error	Sig.
Years of Fishing	Zonal and Catch Restrictions	Keep and Catch Restrictions	-1.42	0.474	0.008
	Zonal and Catch Restrictions	Seasonal Restrictions	2.45	0.536	0.000
	Keep and Catch Restrictions	Seasonal Restrictions	3.87	0.489	0.000
Age	Zonal and Catch Restrictions	Keep and Catch Restrictions	-0.96	0.378	0.030
	Zonal and Catch Restrictions	Seasonal Restrictions	1.07	0.427	0.032
	Keep and Catch Restrictions	Seasonal Restrictions	2.03	0.390	0.000

4.5 Multilayer Perceptron Neural Network Model

After the formation of the three identified recreational angler groups, a multilayer perceptron (MLP) neural network model was employed as a predictive model in deciding the recreational anglers' preferences toward recreational fishing management strategies. The Multilayer Perceptron Module of IBM SPSS Statistics 26 was used to build the neural network model and test its accuracy. The MLP neural network model, trained with a

back-propagation learning algorithm which uses the gradient descent to update the weights towards minimizing the error function.

The aim of this analysis was to examine whether a MLP neural network model can help saltwater recreational fisheries managers to correctly predict recreational fishing management strategies, by analyzing data obtained from the saltwater recreational anglers. The data were randomly assigned to training (70%) and testing (30%) subsets. The training dataset is used to find the weights and build the model, while the testing data is used to find errors and prevent overtraining during the training mode (Table 13).

Table 13: Case Processing Summary

		N	Percent
Sample	Training	5410	69.7%
	Testing	2354	30.3%
Valid		7764	100.0%
Excluded		0	
Total		7764	

Neural network model is constructed with the multilayer perceptron algorithm. In order to find the best neural network, disparate possible networks were tested and it was concluded that neural network with a single input layer, a single hidden layer, and a single output layer was the best option for this study. Previous studies have found that using neural network with a single input layer, a single hidden layer, and a single output layer is advantageous. Sheela and Deepa (2013) pointed out that as the number of neurons or the number of layers of a neural network increase, the training error also increases due to the overfitting. It is clear that using a single input layer, a single hidden layer, and a single output layer in the neural network will help to decrease the probability of overfitting and will require relatively lower computational time.

One of the most salient considerations in the construction of neural network is choosing activation functions for hidden and output layers that are differentiable. The results showed that in this study, a hyperbolic tangent activation function should be used for the single hidden layer of the model and linear activation function should be used for the output layer. The Multilayer Perceptron Module of IBM SPSS Statistics 26 was used as the tool to choose the best architecture model automatically and it built the network with one hidden layer. From the fifteen independent variables, automatic architecture selection chose 7 nodes for the hidden layer, while the output layer had 3 nodes to code the depended variable *Cluster*. For the hidden layer the activation function was the hyperbolic tangent, while for the output layer used the softmax function. Cross entropy was used as error function because of the use of softmax function (Table 14).

Table 14: Network Information

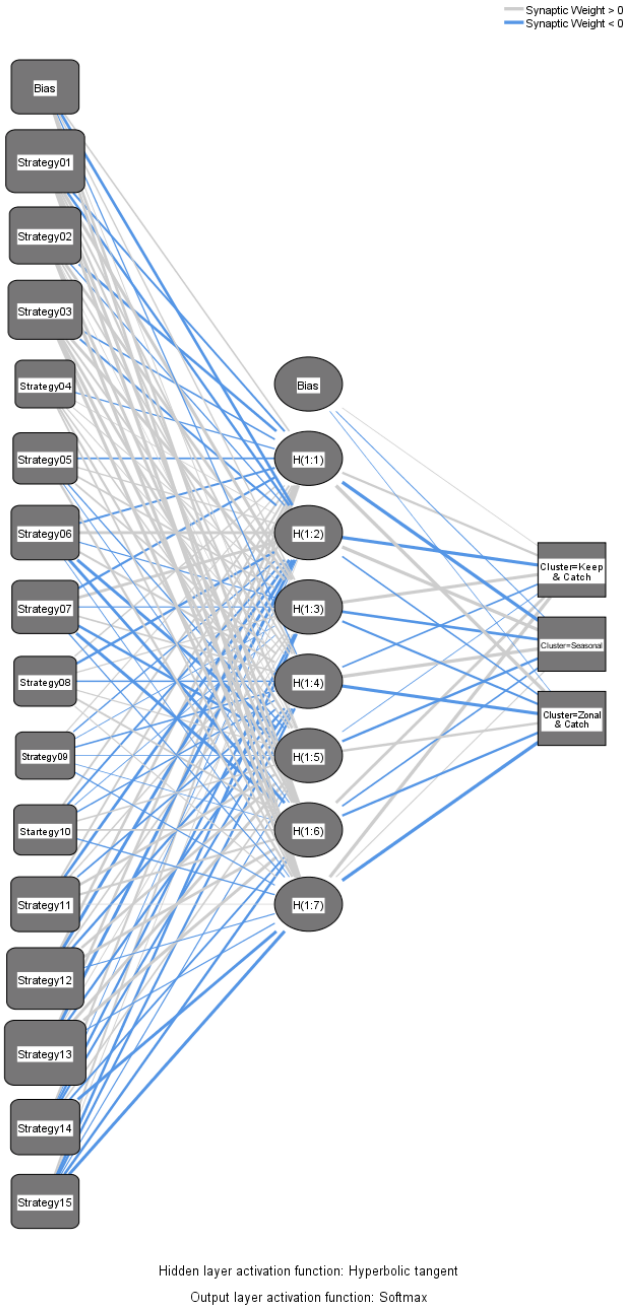
Input Layer	Covariates	1	Strategy01
		2	Strategy02
		3	Strategy03
		4	Strategy04
		5	Strategy05
		6	Strategy06
		7	Strategy07
		8	Strategy08
		9	Strategy09
		10	Strategy10
		11	Strategy11
		12	Strategy12
		13	Strategy13
		14	Strategy14
		15	Strategy15
	Number of Units[a]		15
	Rescaling Method for Covariates		Standardized
Hidden Layer(s)	Number of Hidden Layers		1

	Number of Units in Hidden Layer 1[a]		7
	Activation Function		Hyperbolic tangent
Output Layer	Dependent Variables	1	Cluster
	Number of Units		3
	Activation Function		Softmax
	Error Function		Cross-entropy

a. Excluding the bias unit

The network diagram showed the 15 input nodes, the 7 hidden nodes and the three output nodes representing the three identified recreational angler categories. In the architectural point of view, it was a 15-7-3 neural network, means that there were total 15 independent (input) variables, 7 neurons in the hidden layer and 3 dependent (output) variables (Figure 2).

Figure 2: Network Diagram



The model summary provided information related to the results of training and testing sample (Table 15). Cross entropy error is displayed because the analysis is based on softmax activation function, and is given for both training and testing sample since is the error function that neural network minimizes during the training phase. The value of cross entropy error (= 111.918) indicated the power of the model to predict the three identified recreational angler groups. The cross entropy error was less for the testing sample compared with the training data set, meaning that the neural network model had not been overfitted to the training data and has learned to generalize from trend. The result justified the role of testing sample which was to prevent overtraining.

In this study the percentage of incorrect prediction was equal to 0.3% in the training sample. So the percentage of correct prediction was 99.7% which is an excellent prediction in a qualitative study for determining management results of recreational fisheries management strategies. The learning procedure was performed until 1 consecutive step with no decrease in error function was attained from the training sample.

Table 15: Model Summary

Training	Cross Entropy Error	111.918
	Percent Incorrect Predictions	0.3%
	Stopping Rule Used	1 consecutive step(s) with no decrease in error[a]
	Training Time	0:00:01.67
Testing	Cross Entropy Error	53.188
	Percent Incorrect Predictions	0.5%

Dependent Variable: Cluster

a. Error computations are based on the testing sample.

Using the training sample only, MLP neural network utilized synaptic weights to display the parameter estimates that showed the relationship between the units in a given layer to the units in the following layer (Table 16). Note that the number of synaptic weights can become rather large and that these weights are generally not used for interpreting neural network results (IBM, 2019).

Table 16: Parameter Estimates

Predictor		Predicted									
		Hidden Layer 1							Output Layer		
		H(1:1)	H(1:2)	H(1:3)	H(1:4)	H(1:5)	H(1:6)	H(1:7)	Keep & Catch	Seasonal	Zonal & Catch
Input Layer	(Bias)	0.443	-1.342	0.393	-0.298	0.099	1.275	1.322			
	S01	-0.799	-0.985	2.046	0.810	0.882	2.174	3.055			
	S02	-1.161	-0.348	1.365	0.638	0.008	1.423	2.556			
	S03	-0.534	-0.871	1.493	0.736	1.246	2.112	2.516			
	S04	-0.360	0.063	0.219	0.181	0.433	0.884	0.696			
	S05	-0.645	0.399	0.688	0.689	-0.394	-0.151	0.920			
	S06	-0.843	1.554	-0.278	0.863	-1.708	-1.491	-0.102			
	S07	-0.897	1.407	-0.210	0.603	-1.117	-1.727	-0.297			
	S08	0.420	-1.028	0.320	-0.438	0.272	0.704	0.264			
	S09	0.248	-0.397	-0.100	-0.524	-0.058	-0.043	-0.278			
	S10	0.708	-0.775	-0.060	-0.432	0.449	0.668	-0.372			
	S11	0.742	-1.351	0.414	-0.659	1.086	0.890	0.000			
	S12	1.201	-1.823	0.582	-0.951	1.126	1.315	-0.231			
	S13	1.138	-1.717	0.160	-0.930	1.414	1.616	-0.267			
	S14	0.896	-0.123	-0.979	-0.891	0.506	-0.698	-1.703			
	S15	0.821	0.100	-1.146	-0.924	-0.245	-1.053	-1.961			
Hidden Layer 1	(Bias)								0.030	-0.171	-0.009
	H(1:1)								0.923	-3.689	3.699
	H(1:2)								-2.156	2.632	-0.459
	H(1:3)								1.869	-1.271	-0.877
	H(1:4)								-0.624	2.995	-2.071
	H(1:5)								-0.079	-0.995	1.001
	H(1:6)								1.488	-0.632	-0.971
	H(1:7)								3.510	0.189	-3.419

Based on the MLP neural network, a predictive model was developed and displayed a classification table (i.e. confusion matrix) for categorical dependent variable, the three identified recreational angler groups, by partition and overall (Table 17). As can be seen, the MLP neural network correctly classified 5395 recreational anglers

out of 5409 in the training sample and 2342 out of 2353 in the testing sample. Overall 99.7% of the training cases were correctly classified. The predictive model developed had excellent classification accuracy.

Using the training sample only, it was able to classify 2416 *Keep and Catch Restrictions* recreational anglers into the *Keep and Catch Restrictions* group, out of 2422. It held 99.8% classification accuracy for the *Keep and Catch restrictions* group. Similarly, the same model was able to classify 1417 *Seasonal restrictions* recreational anglers into the *Seasonal Restrictions* group out of 1421, and 1562 *Zonal and Catch Restrictions* recreational anglers into the *Zonal and Catch Restrictions* group out of 1569. It was able to generate 99.7% classification accuracy for both the *Seasonal Restrictions* and *Zonal and Catch Restrictions* groups (Table 17).

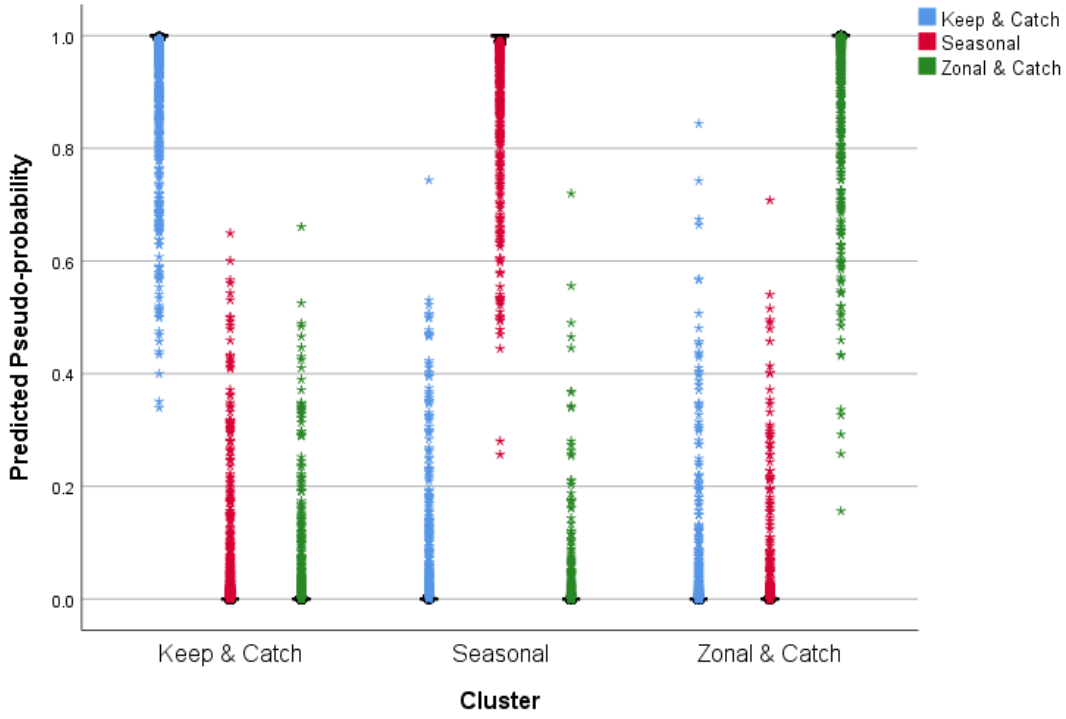
Table 17: Predictive Ability and Classification Results

Classification					
Sample	Observed	Predicted			
		Keep & Catch	Seasonal	Zonal & Catch	Percent Correct
Training	Keep & Catch	2416	5	1	99.8%
	Seasonal	3	1417	1	99.7%
	Zonal & Catch	3	2	1562	99.7%
	Overall Percent	44.8%	26.3%	28.9%	99.7%
Testing	Keep & Catch	1054	2	1	99.7%
	Seasonal	3	608	1	99.3%
	Zonal & Catch	4	1	680	99.3%
	Overall Percent	45.1%	26.0%	29.0%	99.5%

Dependent Variable: Cluster

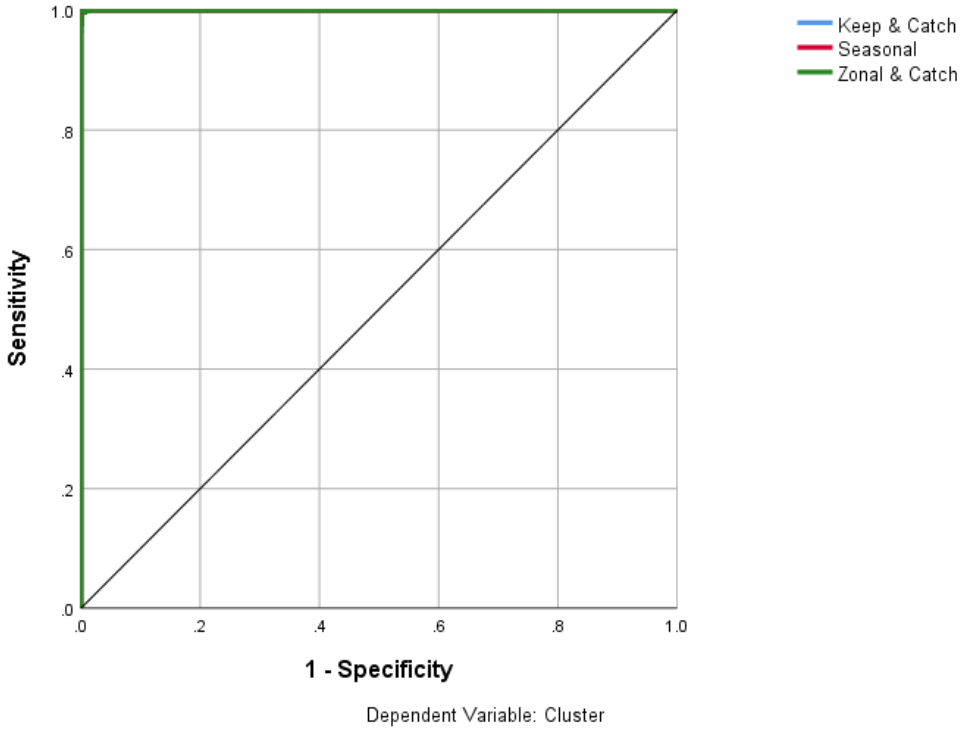
For the dependent variable *Cluster*, the following chart displayed boxplots that classified the predicted pseudo-probabilities based on the whole dataset (IBM, 2019). For each boxplot, the values above 0.5 show correct predictions. The first, from the left, boxplot showed the predicted probability of the observed *Keep and Catch Restrictions* recreational anglers to be in the *Keep and Catch Restrictions* category. The second and third boxplots showed that the probability for a recreational angler to be classified in *Keep and Catch Restrictions* category although he/she really was in *Seasonal Restrictions* and *Zonal and Catch Restrictions* categories, respectively. The fourth boxplot showed, for outcomes that have observed category *Seasonal Restrictions*, the predicted probability of category *Keep and Catch Restrictions*. The right boxplot showed, the probability a recreational angler who really *Zonal and Catch Restrictions* category to be classified in the *Zonal and Catch Restrictions* category (Figure 3).

Figure 3: Predicted-by-Observed Chart



The ROC curve is a diagram of sensitivity versus specificity that shows the classification performance for all possible cutoffs (IBM, 2019). It gives the sensitivity and specificity (= 1 – false positive rate) chart, based on the combined training and testing samples. The 45-degree line from the upper right corner of the chart to the lower left represents the scenario of randomly guessing the class. The more the curve moves away the 45-degree baseline, the more accurate is the classification (Figure 4).

Figure 4: ROC Curve



The area under the ROC curve (IBM, 2019) showed that, if a recreational angler from the *Keep and Catch Restrictions* category and a recreational angler from the *Seasonal Restrictions* category were randomly selected, there was 100% (1.000) probability that the model-predicted pseudo-probability for the first recreational angler of being in the *Keep and Catch Restrictions* category, was higher than the model-predicted pseudo-probability for the second recreational angler of being in the *Keep and Catch Restrictions* category (Table 18).

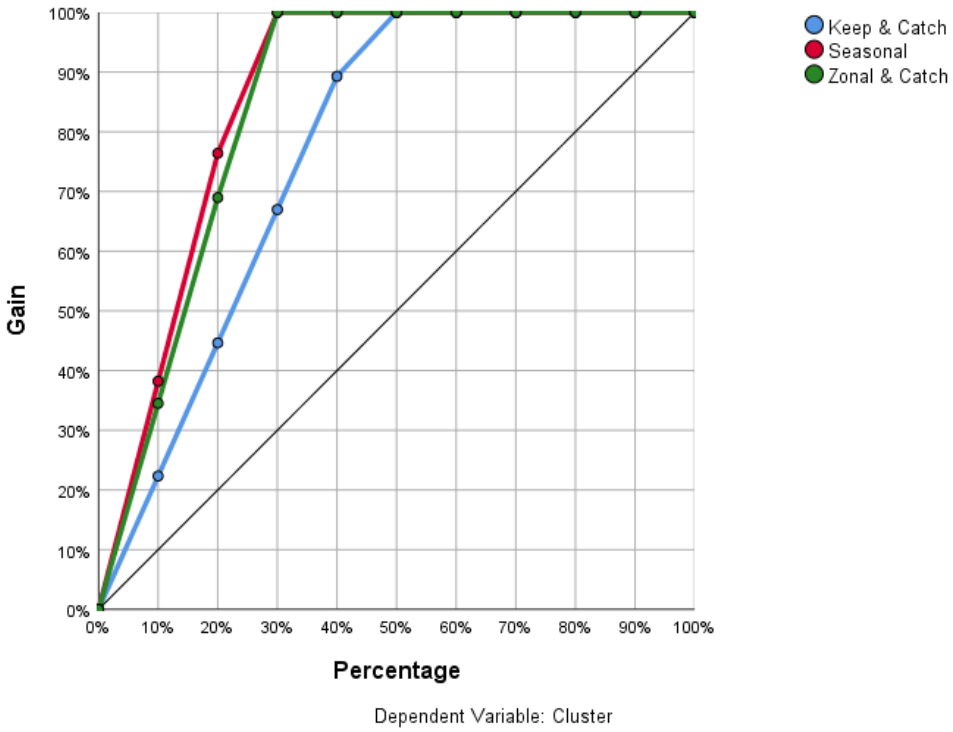
Table 18: Area under the Curve

		Area
Cluster	Keep & Catch	1.000
	Seasonal	1.000
	Zonal & Catch	1.000

The Cumulative Gains chart is the presentence of correct classifications obtained by the MLP neural network model against the correct classifications that could result by chance (i.e. without using the model) (IBM, 2019). Gain is a measure of the effectiveness of a classification model calculated as the percentage of correct predictions obtained with the model, versus the percentage of correct predictions obtained without a model (baseline). The farther above the baseline a curve lies, the greater the gain. A higher overall gain indicates better performance.

For example, the second point on the curve for the *Zonal and Catch Restrictions* category was at (20%, 70%), meaning that if the network score a dataset and sort all of the cases by predicted pseudo-probability of *Zonal and Catch Restrictions*, it would be expected the top 20% to contain approximately 70% of all of the cases that actually take the category *Zonal and Catch Restrictions*. The selection of 100% of the scored dataset, obtained all of the observed *Zonal and Catch Restrictions* cases in the dataset (Figure 5).

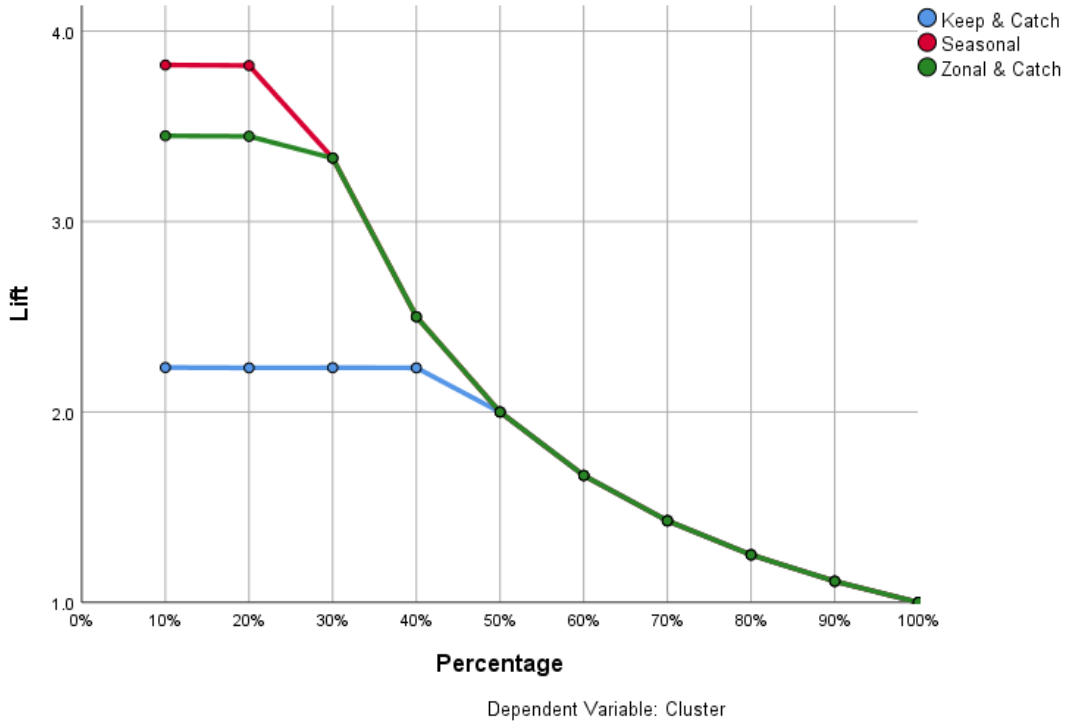
Figure 5: Cumulative Gains Chart



Lift chart, as well as cumulative gains chart, is visual aids for evaluating performance of classification models (IBM, 2019). However, in contrast to the confusion matrix that evaluates models on the whole population, gains or lift chart evaluates model performance in a portion of the population. A lift chart uses a part of the dataset to give a clear view of the benefit to use a model in contrast to not using a model. The values from the gains

diagram were used to calculate the lift factor (i.e. the benefit): the lift at 70% for the category *Zonal and Catch Restrictions* was 70%/20% = 3.5 (Figure 6).

Figure 6: Lift Chart



The importance of the individual independent variables (factor influencing recreational fisheries management strategies) is a measure of how much the neural network model predicted value changes for different independent variables. The input parameters -- recreational fisheries management strategies which influenced the three identified recreational angler groups have been ranked by the neural network model were given in the following Table 19.

The first three significant dominant factors that have been found were “protect and restore fish habitat that has been degraded” (100%), contributed the most in the neural network model construction, followed by “establish minimum size limits of the fish you can keep” (90.6%), and “provide artificial fish habitat (e.g. artificial reef) in some areas of the ocean” (84.1%), had the greatest effect on how the recreational anglers’ preferences, in terms of recreational fisheries management strategies. The next two important factors were “limit the total number of fish you can keep” (72.7%) and “establish maximum size limits of the fish you can keep” (63.5%).

The other factors were relatively not important such as “restrict certain types of fishing gear” (31.7%), “increase the recreational harvest limit by decreasing the commercial harvest limit” (30.3%), “manage some species as catch-and-release only” (20.7%), and the least important factor which has been identified was “divide the recreational harvest limit among different modes (e.g. private anglers and for-hire/charter boat anglers)” (18.1%).

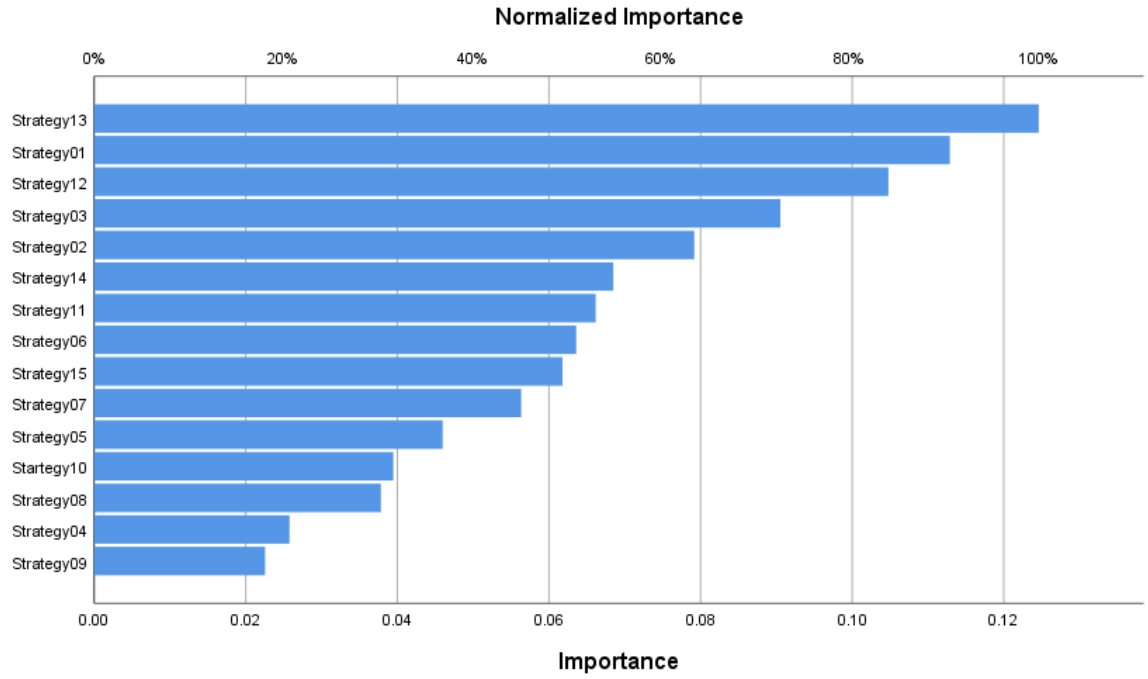
Table 19: Independent Variable Importance Analysis

Please state your preference for using each strategy listed below	Importance	Normalized Importance	Rank
Establish minimum size limits of the fish you can keep	0.113	90.6%	2
Establish maximum size limits of the fish you can keep	0.079	63.5%	5
Limit the total number of fish you can keep	0.091	72.7%	4
Manage some species as catch-and-release only	0.026	20.7%	14

Establish longer seasons with more restrictive bag limits	0.046	36.9%	11
Establish shorter seasons with less restrictive bag limits	0.064	51.0%	8
Establish shorter seasons with a larger variety of species you can legally catch	0.056	45.2%	10
Increase the recreational harvest limit by decreasing the commercial harvest limit	0.038	30.3%	13
Divide the recreational harvest limit among different modes (e.g. private anglers and for-hire/charter boat anglers)	0.023	18.1%	15
Restrict certain types of fishing gear	0.039	31.7%	12
Require the use of release techniques that reduce fish mortality	0.066	53.1%	7
Provide artificial fish habitat (e.g. artificial reef) in some areas of the ocean	0.105	84.1%	3
Protect and restore fish habitat that has been degraded	0.125	100.0%	1
Designate some areas of the ocean as marine reserves with catch-and-release fishing only	0.068	55.0%	6
Close some areas of the ocean for certain seasons	0.062	49.6%	9

Independent variable importance chart showed the impact of each independent variable in the MLP neural network model in terms of relative and normalized importance (IBM, 2019). Independent variable importance chart also depicted the importance of the independent variables, i.e. how sensitive is the model is the change of each input variable (Figure 7).

Figure 7: Independent Variable Importance Chart



5. Discussion and Conclusion

Understanding saltwater recreational anglers' preferences of recreational fisheries management strategies could be one of many critical factors to the effectiveness of responsive and adaptive marine resource management programs. This study attempted to provide insight into saltwater recreational anglers' preferences toward recreational fisheries management strategies. Thus, the main purpose of this paper was to explore segmentation of the recreational angler population based on certain preferences of interest regarding recreational fisheries management strategies using psychometric data, while also estimating the size of recreational angler subgroups that have been identified, which may be useful for saltwater recreational fisheries managers to prioritize and effectively allocate fisheries management initiatives and resources.

Through cluster analysis, three groups were identified based on similar recreational fisheries management strategy preferences. The largest of these three groups, *Keep and Catch Restrictions* cluster, was associated to preferences for restricting and developing recreational fishing, but not for the prohibition of recreational fishing based on geographic area, nor time of year. This preference is reflected within a number of studies, which have examined the motivations of recreational anglers. Non-catch motivations have been found to be more motivating than catch motivations. Recreational anglers are motivated by the benefits derived from the relaxation recreational angler's experience.

Both of the two largest clusters, the *Zonal and Catch Restrictions* and *Keep and Catch Restrictions* clusters, demonstrated positive, strong associations to the more sustainability-themed recreational fisheries management strategies. The creation of new fisheries habitat and the restoration of degraded fisheries habitat are two examples of such sustainability-themed recreational fisheries management strategies.

Furthermore, the benefits derived from the interaction with the natural environment provides significant motivation for recreational anglers (Driver and Knopf, 1976). In addition, recreational anglers are motivated by the benefits derived from the social interaction with friends and family experienced while recreationally fishing (Schroeder et al., 2008). As a result, recreational angler's acceptance of recreational fisheries management strategies, which include catch restrictions and long-term sustainable development, is likely. However, recreational fisheries management strategies, which prohibit fishing entirely, will be less acceptable. The most important incentive motivating anglers, related to recreational fisheries management, is dedicated access to fisheries (Hilborn, 2007).

Further analysis, utilizing the Chi-square test, did yield some significant difference among respondents based on their gender. Although females made up only 16% of the total respondents, they did demonstrate more preference for geographic/zone restrictions and less preference for catch restrictions compared to male respondents. Regarding regional differences, a higher proportion of the respondents preferring seasonal restrictions, for example, were located in the Alaska, West Coast, and North Atlantic regions.

Furthermore, a higher proportion of the respondents preferring geographic/zone restrictions were located in the Mid-Atlantic, South Atlantic, and Gulf of Mexico regions. Further differences and similar results related to both gender and region were identified through multinomial logistic regression analysis. Fewer differences among groups were identified related to socio-demographic variables including, respondent income, education, and age.

The neural network is widely considered as an efficient approach to adaptively classify patterns. In this work, an attempt was made to improve the learning capabilities of a multi-layered neural network and reduced the amount of time and resource required by the learning process by sampling the input dataset to be learnt using the K-means algorithm. The multilayer perceptron neural network analysis was employed as a predictive model in deciding recreational anglers' preferences toward recreational fishing management strategies. From an architectural perspective, it showed a 15-7-3 neural network. The results also revealed that fisheries habitat development and bag limit consideration were the greatest effect on how the recreational anglers' preferences in terms of recreational fisheries management strategies.

Developing insight into the preferences of saltwater anglers related to recreational fisheries management strategies may be critical to their successful implementation and acceptance. Continued monitoring of saltwater angler fisheries management strategy preferences will provide a more longitudinal perspective based on repeated observations over time to allow for further analysis and for the identification of change or differences related to each variable of concern. There is a lack of longitudinal perspective related to anglers' preferences and behavior (Tseng et al., 2012).

This study attempted to identify groups exhibiting common patterns of responses, and to examine the association between socio-demographic characteristics and which recreational fisheries management strategy they preferred. Results of this study may provide insight regarding the preferences toward recreational fisheries management

strategies from saltwater recreational anglers as an indicator of potential participation and behavior of saltwater recreational fisheries management.

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China's Engagement with Africa in Peace and Security

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Abstract
The Belt and Road is expanding and the need to provide security to the Chinese infrastructure projects (railways and sea roads) and to protect the interests of Chinese companies is growing. China's growing engagement with Africa is increasing the need for a more pro-active Chinese role in African security and for further support to Africa for achieving a balance between security and development. China has increased involvement in the UN peacekeeping in Africa, peace and security cooperation has become of the most important pillars of the comprehensive strategic partnership between China and Africa. The Belt and Road Initiative provides opportunities for strengthening China-Africa dialogue on peace and security which is an important driver for China-Africa relations.

Keywords: China, Africa, Comprehensive, Partnership, Peace, Security

Introduction

Within the UN framework, the international society makes efforts to provide assistance for peacekeeping and peace building in various states in Africa which face problems of political instability and crisis. The paper discusses the security dimension of Belt and Road Initiative in Africa. China has assumed a more active role in global security governance. It is argued that with China's increased economic interest and the growing presence of Chinese citizens in Africa, China has adopted a more flexible non-interference policy on the continent and China-Africa peace and security cooperation is strengthening. China has to keep the momentum to advance the dialogue and to keep peace and security issues in the agenda in the China-AU Strategic Dialogue. Economic development in Africa should be the main focus of China's approach to Africa as well as support Africa in tackling regional issues.

China has been the largest contributor of UN peacekeepers among the five permanent members of the Security Council and the second largest contributor of UN peacekeeping funding. At the UN framework, during the period 2018-19, the budget represents an average of 1.47% reduction on the approved budget for 2016-17. The top 10 providers of assessed contributions to United Nations Peacekeeping operations for 2018 are: United States (28.47%) China (10.25%) Japan (9.68%) Germany (6.39%) France (6.28%) United Kingdom (5.77%) Russian Federation (3.99%) Italy (3.75%) Canada (2.92%) Spain (2.44%)

Since the early 1990s, China had become a major contributor to UN peacekeeping missions. In 2000 marked a new stage in China's participation in UN peacekeeping; when a Chinese civilian police contingent was deployed in East Timor (UNTAET), while Chinese officials supported the reforms proposed in the report of the panel on

UN peacekeeping operations calling for strengthening of peacekeeping operations (PKOs). Since then, Chinese participation in peacekeeping missions has consistently increased; Chinese police units, engineering and medical troops have been sent on some of the most important UN operations, such as Bosnia (UNMIBH), Afghanistan (UNAMA), Democratic Republic of Congo (MONUC), Kosovo (UNMIK), Haiti (MINUSTAH), Darfur (UNAMID), Sudan (UNMIS) and South Sudan (UNMISS & UNISFA) and Lebanon (UNIFIL).

China towards Africa's Regional Security

Chinese peacekeepers are involved in several parts of the world, but are mostly in Africa. China has played a positive role in Africa's peace and security affairs. More specifically, China provides combat troops, civilian police, military observers, engineering battalions and medical units in missions in Africa. As a major economic partner, China plays a constructive role in helping the UN to solve crises and contribute to stability in the region. China has a naval logistical facility in Djibouti, which it has used as a base for rescuing Chinese citizens in conflict zones and has increased its contributions to United Nations peacekeeping in Africa; it has sent combat troops to Mali and South Sudan; and it has sent naval vehicles to the Gulf of Aden as part of international anti-piracy missions since 2009, providing protection to 7,000 Chinese and foreign vessels in nearly 2,000 groups. China's increased activity in Africa's security architecture has led to cooperation with other international actors such as the European Union on the ground. For instance, Dutch and Chinese troops have worked together as part of the UN-led Peacekeeping Operation in Mali (MINUSMA).

On the African continent, China has a major activity in peacekeeping and has fulfilled its responsibilities as a permanent member of the UN Security Council. Guided by the Belt and Road initiative principles for China-Africa relations, namely, sincerity, real results, amity and good faith and shared interests, China is committed to helping Africa build up its own peacekeeping capacity, addressing the root causes and pursuing win-win cooperation.

When attending the summits commemorating the 70th anniversary of the founding of the UN in September 2015, President Xi Jinping announced China's decision to establish a 10-year, US$1-billion China-UN peace and development fund. At China's proposal, the fund has prioritized peace and development initiatives of African countries. Among the 56 projects approved by the fund, African countries have been the major beneficiaries, with projects ranging from peacekeeping, counter-terrorism capacity-building, mediation, to sustainable development, migration and refugee affairs. Through bilateral and multilateral channels China has provided military assistance and personnel training for the AU and African countries to support their capacity-building on peace and security. Moreover, China is actively involved in mediating hotspot issues in Africa and supports African people in resolving African issues in the African way and enhances dialogue with African countries in the UN Security Council.

China- Africa Strategic Dialogue on Peace and Security

China-Africa peace and security cooperation are developing on bilateral, regional and international levels. Peace and security cooperation was included in China's first Africa policy white paper, issued in 2006. The significance of peace and security cooperation has grown thanks to the Initiative on China-Africa Cooperative Partnership for Peace and Security (ICACPPS) launched at the 5th Ministerial Conference of the Forum on China-Africa Cooperation (FOCAC) in July 2012. In 2015, China declared to deepen military cooperation, help Africa secure peace and security and support African efforts to confront non-traditional security threats. China works closely with Africa to implement country-specific programs of the peace and security initiative in light of China's capabilities and Africa's needs; hence applications from African countries and the AU Commission are necessary.

At the regional level, China cooperates with regional organizations including the African Union, the East Africa Community, the Economic Community of West African States and the Southern African Development Community. One prominent example is China's support for the Intergovernmental Authority on Development as the core platform for mediating in South Sudan's civil war. At multilateral level, China participates in various

international efforts for improving African peace and security. China participates in UN peacekeeping missions in Africa and supports African countries' capacity building in areas such as defense, counter-terrorism, riot prevention, customs and immigration control.

Building capacity on peace and security is an important dimension in Sino-African relations. China focuses on its priority and most urgent needs in peacekeeping capacity building, supports Africa's efforts in securing financial support from the UN on AU peacekeeping operations and delivered US$100 million military aid to the AU and the additional US$80 million military aid in support of the African Standby Force and the African Capacity for Immediate Response to Crisis.

In the context of peace and security cooperation, China and the African Union have agreed to allocate funds from China's remaining military aid to the African Union for counter-terrorism operations and building joint forces in the Sahel region. As a new package arrangement, the Fund provides military and economic assistance in a whole range of areas, including military, counter-terrorism, intelligence, maintenance of law and order and law enforcement and in multiple forms such as personnel training, material assistance, and infrastructure projects. For the first time Chinese diplomat takes a role for hotspot issues in the UN, in particular, ambassador Xia Huang is appointed by Secretary-General António Guterres as Special Envoy for the Great Lakes region and it is expected that there will be positive contributions to maintaining peace and stability in the Great Lakes region.

China-Africa peace and security cooperation: the way forward

Despite such progress, there is room for improvement. China-Africa peace and security cooperation are mainly focused on traditional security issues, carried out principally at the governmental level and mostly bilateral. China has to offer a distinctive approach to improve the current situation in Africa. The most important challenge may be to find a way to balance the principles of non-intervention and non-indifference. □

Although China is moving forward to reactive conflict resolution, it has not engaged to the same extent structural conflict prevention, beyond implementing a general approach that prioritizes economic development as the principal tool for ensuring stability. China has shifted its focus to conflict resolution as well as post-conflict reconstruction; For instance, in the case of South Sudan conflict, China has not developed conflict early warning capacity. China’s faced challenges on developing a comprehensive thinking at a strategic level about how to balance short, mid, and long-term solutions.

Thus, there is a need for China to develop a comprehensive overseas stability strategy that engages in both long-term, conflict prevention, as well as the existing approaches of reactive conflict resolution. China has to improve new approaches to facilitate the resolution of hotspot issues, to make good use of its friendly political relations with Africa, to increase communication and mediation, to promote dialogue and consultation. Therefore, a more integrated, comprehensive and sustainable approach is adopted whereby both traditional security issues and non-traditional security threats are being addressed through both bilateral channels and multilateral cooperation while mediation of conflicts and preventive diplomacy is being strengthened.

It is hard to avoid the dichotomy between intervention and non-intervention. Because the resolutions and actions of the United Nations Security Council have collective legitimacy, they should not be regarded as intervention. China should participate in more collective actions taken by the UNSC while insisting on non-intervention bilaterally. Through sticking to the core role of the UNSC, China can also take part in regional and sub-regional solutions as it did in South Sudan. It is important to maintain political dialogue and seek diplomatic solutions to conflicts, keeping military options as a last resort.

To secure long-term solutions, the root causes of insecurity must be addressed by pursuing transformation and sustainable development both before conflicts and post-conflict. There is the need for an updated set of principles for Sino-Africa peace and security cooperation based on six principles: African lead, African way, African peace, China focus, hot issues focus, multilateral focus. □

China has to develop a more detailed approach to early warning and to assist Africa to improve its early warning and response mechanisms, its capacity in anti-terrorism and peacekeeping. Africa also needs help to establish the African Human Security Index proposed in the first 10-year implementation plan of the African Union's Agenda 2063. In January and June 2015, AU Member States agreed to contribute up to 25% of the costs of AU peace and security efforts, including peace support operations, by the year 2020, as part of the AU's commitment to "Silence the Guns" by 2020 within the larger Agenda 2063 for Development. China may align its cooperation with the construction of African peace and security architecture. That should include support for the building and operation of regional and sub-regional security structures; support and funding for the establishment of an early response system in Africa; support and funding for the setting up of an African peacekeeping force; and promoting cooperation mechanisms among African countries in regional and sub-regional institutions.

China puts Africa's development at the epicenter of peace and security cooperation. Development is the first priority and the key to addressing security problems. Sustainable development helps to improve the balance between development, stability, and reform, as well as to promote sustainable post-conflict transformation.

Also, China has to help Africa build a peaceful culture by supporting and investing in peace and security education. This will help to achieve the Agenda 2063 goal of silencing guns by 2020. Another important objective is to improve the operational mechanisms for peace and security cooperation. China and Africa should align their strategies, taking into account Africa's increased strategic planning awareness. China should combine plans for promoting African development, including initiatives like the 'Three Networks' program for developing highways, high-speed trains and aviation; the UN 2030 agenda for sustainable development; and Agenda 2063.

Shared experience and shared insight are very important for China-Africa peace and security cooperation. At the governmental level, both parties should enhance experience sharing in areas such as ethnic-relations management, cross-border security governance, early warning and response mechanisms and social-security monitoring. At business level, China should improve the social responsibility performance of its entrepreneurs through education to develop their sense of impending crises, consciousness of environmental protection, integration and respect for local societies. Finally, China and Africa should encourage think tanks to contribute more to decision-making and implementation, to participate in the building of early warning systems and in follow-up evaluation mechanisms.

Conclusions

Greater cooperation between China and the African Union would provide an opportunity for reflecting on peace and security. Through ongoing dialogue, the AU-China Conflict Prevention Working Group should continue to explore and develop a greater understanding of how China and the AU can better cooperate in the field of conflict prevention.

In order to achieve such a comprehensive overseas stability strategy, China has the potential to build early warning systems in the conflict-affected states and to participate in existing local and international early warning and response systems, such as IGAD's Conflict Early Warning and Response Mechanism. Moreover,

Regarding Belt and Road Initiative and Africa's security, it is true that without permanent institutions and legal commitments, it is difficult for Belt and Road Initiative to become successful. Therefore, the institutionalization of Belt and Road Initiative is necessary. Conflicts in Africa are driven by a complex mixture of factors, including armed conflict, terrorism, bidding for resources, and external intervention. Africa is characterized by many conflicts and these conflicts have a negative impact on Africa's socio-economic and political development. Thus, conflict resolution and peacebuilding are essential to solving the problems in Africa. Most notably, UN and regional peacekeeping have been a common tool for resolving conflicts and establishing conditions for a stable peace in Africa. Indeed, countries with high levels of unemployment among young men and where male educational levels are low face a high risk of conflicts. Therefore, economic development and education may contribute to conflict resolution.

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The Effects of Central transfers on Local Own-Revenue: The Case of Morocco

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Abstract
The purpose of this work is to evaluate the effects of transferred central revenues on local own revenues. The nature of these effects remains ambiguous according to theoretical and empirical literature review, especially for developing countries. Indeed, these effects are analyzed in the context of a behavior's imbalance that can be caused by decentralization between local expenditures and their coverage by local own revenues. We are interested in Morocco for the period 2002-2014, taking into consideration all the Moroccan territorial communities grouped by the 16 regions. The effects are analyzed for total own revenue and then for each type of own-revenues and taking into account the endogeneity effect of transfers as a key issue. It is concluded that an increase in transferred central revenues does not necessarily encourage local own revenues in Morocco. This unfavorable effect is more important for the poorest regions than for non-poorest ones.

Keywords: Fiscal Decentralization, Central Transfers, Local Own-Revenue, Morocco

1. Introduction

While Morocco, like several developing countries, has embarked on the process of decentralization, the main issue is provision of sufficient resources by local and regional authorities to enable provision of basic public goods and services. In fact, decentralization should improve informational asymmetries, increase the political accountability of decision-makers and thus improve the efficiency in allocation of public goods and services through the two mechanisms of proximity (Hayek, 1948; Seabright, 1996 ..) and competition (Tiebout, 1956; Oates, 1972; Salmon, 1987; Besley and Case, 1995). For developing countries, decentralization represents an opportunity for the upgrading of public governance and reduction of poverty and populations' isolation.

These basic services, such as household equipment, health, primary education and infrastructure, require substantial revenues. However, generally in developing countries, there is a structural imbalance between the capacity of local and regional authorities to mobilize these resources and the responsibilities delegated by central government.

In this context, the transferred revenues remain an important lever to meet expenditure and are crucial for success or otherwise of decentralization in a country. Intergovernmental transfers modify the behaviors of local and regional authorities, which have been highlighted in several theoretical and empirical studies. Most stipulate that

any increase in transfers entails a higher local public spending, which is equivalent to an increase in own revenues (Hines and Thaler, 1995). However, these transfers can be seen as a kind of exceptional resource, which may reduce the willingness of local authorities to improve their taxation. This ambiguity has also been proved by various results of empirical studies. Some have demonstrated the positive incentive for transfers on the local authorities' own revenues, while others have shown the des-incentive effect.[1]

In this perspective we analyze, in this paper, the relationship between transfers and local own-revenues in Morocco as a developing country. The aim is to highlight the theoretical ambiguity about the incentive effect of unconditional transfers on own local revenues in an environment arched by rigorous budgetary constraints of Moroccan local authorities. This own revenues relate to revenues generated by local taxation (taxes managed by local authorities and taxes managed by the state on behalf of local and regional authorities). Based on data from the territorial authorities (regions, provinces, prefectures, communes) grouped by regions (16 Moroccan regions), a Panel analysis is carried out for the period 2002-2014.

In our analysis, the effects of transfers on the total own revenues (Taxes managed by the CTs and taxes managed by central government) are taken into consideration at first, and then the effect on each type of tax revenue is noted. Then, we consider the endogeneity effect of transfers as a key question. We then proceed by two types of analysis: static basic model (MCO) and dynamic model (GMM system). Then we check this effect by distinguishing between the regions according to their wealth (the very poor regions and the non-poor regions) and by distinguishing according to political affiliation of presidents of territorial collectivities.

2. Literature review

According to the theory of fiscal federalism, first and second generation (Oates, 2005), the effects of decentralization are classified according to the three branches of public economics defined by Musgrave (1959): resource allocation, income redistribution and economic stabilization. The expected effects of decentralization are a better allocation of public goods and services and greater efficiency in their production. These effects result from two major mechanisms, namely proximity and competition.

Because the political objective of macroeconomic stability is pursued at the national level, the enhancing of efficiency through the distribution of grant resources is a consideration of the distribution of intergovernmental transfers. These transfers aim to improve efficiency and ensure a more equitable distribution of resources by redistributing public resources through the intergovernmental grant system (Boex and Matinez-vazquez, 2005). Likewise, intergovernmental transfers modify the behaviors of local and regional authorities, which have been highlighted in several theoretical and empirical studies. Most stipulate that any increase in transfers entails a higher local public spending, which is equivalent to an increase in own revenues (Hines and Thaler, 1995). However, these transfers can be seen as a kind of exceptional resource, which may reduce the willingness of local authorities to improve their taxation. This ambiguity has also been proved by various results of empirical studies. Some have demonstrated the positive incentive for transfers on the local authorities' own revenues, while others have shown the des-incentive effect.[2]

A microeconomic analysis approved that transfers can encourage local own revenue if the marginal utility of local public spending increases in local own revenue. The variation in this marginal utility of public spending in local self-generated revenues is explained by economies of scale in the provision of local public goods (eg access to drinking water, sewage system), individual preferences in public consumption (eg primary education, basic health care) or efficiencies of local administration in tax collection (Caldeira, 2014).

[1] See Mogues and Benin (2012) for Ghana, Shah (1990), Rajaraman and Vasishtha (2000) and Panda (2009) for Brazil and India and Caldeira and Rota-Graziosi (2014) for Benin

[2] See Mogues and Benin (2012) for Ghana, Shah (1990), Rajaraman and Vasishtha (2000) and Panda (2009) for Brazil and India and Caldeira and Rota-Graziosi (2014) for Benin

Zhuravskaya (2000) has shown that local governments have almost no incentive to exert additional efforts to generate local own revenues when transfers increase in Russia. Buettner and Wildasin (2006) find in the United States a reduction in the generation of own revenues when external transfers increase. They examined all the interrelationships between various local variables in public finances. While Dahlberg et al. (2007) find neither a crowding-in nor a crowding-out effect of intergovernmental transfers on local tax rates nor on local tax revenues. These results are similar to that of Mogues and Benin (2012) study in Ghana which show that transfers discourage local self-government revenues in Ghana. Also, Shah (1990), Rajaraman and Vasishtha (2000) and Panda (2009) for India highlighted the unfavorable impact of transfers on local own revenues.

While Skidmore's (1999) study of US state and local governments identifies a positive effect of higher government support to local governments on locally generated revenues. This, like several empirical studies, especially those of developed countries, where there is a favorable effect of the increase of transferred revenue on own revenues, following an unknown quality of transfers by reducing the budgetary constraints on decentralization efficiency and the risk of excessive borrowing. However, Caldeira and Rota-Graziosi (2014) proved the same in a developing and African country that is Benin.

Transfers generally take two aspects: conditional ones that are selective and unconditional ones that are flat. In practice, the mechanisms for subsidies and transfers vary from one country to another, combining these two aspects. The common option is that unconditional transfers provide low incentives for local governments' own financing. To mitigate this trend, some countries have developed equalization schemes in which transfers depend on capacity and needs, especially in rich and federal countries. Some developing and emerging countries have also introduced tax performance criteria in their distributive formulas of these grants (Martínez-Vázquez and Boex, 2005).

In Morocco, these transfers relate, on the one hand, to the part transferred from VAT (value added tax), IS (corporation tax) and IR (revenue tax), which form part of the first section of the budget (operating revenue) of Moroccan local and regional authorities and which accounts for a large part of the latter's revenues. While, on the other hand, there is an exceptional grant granted to cover the investments and which forms part of the second section of these Moroccan communities budget. Our analysis then focuses on impact of unconditional transferred revenues on own revenues because the investment grants are exceptional and are only granted if necessary according to communities' investments.

These transferred revenues (30% VAT and 1% IS and 1% IR according to the previous regime before the adoption of the organic laws of 2015) represent a significant part of local and regional authorities' budgets. They include an equalization mechanism to reduce inequalities between regions, accounting for 60% of total revenues of local and regional authorities. These transfers amounted to 20 billion dirhams in 2014 compared to 7.8 in 2002, representing an average annual growth rate of 8.2%. These revenues consist of transfers of 30% VAT (89%), 1% of SI and IR (3,8%) and competition funds (7,6%). In addition, corporate tax and revenue tax revenues (1% of the national revenue of SI and IR) amounted to 757 million Dirhams in 2014, compared with 353 million Dirhams in 2005, representing a significant annual growth rate of 8.9%. This evolution is result of structural change in tax revenues in favor of direct taxes, particularly corporate tax.

3. Econometric framework

3.1. Database used

For this analysis we use the financial and budgetary details of Moroccan territorial authorities from 2002 to 2014 provided by the General Treasury of the Kingdom which is under the Ministry of Economy and Finance. This was crucial for drawing the key endogenous and exogenous variables from our analysis.

However, the regional population density variable was based on data of the High Commission for Planning in relation to regional population. Next, there was talk of using regional activity rate variable obtained from the same

source. The regional GDP from 2002 to 2014 in millions of Dhs and at the 2007 price is provided by the Directorate of Studies and Financial Forecast DEPF, which is under the Ministry of Economy and Finance.
For the second analysis, which concerns the heterogeneity effect of revenues transferred from central government on own revenue by taking wealth into account. We calculated for the Moroccan regions the "Wealth Index". In fact, because of the abundance of data on household habitat conditions[3] and the significant measurement error of bias associated with reported revenue or consumption, a substantial body of literature has developed a measure of wealth based on assets. Filmer and Pritchett (2001) conclude that the Demographic and Health Surveys (DHS) wealth index has actually outperformed the consumption or traditional spending index in explaining differences in economic status.

This Wealth Index was calculated according to principal component analytical method PCA, whether for the year 2004 or 2014. We have respected all the steps for this analysis using the KMO test (Kaiser and Kayen) that showed us the families of components that have to be eliminated from the models so that we have significant results. Then, the components selected for each construct of variables were the subject of calculations leading to development of a composite index reflecting the weighting between information content provided by the selected components. After that, results allowed us to make a score in order to rank the regions according to this index. It ranges from -0.75 to 1.0669 in 2004 and from -1.0142 to 1.8147 in 2014.

1.2. **Econometric models**

The objective of our study is to study the causal effect of revenues transferred from central government to local authorities on own revenue. Our analysis is devoted to studying this for all regional and local authorities grouped by regions. Thus, the study is done for 16 Moroccan regions for the period 2002-2014. Initially, the analysis focuses on the correlation between transfers on total own revenues (taxes managed in favor of CTs and taxes managed by the State): Model (1). Then analyze for each category of tax revenues (Models (2) and (3)). We then analyze by distinguishing regions according to their wealth (Models (4), (5) and (6)).

$$\boldsymbol{RPr_{it} = \beta_0 + \beta_1 Tr_{it} + \beta_2 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (1)}$$

$$\boldsymbol{TC_{it} = \beta_0 + \beta_1 Tr_{it} + \beta_2 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (2)}$$

$$\boldsymbol{TE_{it} = \beta_0 + \beta_1 Tr_{it} + \beta_2 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (3)}$$

$\boldsymbol{RPr_{it}}$ **:** Represents own revenue of local authorities per inhabitant by region i and which is the total revenue from taxes managed by collectivities and taxes managed by central government.
$\boldsymbol{TC_{it}}$ **:** Represents revenues from local taxes and products managed by the local authority and $\boldsymbol{TE_{it}}$ **:** Represents the revenues from taxes administered by state for the benefit of local and regional authorities, which are: professional taxes, municipal services taxes and housing tax. The three variables are per capita considering the impact of population on own revenue especially with the existence of economies of scale in the collection of local taxes.
$\boldsymbol{Tr_{it}}$: are the revenues transferred by central government to the benefit of local and regional authorities per capita and region, which comes from the endowments coming from state VAT, IS and IR revenues.
$\boldsymbol{X_{it}}$ Is a set of control variables for the robustness of the results. $\boldsymbol{TA_{it}}$ represents the activity rate by region to control the local economic conditions which determines the total transfers and the level of own revenues. Next, we consider population density by region $\boldsymbol{D_{it}}$ in order to grasp some potential economies of scale in the provision of public goods. We also take into account the effect of competition induced by the principle of fiscal decentralization "yeardstick competition" which are spill-overs between regions $\boldsymbol{revenuej_{it}}$. Transfers by encouraging the increase of the local authorities' own revenues induce an increase in the neighboring communities. This variable is calculated by the vector of average of per capita own revenues of communities of neighboring regions j $\boldsymbol{revenuej_{it} = \sum wRPr_{jt}}$.While w is a matrix which takes value 1 if the two regions share the same

[3] We used several variables : household equipment, cooking method, mode of disposal of household waste, sewage disposal method, basic housing equipment, oldness of housing, occupancy status and housing type.

boundaries and value 0 otherwise. We also add the other transferred revenue $\boldsymbol{ATr_{it}}$ which are the investment grants. The regional GDP is also added $\boldsymbol{PIB_{it}}$.

Secondly, we are interested in the heterogeneity of this effect between regions by taking wealth into account. For this we will use the Wealth Index previously calculated. Thus the equations of our estimates are following:

$$\boldsymbol{RPr_{it} = \beta_0 + \beta_1(Tr_{it} * QP) + \beta_2(Tr_{it} * QNP) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (4)}$$

$$\boldsymbol{TC_{it} = \beta_0 + \beta_1(Tr_{it} * QP) + \beta_2(Tr_{it} * QNP) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (5)}$$

$$\boldsymbol{TE_{it} = \beta_0 + \beta_1(Tr_{it} * QP) + \beta_2(Tr_{it} * QNP) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (6)}$$

Thus, we can distinguish the poorest quintile $QPt_{i,t}$where the region is poor this variable takes value 1 and 0 otherwise. The quintile of the non-poor regions $QNPt_{i,t}$where the region is poor, the variable takes the value 0 and 1 otherwise.

Third, attention is paid to the heterogeneity of this effect across regions, taking into account political affiliation. For this purpose we will use a dummy variable which takes the value 1 if the political affiliation of the majority of territorial communities presidents elected by region is represented in the government $POt_{i,t}$and the value 0 otherwise $NPOt_{i,t}$. Thus the equations of our estimates are following:

$$\boldsymbol{RPr_{it} = \beta_0 + \beta_1(Tr_{it} * PO) + \beta_2(Tr_{it} * NPO) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (7)}$$

$$\boldsymbol{TC_{it} = \beta_0 + \beta_1(Tr_{it} * PO) + \beta_2(Tr_{it} * NPO) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (8)}$$

$$\boldsymbol{TE_{it} = \beta_0 + \beta_1(Tr_{it} * PO) + \beta_2(Tr_{it} * NPO) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (9)}$$

Then we make a second dynamic econometric estimation where we introduce the delayed dependent variable of order 1 $\boldsymbol{RPr_{it-1}}$or $\boldsymbol{TC_{it-1}}$or $\boldsymbol{TE_{it-1}}$or $\boldsymbol{RPr_{it-2}}$or $\boldsymbol{TC_{it-2}TE_{it-2}}$by the GMM System.

4. Results

Table 2 presents the results of static estimates of equations according to the fixed and random effects (ordinary least squares). For the static model, the results show a significant and positive correlation between transfers and own revenues, revenues from taxes managed by the CTs and revenues from taxes managed by State for the benefit of TCs. The coefficients are 0.28 for own revenue, 0.12 for taxes managed by the CTs and 0.14 for taxes managed by the State in favor of the CTs, all significant at 1%.

Taking into account heterogeneity of this effect according to the level of wealth of regions, it can be seen that transfers to poorest regions have favorable effects only on local taxes managed directly by the TCs with a coefficient of 0.119. While the effect of transfers on the three types of revenue (own, taxes managed by the CTs and government-administered taxes) is significant and positive for non-poor regions.

Then, taking into account heterogeneity of this effect according to political affiliation of majority presidents of TCs of the region with central government. It can be seen that the regions with political affiliation increase their own revenues and tax revenues managed by the CTs while the effect of transfers on the revenues of taxes managed by the State for the CTs shows no heterogeneity according to political affiliation.

However, if one takes into consideration the dynamic version and one proceeds by robustness estimate of GMM system the results are completely different. We assume a potential endogeneity of control variables and a strict exogeneity of independent variables and temporal dummies. Lagged variables are used as instruments in level regressions as in regressions of differences. Table 3 presents results of estimates of lagged dynamic model of order 1. The structure tests (Sargan Hansen AR (2) test) are used to estimate a second-order lagged dynamic model for identifying the indirect effect of endogenous variable on the exogenous one. Table 4 presents results of estimates for the lagged dynamic model of order 2 (with lag 2).

Consequently, the results show a negative and significant correlation between transfers and own revenues and those resulting from taxes managed by State for benefit of CTs.. The coefficients are respectively -0.10 and -0.15. Only correlation between transfers and local tax revenues managed directly by TCs is positive and significant with a low coefficient of 0.0046. Thus, it can be said that the effect of transfers on local tax revenues managed directly by the TCs is favorable. While the effect is unfavorable for the three taxes managed by State in favor of the CT (professional, housing and communal services taxes).

If we consider the heterogeneity effect according to the wealth, we find here also results which differ completely from the estimates according to the static model (all of which are positive). The results show that the effect of transfers on own revenues, whether for poor or non-poor regions, is unfavorable. For tax revenues managed by TCs the correlation is not proved and for taxes managed by State in favor of TCs the effect is unfavorable. Thus, it can be noted that the adverse effect of transfers on own revenue of CTs is greater for poor regions than for non-poor ones.

If we consider the heterogeneity effect according to political affiliation, we can see that the effect of heterogeneity is not observed because results do not differ much for regions with and without political affiliation of the first estimates.

Thus, in summary, an increase in transfers by 1 point has an unfavorable effect of -0.10 on own revenue and -0.15 on own revenues from taxes administered by State in favor of TCs. However, this effect is more important for poor regions than for non-poor ones. A 1 percentage point increase in transfers has an adverse effect on poor regions' own revenues of -0.22 compared to -0.10 for non-poor ones and on local taxes revenues administered to the TCs of poor regions of -0.234 against -0.149 for non-poor ones. While the effect of transfers on local taxes revenues managed by the CTs is positive, the effect of heterogeneity according to the wealth has not been proved in this effect.

With regard to control variables, we can see that for the variable $\boldsymbol{revenue\ j_{it}}$;it which takes into consideration the competition effect; is always significant at 1% and positive (for the static and dynamic model). This highlights the literature that stipulates the strategic complementarity between local tax policies (Brueckner, 1998 Caldeira et al., 2012). For density variable, the effect is also significant and positive. Thus the demographic effect is positive and present on own revenues, which is justified by the economies of scale in the provision of public goods and services. For the variable of activity rate, the effect is not significant for static model and using GMM system the variable has a significant but negative effect.

Table 1 : Summary Descriptive statistics of the variables.

	OWN_REVENUES	R_TRANSFEREES	R_TRANSFEREES_2	REVENUE_J	T_ACT	PIB_REG	DENSITE	TAXES_GEREES_PAR_L_ETAT	TAXES_GEREES_PAR_CT
Mean	263.1759	470.1775	565.4662	234.4290	0.495875	43607.59	234.6447	104.9331	158.2428
Median	219.9578	364.4233	456.4760	211.7838	0.481000	37319.29	86.06979	83.83850	141.0887
Maximum	1704.212	3792.801	3957.959	1242.710	0.637000	163917.9	2644.582	656.0155	1170.492
Minimum	11.30681	59.82633	59.82633	14.65308	0.405000	1883.578	0.000000	0.000000	11.11903
Std. Dev.	185.4901	400.8893	459.9764	116.9381	0.058812	31952.44	554.4370	112.7478	106.5453
Skewness	3.537576	3.883241	3.000126	4.332708	0.547638	1.419442	3.502608	2.183098	4.870495
Kurtosis	23.29691	27.02442	17.72861	33.34090	2.198474	5.596006	13.65309	8.110610	42.65497
Jarque-Bera	3965.693	5471.799	2171.024	8380.137	15.96464	128.2537	1408.866	387.8122	14311.88
Probability	0.000000	0.000000	0.000000	0.000000	0.000341	0.000000	0.000000	0.000000	0.000000
Sum	54214.23	96856.56	116486.0	47354.66	103.1420	9070378.	48806.09	21616.21	32598.02
Sum Sq. Dev.	7053349.	32946007	43373557	2748578.	0.715993	2.11E+11	63631870	2605973.	2327139.
Observations	206	206	206	202	208	208	208	206	206

Sources : Results estimates from E-Views 9

Table 2 : Estimation results for static models.

Dependents variables / Model	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}
Transferred revenue, Tr_{it}	**0.28*** (0.073)**	**0.127*** (0.037)**	**0.14*** (0.053)**						
$Tr_{it} * QP$ ou $(Tr_{it} * PO)$				**0.15 (0.10)**	**0.119** (0.053)**	**0.036 (0.07)**	**0.17** (0.07**	**0.10*** (0.04)**	**0.065 (0.052)**
$Tr_{it} * QNP$ ou $Tr_{it} * NPO$				**0.21*** (0.07)**	**0.10*** (0.036)**	**0.11** (0.05)**	**0.11 (0.08)**	**0.10** (0.04)**	**0.01 (0.06)**
Density, D_{it}	0.13*** (0.035)	0.014 (0.10)	0.111*** (0.021)	0.18*** (0.029)	0.042** (0.017)	0.13*** (0.017)	0.19*** (0.03)	0.04*** (0.015)	0.14*** (0.02)
Revenue j, $revenue\ j_{it}$	0.76*** (0.08)	0.45*** (0.04)	0.358*** (0.057)	0.86*** (0.075)	0.46*** (0.039)	0.42*** (0.054)	0.85*** (0.07)	0.45*** (0.038)	0.39*** (0.05)
Others revenues transferred,ATr_{it}	-0.082 (0.061)	-0.008 (0.032)	-0.098** (0.044)	-0.046 (0.06)	0.02 (0.031)	-0.075** (0.043)	0.02 (0.06)	0.023 (0.034)	-0.01 (0.05)
GDP, PIB_{it}	0.0012** (0.0004)	0.0009*** (0.0003)	0.00067** (0.00032)						
Activity Rate, TA_{it}	4.28 (185.15)	46.90 (119.05)	68.99 (124.63)	-63.88 (183.90)	-138.31 (97.34)	77.82 (128.76)	-135.32 (185.16)	-145 (95.6)	3.62 (129.27)
C	-88.86	-69.09	-83.38	-18.30	45.41	-63.35	8.644	50.9	-37.52
Number of observations	**201**	**201**	**201**	**201**	**201**	**201**	**201**	**201**	**201**
Adjusted R2	**0.75**	**0.87**	**0.53**	**0.74**	**0.79**	**0.53**	**0.75**	**0.79**	**0.54**
R-squared	**0.76**	**0.89**	**0.55**	**0.75**	**0.80**	**0.54**	**0.76**	**0.80**	**0.55**
F-statistic (prob)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
HaussmanTest	**0.0095**	**0.0611**	**0.0001**	**0.0018**	**0.0083**	**0.0005**	**0.0062**	**0.0017**	**0.0019**
Radom Effect	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Fixed Effect	**No**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Source : Results from the E-Views 9 estimates.

Note: Robust standard errors are between parentheses. ***, **, and * indicate that the index is statistically significant at 1, 5 and 10% respectively

Table 3 : Estimation results for dynamic models (with 1 lag)

Dependents variables / Model	**Model (1)**	**Model (2)**	**Model (3)**	**Model (4)**	**Model (5)**	**Model (6)**	**Model (7)**	**Model (8)**	**Model (9)**
	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}
Transferred revenue, Tr_{it}	**-0.12**** **(0.05)**	**-0.05*** **(0.029)**	**-0.11***** **(0.035)**						
$Tr_{it} * QP$ ou $(Tr_{it} * PO)$				**-0.22***** **(0.056)**	**-0.08**** **(0.0336)**	**-0.179***** **(0.04)**	**-0.134***** **(0.05)**	**-0.056*** **(0.029)**	**-0.11***** **(0.036)**
$Tr_{it} * QNP$ ou $Tr_{it} * NPO$				**-0.12**** **(0.046)**	**-0.05*** **(0.029)**	**-0.11***** **(0.035)**	**-0.14***** **(0.054)**	**-0.063*** **(0.032)**	**-0.11***** **(0.039)**
Density, D_{it}	0.128*** (0.007)	0.024*** (0.004)	0.097*** (0.006)	0.123*** (0.008)	0.023*** (0.004)	0.094*** (0.006)	0.128*** (0.0079)	0.025*** (0.0041)	0.097*** (0.006)
Revenue j, $revenue\ j_{it}$	0.47*** (0.049)	0.23*** (0.028)	0.225*** (0.036)	0.52*** (0.051)	0.249*** (0.029)	0.262*** (0.037)	0.48*** (0.052)	0.244*** (0.03)	0.22*** (0.038)
Others revenues transferred, ATr_{it}	0.071* (0.039)	0.087*** (0.022)	0.0048 (0.028)	0.069* (0.039)	0.087*** (0.022)	0.001 (0.028)	0.08** (0.041)	0.093*** (0.023)	0.002 (0.03)
Activity Rate, TA_{it}	-454.3*** (75.03)	-181.7*** (42.18)	-252.5*** (55.006)	-281.3*** (89.27)	-131.9** (51.44)	-132.0** (65.06)	-452.1*** (74.88)	-182.6*** (42.85)	-249.23*** (54.98)
Dependents variables lagged (lag1), RPr_{it-1} or TC_{it-1} or TE_{it-1}	0.20*** (0.022)	0.27*** (0.024)	0.226*** (0.03)	0.202*** (0.022)	0.279*** (0.024)	0.216*** (0.03)	0.204*** (0.023)	0.274*** (0.025)	0.23*** (0.031)
Number of observations	**192**	**192**	**192**	**192**	**192**	**192**	**192**	**192**	**192**
Hansen test : p-value	**0.70**	**0.635**	**1.000**	**0.946**	**0.955**	**1.000**	**0.935**	**0.953**	**1.000**
AR (2): p-value	**0.60**	**0.82**	**0.83**	**0.55**	**0.72**	**0.82**	**0.71**	**2.16****	**0.79**
AR (1) : p-value	**-4.62**	**-2.95*****	**-5.68*****	**-5.74*****	**-3.06*****	**-5.79*****	**-7.47*****	**-6.07*****	**-7.90*****

Source : Results from the STATA estimates.

Note: Robust standard errors are between parentheses. ***, **, and * indicate that the index is statistically significant at 1, 5 and 10% respectively.

Table 4 : Estimation results for dynamic models (with 2 lag)

Dependents variables / Model	**Model (1)**	**Model (2)**	**Model (3)**	**Model (4)**	**Model (5)**	**Model (6)**	**Model (7)**	**Model (8)**	**Model (9)**
	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}
Transferred revenue, Tr_{it}	**-0.10*** (0.049)**	**0.0046 (0.026)**	**-0.15*** (0.034)**						
$Tr_{it} * QP$ ou $(Tr_{it} * PO)$				**-0.22*** (0.056)**	**-0.031 (0.03)**	**-0.234*** (0.039)**	**-0.10** (-0.50)**	**0.002 (0.26)**	**-0.14*** (0.035)**
$Tr_{it} * QNP$ ou $Tr_{it} * NPO$				**-0.10** (0.056)**	**0.004 (0.026)**	**-0.149*** (0.034)**	**-0.119** (0.052)**	**-0.01 (0.028)**	**-0.14*** (0.037)**
Density, D_{it}	0.14*** (0.007)	0.031*** (0.0035)	0.10*** (0.0057)	0.134*** (0.007)	0.029*** (0.003)	0.097*** (0.005)	0.14*** (0.007)	0.032*** (0.0035)	0.10*** (0.006)
Revenue j, $revenue\ j_{it}$	0.465*** (0.048)	0.234*** (0.025)	0.226*** (0.034)	0.519*** (0.049)	0.249*** (0.026)	0.263*** (0.035)	0.47*** (0.051)	0.25*** (0.027)	0.213*** (0.037)
Others revenues transferred, ATr_{it}	0.05 (0.038)	0.058*** (0.02)	0.018 (0.027)	0.046 (0.038)	0.057*** (0.02)	0.014 (0.027)	0.057 (0.039)	0.065*** (0.02)	0.013 (0.028)
Activity Rate, TA_{it}	-470.13*** (71.49)	-162.5*** (37.77)	-276.5*** (51.39)	-239.7*** (87.10)	-93.7** (46.35)	-112.3* (62.21)	-469.8*** (71.39)	-165*** (37.73)	-272*** (51.34)
Dependents variables lagged (lag2), RPr_{it-2} or TC_{it-2} or TE_{it-2}	0.146*** (0.02)	0.207*** (0.019)	0.19*** (0.027)	0.145*** (0.021)	0.21*** (0.019)	0.182*** (0.028)	0.144*** (0.021)	0.19*** (0.02)	0.195*** (0.028)
Number of observations	**176**	**176**	**176**	**176**	**176**	**176**	**176**	**176**	**176**
Hansen test : p-value	**0.032**	**0.009**	**0.935**	**0.239**	**0.084**	**0.998**	**0.159**	**0.069**	**0.994**
AR (2): p-value	**-1.82***	**-2.59****	**-1.76***	**-1.29**	**-2.41****	**-1.15**	**-1.18**	**.**	**-0.62**

Source : Results from the STATA estimates.

Note: Robust standard errors are between parentheses. ***, **, and * indicate that the index is statistically significant at 1, 5 and 10% respectively.

5. Discussion

In summary, taking into account the endogeneity effect of transfers, it can be said that, in the case of Morocco, the latter have an adverse effect on own revenues and on revenues from taxes administered by State in profit of TCs (housing taxes, municipal and professional services). This unfavorable effect is more important for the poorest regions than for the non-poor ones. However, our results indicate that unfavorable effect in Morocco does not seem to be influenced by political affiliation of local and regional authorities' presidents. The political affiliation does not seem to affect tax effort and mobilization of own revenues as a result of the increase in revenues transferred.

These results are similar to that of Mogues and Benin (2012) study in Ghana which show that transfers discourage local self-government revenues in Ghana. However, these authors also took into account the question of endogeneity, which is not the case for other studies such as those of Shah (1990), Rajaraman and Vasishtha (2000) and Panda (2009) India. However, they also highlighted the unfavorable impact of transfers on local own revenues.

This, unlike several empirical studies, especially those of developed countries, where there is a favorable effect of the increase of transferred revenue on own revenues, following an unknown quality of transfers by reducing the budgetary constraints on decentralization efficiency and the risk of excessive borrowing. However, Caldeira and Rota-Graziosi (2014) proved the same in a developing and African country that is Benin. Caldeira et al. (2014) conclude its work with an inquiry into its outcome which seems to contradict the literature on this subject for developing countries. They question whether Benin is a simple counterexample or whether the result is more general in developing countries. Our study then reinforces the findings of literature review in developing countries and the result of Caldeira et al. (2014) seems lonely.

6. Conclusion

We can conclude that in Morocco, local authorities, even with more revenue from transfers, have fewer incentives to increase their own revenues. This shows the inefficiency of the increase in revenues transferred on fiscal effort that seems to decrease. Local and regional authorities provide less effort in collecting their own revenues in the presence of transferred revenues, contrary to what they can provide in event of borrowing, for example. In this case, they will be obliged to increase their own revenues in order to ensure a balanced budget after reimbursement of annual installments. However, a detailed analysis of the two components of own revenues, ie local taxes managed directly by the TCs and local taxes managed by the State for the benefit of the TCs, shows that the effect is more unfavorable with regard to the taxes managed by the State for the benefit of the TCs (housing taxes, municipal and professional services). This shows very little effort in the area of collection of these three taxes by the concerned departments including Ministry of Finance and which weigh heavily on budgets especially of urban communes.

In this sense, we can also add the risk of corruption that lurks on Moroccan territorial communities, thus influencing the virtues of decentralization. Thus, the revenues transferred seem to give more revenue that is not used effectively or objectively. Rajaraman and Vasishtha (2000) conclude the same with the case of India and points out that corruption will lead the post-subsidy structure to a greater regressivity in the panchayat tax.

Our results confirm the initial hypothesis resulting from the literature review in the case of developing countries which stipulates that flat-rate transfers reduce the tax effort and are unfavorable to the local authorities' own revenues derived from local taxes. The revenue transferred does not seem to encourage the fiscal autonomy of local and regional authorities in developing countries, contrary to favorable effects in the developed ones.

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Calculate the Exchange Rate Pass-Through of RMB by Using Disaggregated Data

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Abstract
In this paper, I analyze the impact of the RMB's exchange rate fluctuations on export/import prices index, in other words, the RMB's exchange rate pass-through rate. Existing empirical studies estimating the exchange rate pass-through based on the aggregated of RMB's exchange rate data. However, these approaches have some major drawbacks. Because different major trading partners have different comparative advantage products to trade, using the aggregated effective exchange rate is not necessarily appropriate. For this reason, I calculate the "Nominal Effective Exchange Rate of RMB's in Sector (based on the export/import weight)" to verify the relationship between the exchange rate and the export/import prices index. The results reveal that the exchange rate shock on the export/import prices index is different from using aggregated data and disaggregated data.

Keywords: Exchange Rate, Export Prices Index, Import Prices Index, RMB

1. Introduction

Since China joined the WTO in 2001, China's economic international standing has been rising rapidly due to the development of international trade. China's export share, which was occupied 6% of the World's share in 2001, has expanded to around 16% in 2018 significantly, taking the top position in the world. Concerning China's import share, which is expanding steadily from 5% in 2001 to 13% in 2018, making it the third-largest in the world. That is to say while ensuring its status as a "World's Factory", China has also made itself to be a "Global Consumer Market".

Along with the expanding of China's trade balance, trade friction between China and other countries are becoming fiercer. Under this background, the US implemented trade restrictions such as imposing tariffs on Chinese goods in September 2018. There is a growing debate on that the situation of China now is identical to Japan in the 1990s, the focus of the friction between the US and China is likely to shift from "Trade" to "Exchange Rate". Since the friction between the US and China started, the tendency for the depreciation of the RMB to the USD rate is accelerated. The US hopes to force China to adjust the RMB's exchange rate to reach its goal, which is to reverse the situation of the trade imbalance between these two countries. The undervalued RMB has been perceived as an effective way to settle the trade disputes between the US and China, and also the driving global imbalances. Letting the RMB's exchange rate appreciate against the USD has been prescribed as an effective solution. As a matter of fact, since the RMB exchange rate reform in 21 July 2005 which People's Bank of China (PBC) announced to implement a reform of the exchange rate regime-switching from the "Dollar-peg Regime" to "A Managed Floating

Regime with Reference to a Currency Basket and the Supply-demand Conditions", the nominal exchange rate of RMB to USD is depreciated about 17.32%, and the nominal effective exchange rate (NEER) and real effective exchange rate (REER) has been risen by 42.28% and 32.78% respectively. Despite the variation of RMB, China's trade balance is still having a huge surplus these years. Before the 2008 Financial Crisis, the trade balance of China has reached 296.5 billion dollars, and after that, it reached its peak to 601.6 billion dollars in 2015. Therefore, the issue of the relationship between RMB's revaluation and China's international imbalance is highlighted nowadays.

The phenomenon that the mechanism of exchange rate can adjust trade balance does not work well does not only exist in China but also in other countries. Kimura (2018) exhibited some causes to illustrate that the exchange rate cannot adjust trade balance well. He points out that in spite of some macro causes such as demand elasticity, the J-curve effect, the incomplete pass-through theory can explain why the mechanism mentioned above does not work well, but also some micro causes such as market structure, the pricing behavior of firms, are as important as macro factors mentioned above too. The relationship between exchange rate movement and price adjustments of goods, which is termed as "exchange rate pass-through (ERPT)", has long been debated theoretically and empirically. As we all know, once the exchange rate changes, the variations will affect export/import prices (PEX/PIM) first, and then affect the export/import volume based on the expenditure switching effects. Due to the "Incomplete exchange rate pass-through" theory, a low or no degree of ERPT would make international trade remain insensitive to the movements of exchange rates. If export/import prices respond slightly to the variation of exchange rates, the trade balance would be severely stagnating. J.M Campa and L.S. Goldberg (2005) use the OLS model, Shioji and Uchino (2010) use the VAR model, Zou and Luo (2014) use the SVAR model to analysis the incomplete pass-through by using OECD, Japan, and China's data respectively. Their research proved that the movements of the exchange rate have a very limited impact on the international trade balance.

Not only does the Pass-through is incomplete, but also it has been widely recognized that ERPT will change along with time. In recent years, the fact of ERPT is decreasing has been discussed worldwide. F.S.Minshkin(2008) has indicated that the USD's pass-through is weakening nowadays. J.M Campa and L.S. Goldberg (2005) verify that some OECD countries support a similar view. Otani, Shiratsuka, and Shirota (2005) and Shioji and Uchino (2010) confirmed that the pass-through of Japanese Yen (JPY) has declined since 1990. J.lee and B.C.Yi (2006) pointed out that the ERPT of Korea Won (KRW) has also cut down since the 1997 Asian Financial Crisis. The declination of ERPT has important implications for every country because, with little or no pass-through, even a significant drop in the currency would have only a modest effect on export/import prices. Therefore, the extent to which export and import prices are affected by exchange rate fluctuation is limited. For the causes of the pass-through decline, Taylor (2000) points out that it is difficult for companies to adjust the export/import prices when the exchange rate changed, because of the rise of competitive pressure worldwide and the low, stable inflation rate. Obstfeld and Rogoff (1996) observed that whether export companies set export prices in their currency (Producer's Currency Pricing, PCP), or the export destination's currency (Local Currency Pricing, LCP) will influence the degree of ERPT. Gagnon and Ihrig (2004) argue that monetary policy about the restraint on inflation may lead to a declination in ERPT.

Based on all the literature mentioned above, we present a question about whether the RMB's ERPT is incomplete and declining as well as currencies such as the USD, the JPY, and KRW. I provide a detailed examination of ERPT of China's export and import prices by using data from January 2008 to June 2018. I use not only the aggregated export/import prices index but also the disaggregated export/import prices index to calculate the disaggregated pass-through by using the VAR model. Given the fact that every country has its comparative advantage goods to export, and comparative disadvantage goods to import, it may not always be appropriate to use the aggregated exchange rate data when estimating the disaggregated ERPT. Hence, I build up a series of "Nominal Exchange Rate of RMB's in sector (weighted by export/import volume)", and use it to calculate the disaggregated ERPT.

The composition of this paper is as follows. Section 2 analyzes the ERPT by using the aggregated NEER and PEX/PIM data. Section 3 interprets how to build up the series of "Nominal Exchange Rate of RMB's in Sector (weighted by export/import volume)", and illustrates the features of the disaggregated NEER. Then I use the disaggregated NEER and PEX/PIM data to estimate the disaggregated ERPT. Section 4 enumerates some reasons that may cause the declination of ERPT. Section 5 is a conclusion.

2. Estimate Aggregated Pass-through

This section follows Shioji and Uchino (2010)'s method to measure the RMB's pass-through to China's export/import prices by using the VAR model. We obtained NEER data from the Bank of International Settlements(BIS), and China's export/import prices (Aggregated, in dollar) from WIND DATABASE. Throughout the analysis in this paper, all variables are logarithmic and taken first-order differences, the lag will be selected of 2 according to the AIC standard. I choose the NEER as the first variable to implement the impulse response function by using the Cholesky decomposition. All impulse response functions in this paper are accumulated.

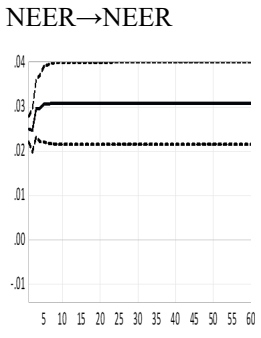
Unlike the Japanese export/import prices index is JPY dominated which is used by Shioji and Uchino (2010), the Chinese export/import prices index is Dollar dominated, so the RMB's ERPT should be defined as equation (1) and (2). On the one hand, in terms of exports of China, when all RMB's variation can be reflected in the prices in foreign currency, we say that there is a 100% pass-through from China to foreign countries. In other words, it means that the export prices in the foreign currency can be changed completely when the RMB's exchange rate changed. On the figure of the impulse response function, the larger the shock that the variation of the exchange rate gives to export prices index, the higher the pass-through of RMB's ERPT is. On the other hand, in terms of imports of China, when the variation of RMB causes the import prices in RMB totally, we call it a complete pass-through, at this time, the pass-through of import prices in foreign currency is 0. So on the figure of the impulse response function, the smaller shock that the variation of the exchange rate gives to import prices index, the higher the pass-through of RMB's ERPT is.

$$\mathrm{PT}(PEX_i) = \frac{IR(NEER_i, PEX_i)}{IR(NEER_i, NEER_i)} \tag{1}$$

$$\mathrm{PT}(PIM_i) = 1 - \frac{IR(NEER_i, PIM_i)}{IR(NEER_i, NEER_i)} \tag{2}$$

$\mathrm{PT}(PEX_i)$ and $\mathrm{PT}(PIM_i)$ represent the RMB's pass-through to export prices index and import prices index respectively. $IR(NEER_i, PEX_i)$ and $IR(NEER_i, PIM_i)$ indicate the variation of PEX/PIM when there is a unit shock that happened to NEER, and $IR(NEER_i, NEER_i)$ indicates the extent of NEER's change when there is a unit shock that happened to itself.

Figures 1 and 2 show the impulse response of PEX/PIM to a unit shock on the RMB's NEER from January 2008 to June 2018. Figure 1 corresponds to the export prices index, and figure 2 corresponds to the import prices index. According to the results, the ERPT to export prices is about 50%, and 75% can be observed in the case of import prices.



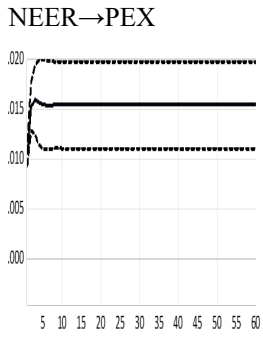
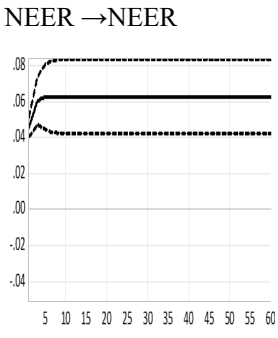


Figure1. ERPT of PEX



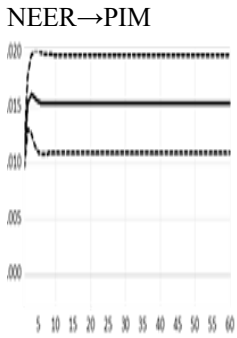


Figure2. ERPT of PIM

Then, I divide the sample period into two sub-sample periods, to calculate the pass-through before and after August 2015. On August 11th 2015, the PBC changed the quotation of the central parity of RMB against USD, to enhance the market determination of the RMB exchange rate. This reform of RMB's exchange rate system was accomplished by a 1.9% depreciation of the RMB/USD, and this change to the regime triggered a surge in global financial markets. Since the exchange rate reform of China in June 2005, the exchange rate of RMB tends to devalued until August 2015, while after the "8.11 Exchange Rate Reform", the exchange rate of RMB tends to

appreciate. Therefore, as the 1997 Asian Financial Crisis influenced o Korea Won's ERPT, I wonder whether the improvement of RMB/USD central parity quoting mechanism may lead to a change of RMB's ERPT.

Figures 3 and 4 correspond to the cases of the export prices index and figures 5 and 6 correspond to the cases of the import prices index. Figures 3 and 5 are the first half of the sample period (2008.01-2015.08), and figures 4 and 6 are the second half of the sample (2015.09-2018.06). As a result, although there is a slight decline can be observed in the ERPT of PEX, the result hardly can tell there is an obvious change after the change of RMB's regime in August 2015. While the ERPT of PIM fell 13% in the second half of the sample period. The differentiate between ERPT to PEX and PIM might be explained by the disaggregated data.

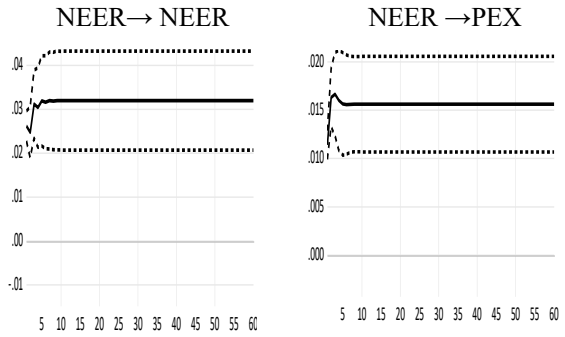


Figure3. ERPT of PEX
（First half 2008.01-2015.08）

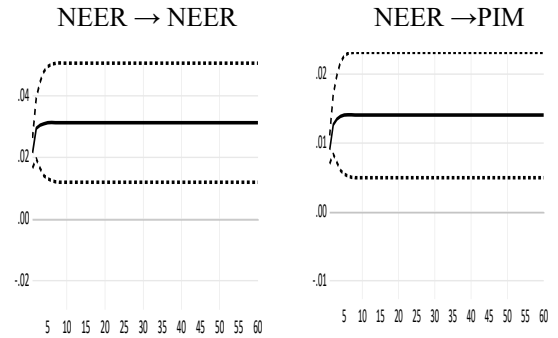


Figure4. ERPT of PEX
（Second half 2015.09-2018.06）

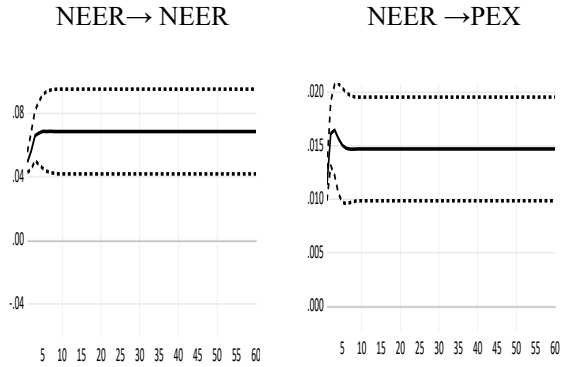


Figure5. ERPT of PIM
（First half 2008.01-2015.08）

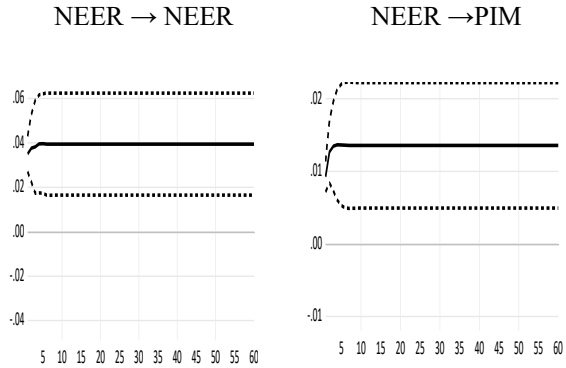


Figure6. ERPT of PIM
（Second half 2015.09-2018.06）

Source: Author's calculation

Table 1. The Aggregated ERPT of PEX/PIM

Aggregated ERPT of PEX			**Aggregated ERPT of PIM**		
Period	**Pass-through**	**Trend**	**Period**	**Pass-through**	**Trend**
Total	50.32		Total	75.72	
First Half	48.75	**Decrease slightly**	First Half	78.6	**Decrease**
Second Half	45.04		Second Half	65.23	

3. Estimate the Disaggregated ERPT

Mario Marazzi and Nathan Sheets (2007) mentioned that the ERPT of materials is relatively high, and the ERPT of manufactured goods is low comparatively. So the change of international trade's structure, such as the trade share of materials is decreasing, while the trade share of end products is increasing may explain the aggregated ERPT estimated above show the tendency of declination. Therefore, to explain why the aggregated ERPT declined

after August 2015, we have to estimate the disaggregated ERPT respectively. The series of effective exchange rate data published by the International Organization nowadays are aggregated data, the trade weight is calculated by using the aggregated trade amount of every country's major trading partners. But the trade weight varies widely from one trade partner to another trade partner. If I use the aggregated NEER to estimate the disaggregated ERPT of RMB, it may cause "Aggregation Bias". Before I estimate the disaggregated ERPT, it is necessary to construct the disaggregated NEER first. There are several advantages of the construct of disaggregated NEER. First, disaggregated NEER may obtain detailed information about the characteristics of the exchange rate. Second, using the disaggregated NEER to measure disaggregated ERPT may avoid the "aggregation bias", which might lead us to an insufficient result. This section will construct disaggregated NEER, and illustrate it is characteristic first, then use it to estimate disaggregated ERPT.

3.1 Construction Disaggregated RMB's NEER

Before calculating the disaggregated NEER, it is necessary to give a simple illustration of the choice of sectors, trade partners, adjustment frequency of the weight, and the method of calculation. First, I choose 8 sectors to estimate disaggregated RMB's NEER including FOOD, MINERAL, CHEMICAL, WOODS, TEXTURE, METAL, EMACHINE, and MACHINE regarding the H.S. code classification. Second, I choose 10 countries and areas including the US, EU, Australia, Canada, Hong Kong, Japan, Korea, Singapore, Thailand and UK which is the most important trade partner of China, and also do their currency is included in the currency basket that RMB's exchange rate refers to. Third, we change the weight of trade volume every year, while the NEER published by BIS's weight change every 3 years.

We use the method of Shioji and Uchino (2010) mentioned to construct the disaggregated NEER of RMB. $w_{c,t}^{i}$ represents the trade weight of country c in sector i of year t (the entire target countries in sector i of year t is represented by $C_{t,i}$), defined as equation (3).

$$w_{c,t}^{i} = \frac{tradevalue_{c,t}^{i}}{\sum_{c \in C_{t,i}} tradevalue_{c,t}^{i}}, \qquad 0 \le w_{c,t}^{i} \le 1 \tag{3}$$

$tradevalue_{c,t}^{i}$ is the trade volume of country c in sector i of year t. Assuming that $e_{c,t,m}$ is the nominal exchange rate of the country c's currency to the RMB in t year m month, we can calculate the change of the NEER in sector i year t by using the trade weight mentioned above, which is represented by $I_{i,t,m}^{t}$.

$$I_{i,t,m}^{t} = \prod_{c \in C_{t,i}} \left(\frac{e_{c,t,m}}{e_{c,t,1}} \right)^{w_{c,t}^{i}} \tag{4}$$

Here, assuming $I_{i,t+1,1}^{t}$ indicates the variation of exchange rate from January year t to January year t+1, we can calculate the sector i's NEER of t year m month as equation (5).

$$CI_{i,t,m}^{t} = \prod_{\tau=2008}^{t-1} I_{i,\tau+1,1}^{\tau} \times I_{i,t,m}^{t} \tag{5}$$

3.2 The feature of Disaggregated NEER of RMB

Figure 7 shows the variation of disaggregated NEER from January 2008 to June 2018 calculated above. To indicate the difference between aggregated and disaggregated NEER, I put the aggregated NEER published by BIS into the figure too. As we can see, first of all, the aggregated NEER move more gently than the disaggregated NEER. MINERAL's NEER reached a maximum of 115.90 in November 2008, and the aggregated NEER reached its maximum 105.31 in July 2015, which is 10.07% smaller than the MINERAL's. Second, the gap between the maximum and minimum of aggregated NEER and disaggregated NEER is different. For example, the gap between the maximum and minimum of aggregated NEER is 7.38, which is smaller than the gentlest one in the disaggregated NEER, EMACHINE's ERPT, 7.42. and the largest gap is MINERAL's NEER, 31.59, which is the 4.04 and 4.28 times of EMACHINE'S NEER and aggregated NEER respectively. The distinction of disaggregated NEER indicates that international competitiveness is quite different between different sectors. The logic of the

argument is straightforward. The smaller the range is, the price is more steady, which is mean an enterprise can maintain its product price in the international market. According to the results, we can say that the enterprise in China's MINERAL sector is inferior competitiveness in the international market, while the EMACHINE sector definitely in the superiority position.

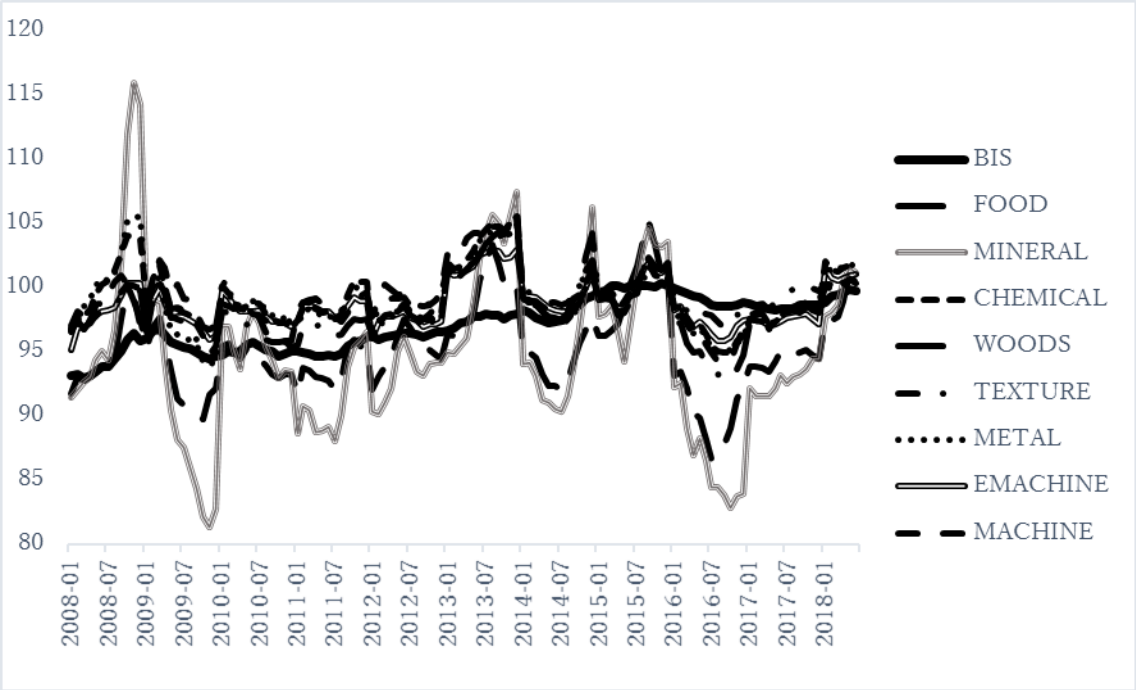


Figure7. Comparison of Disaggregated NEER (weight of trade volume) and Aggregated NEER
Source: Author's calculation

Table 2. The Basic Statistics of NEER

Category	Maximum	Minimum	Average	Variance
FOOD	106.09	94.47	99.91	2.60
MINERAL	105.16	94.10	99.36	9.98
CHEMICAL	107.43	97.07	100.90	2.15
WOODS	106.81	98.11	101.40	1.87
TEXTURE	106.62	98.06	101.17	1.60
METAL	107.44	97.30	100.69	2.08
EMACHINE	106.44	97.26	101.08	1.87
MACHINE	109.52	98.71	102.17	2.20
Aggregated	127.46	90.62	109.94	2.62

Source: The BIS statistics, Wind Database, and the Author's calculation.

Due to the diversity of China's demand and supply, some countries may take a considerable part in China's import, but it's export share is very insignificant, vice versa. For example, China imports intermediate goods and material from Southeast Asia, and export industrial products to the US and Europe. So the import share of primary goods from Southeast Asia surpasses the US and EU. Hence, it is a matter to choose the total trade volume ($TNEER_i$), or exports ($ENEER_i$), or imports ($INEER_i$) as weight when I calculate the disaggregated NEER. Table 3 shows the growth rate of disaggregated NEER of 3 different weights. As we can tell, each of these 3 indicators has its distinguishing features. In particular, in the case of CHEMICAL, EXTURE、METAL、EMACHINE、MACHINE, the $ENEER_i$ is bigger than $INEER_i$. While in the case of FOOD, the situation is reversed. Moreover, the MINERAL's $ENEER_i$ is greater than 0, while the $INEER_i$ is smaller than 0.

Table 3. Growth Rate of Disaggregated NEER in 3 Different Weight

Category	$ENEER_i$	$INEER_i$	$TNEER_i$
FOOD	3.57	4.84	4.27
MINERAL	4.32	-1.07	0.15
CHEMICAL	2.30	0.03	1.05
WOOD	2.14	1.56	1.74
TEXTURE	2.10	0.12	1.59
METAL	2.54	0.39	0.43
EMACHINE	4.17	0.71	2.72
MACHINE	3.38	0.60	1.40

Source: Author's calculation.

Figure 8 to figure 15 put the 3 different disaggregated NEER of each sector together gave us an intuitive impression about the disparity of the choice of weight. Among them, the CHEMICAL, WOODS, TEXTURE, and METAL's 3 different NEER show almost the same movement during the sample period, and quite from each other occasionally. For the remaining sectors' NEER, the tendency and fluctuation range are not the same as we can tell. Therefore, it is necessary to choose the appropriate weight to construct disaggregated NEER, and use it to estimate the ERPT of PEX/PIM.

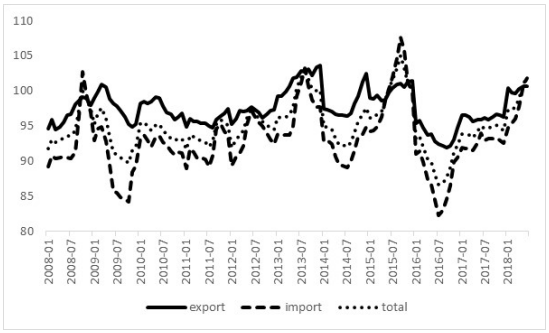


Figure8. FOOD's NEER in 3 Different Weight

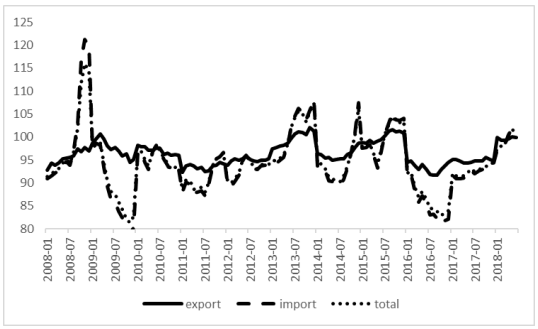


Figure9. MINERAL's NEER in 3 Different Weight

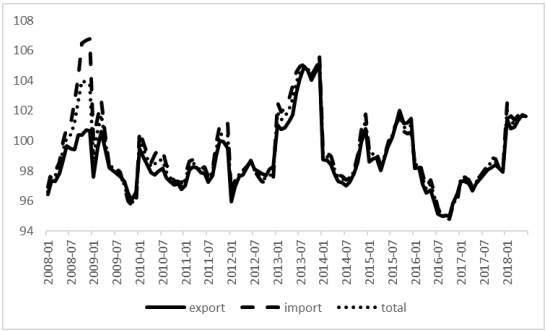


Figure10. CHEMICAL's NEER in 3 Different Weight

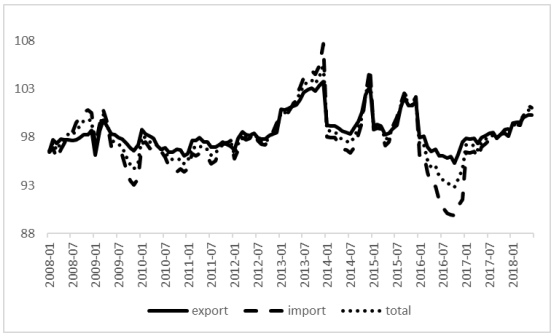
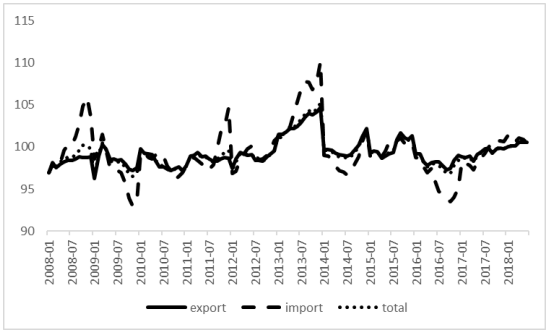


Figure11. WOODS' NEER in 3 Different Weight



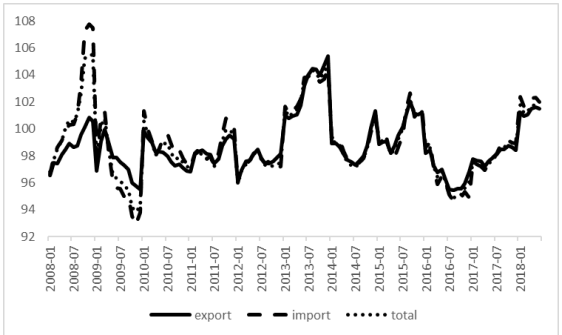


Figure12. TEXTURE's NEER in 3 Different Weight

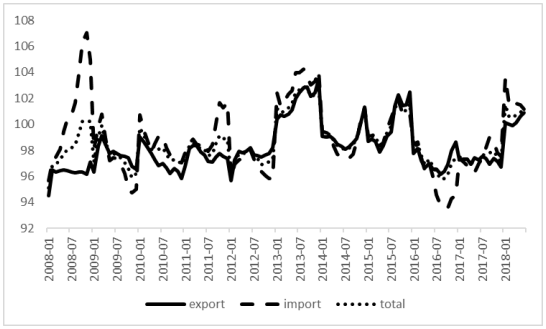


Figure13. METAL's NEER in 3 Different Weight

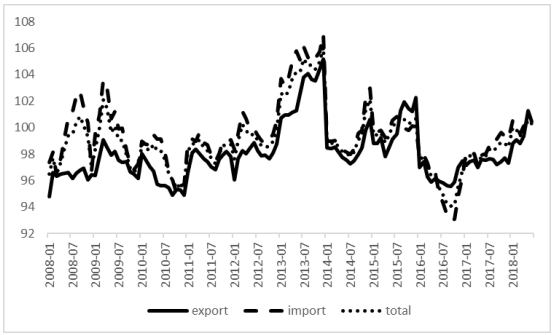


Figure14. EMACHINE's NEER in 3 Different Weight

Figure15. MACHINE's NEER in 3 Different Weight

3.3 Estimate the Disaggregated ERPT

This section uses the same method mentioned in section 2 to estimate the disaggregated ERPT of each sector. All results summarized in Table 4. As we can see, the disaggregated ERPT differs a large extent across sectors. Especially, the differences between disaggregated ERPT of PIM is more remarkable than the disaggregated ERPT of PEX. For instance, the lowest ERPT of PEX is MINERAL, which is 10%, and the highest ERPT of PEX is FOODS, which is 52.17%, there is 42% difference between these two ERPT. While in the case of ERPT of PIM, the lowest one is METAL, which is 18%, and the highest one is CHEMICAL, which reaches 80%, the gap between two of these disaggregated ERPT is about 62%, is bigger than the ERPT of PEX. The consequence proved the ERPT of primary goods is higher than the manufactural goods mentioned by Mario Marazzi and Nathan Sheets (2007).

We also divide the whole sample period into two sub-sample periods and estimate the ERPT respectively. The results of ERPT are also represented in Table 4 too. First, it is shown that the ERPT of PEX tends to increase or remain unchanged for most of the sectors. Only do TEXTURE, EMACHINE, MACHINE's ERPT show the tendency of declination. These 3 sectors account for16%, 49%, 6% of China's total exports in 2018 respectively; they play a decisive role in China's export. Therefore, even though only 3 sectors' ERPT in 8 is lessening, considering of the decisive position these 3 sectors have, it may explain the whole ERPT of PEX shows a slightly decreased but almost remain the same level. Second, in the case of the ERPT of PIM, TEXTURE and MACHINE's ERPT tends to increase, the remaining sectors' ERPT is reducing since August 2015. Due to the disaggregated result, the reason that whole ERPT of PIM decrease is not because the import share shifting from primary goods, which's ERPT is relatively high, to the manufacturing goods, which's ERPT is low comparatively, but for most of the sectors' ERPT is incline to move down.

Table4. The Transition of Disaggregated ERPT

Disaggregate Data				Disaggregate Data			
Data	**Period**	**Pass-through**	**Trend**	**Data**	**Period**	**Pass-through**	**Trend**
FOODS	Total	52.17		FOODS	Total	50	
	First Half	42.85	Increase		First Half	66.25	**Decrease**
	Second Half	85			Second Half	25	
MINERAL	Total	10		MINERAL	Total	66.67	
	First Half	10	Increase		First Half	50	**Decrease**
	Second Half	20			Second Half	43.75	
CHEMICAL	Total	28.57		CHEMICAL	Total	80	
	First Half	26.32	Increase		First Half	80	**Decrease**
	Second Half	33.33			Second Half	75	
WOODS	Total	21.05		WOODS	Total	70	
	First Half	20	Increase		First Half	81.43	**Decrease**
	Second Half	23.68			Second Half	16	
TEXTURE	Total	35		TEXTURE	Total	50	
	First Half	47.05	**Decrease**		First Half	35.71	Increase
	Second Half	21.42			Second Half	50	
METAL	Total	20		METAL	Total	18	
	First Half	19.23	Same		First Half	77.59	**Decrease**
	Second Half	19.04			Second Half	70	
EMACHINE	Total	32		EMACHINE	Total	50	
	First Half	39	**Decrease**		First Half	50	**Decrease**
	Second Half	26.32			Second Half	45	
MACHINE	Total	33.33		MACHINE	Total	28	
	First Half	36	**Decrease**		First Half	70	Increase slightly
	Second Half	33.33			Second Half	71.43	

4. The cause of Pass-through declination

Shioji and Uchino (2010) indicate that some industries' ERPT is relatively high, and others' ERPT is comparatively low, so if the share of sectors changed, the entire ERPT will change too. J.M Campa and L.S. Goldberg (2005) mentioned that the increase in international competitiveness might shrink ERPT. Because under an increasingly competitive global market, exporters cannot fully benefit from foreign exchange changes as before, they are forced to lower the export prices itself to improve their export prices competitiveness. Mario Marazzi and Nathan Sheets (2007) indicate that exporters tend to increase their oversea production, and a share of intra-firm trade in a country's total exports becomes far larger than before. As long as doing business with subsidiaries overseas, exporters are more likely to share exchange rate risk with oversea subsidiaries and adjust their profit margin strategically. Hence the oversea investment of the company will give influence the ERPT. Sasaki (2013) pointed out the higher the ratio that companies' PTM behavior, the lower the ERPT is. Exporters tend to change their export prices in local currency to maintain its market share. Given consideration of these points, this section will discuss 4 reasons that will cause the change of ERPT as the structure of international trade, the rise of international competitiveness, the increase of oversea investment, and the PTM behavior.

4.1 Structure of International Trade

Figure 16 and figure 17 represent the movement of materials and manufactured goods' share in export and import from 2008 to 2018 respectively. As we can see, the export of materials only exists 5% of total exports, and the import of materials exist for 30% of total imports since 2008. Considering the fact that the material's ERPT is higher than manufactured goods, the share of materials and end products occupy of exports and imports can explain why the aggregated export's ERPT, which is 50%, is lower than the aggregated PIM's ERPT, which is 75%.

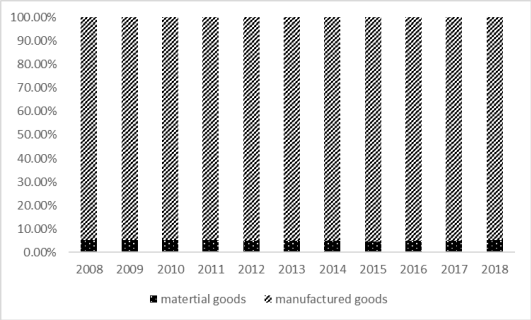


Figure16. The share of material goods and manufactured goods in export

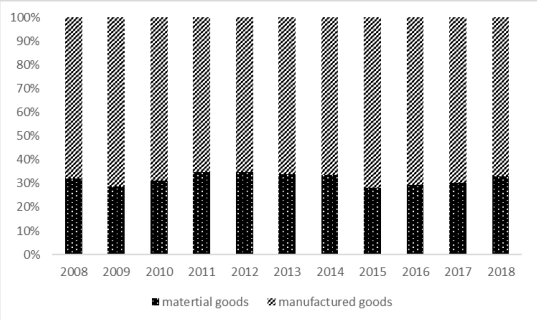


Figure17. The share of material goods and manufactured goods in import

4.2 Rise of International Competitiveness

It is also pointed out that the movements of the product's international competitiveness may reduce ERPT. Exporters who have strong international competitiveness do not need to adjust their export prices because they can maintain their oversea market share when RMB is depreciation. Hence, the increase of the sector's international competitiveness will sharpen the influence that the exchange rate gives to export/import prices. According to figure 18 to figure 20, the sectors of WOODS、TEXTURE、METAL、EMACHINE、MACHINE have maintained a relatively high international competitiveness since early 2000. It indicated that those sectors' exporters do not need to adjust their export prices even though the RMB is depreciated. They can maintain their market share while holding their price constant and enjoy the extra exchange rate gains. Therefore, manufactured goods' ERPT is low and decreasing in recent years.

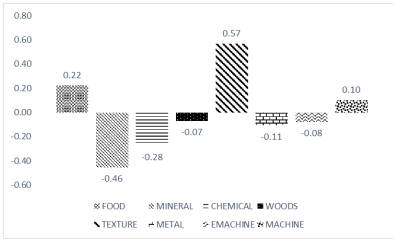


Figure18. The International Competitiveness of Each Industry 2000

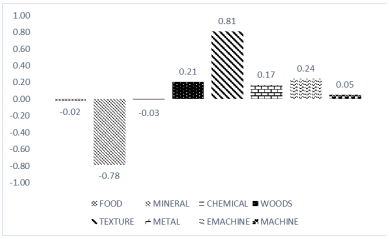


Figure19. The International Competitiveness of Each Industry 2010

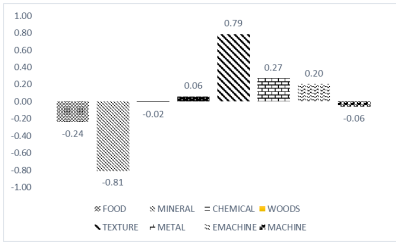


Figure20. The International Competitiveness of Each Industry 2018

Note: The calculate method of International trade is:

$$\mathrm{IC}_i = \frac{EX_i - IM_i}{EX_i + IM_i}$$

EX_i represents to the class i's export volume, IM_i represents to the class i's import volume

4.3 Increase in overseas investment

Changes in exchange rates affect a company's decisions on expanding overseas business or not. When exchange rates are fluctuating rapidly, companies implement a strategy to go abroad to avoid exchange risks. Along with the expanding of overseas business, the share of intra-firm trade will become larger and larger, and enterprises would like to share the exchange risk with their subsidiaries overseas which will lessen the ERPT of RMB. Since China joined the WTO, Chinese companies' oversea investment activities have significantly increased. With 18 years of rapid development, China has seen compelling achievements in overseas investment and Outward Foreign Direct Investment (OFDI) flow ranked second only to the US in 2016, rising from 26th in 2002 (Figure21). "Going abroad" is becoming an inevitable trend for Chinese companies. With the rapid growth of overseas investment, the intra-firm also increase speedily. The production of the supply chain under intra-firm trade is a key factor in understanding the recent declination of ERPT. Multinational firms can import the materials and parts from their subsidiaries overseas, the parent company and their affiliate will share the exchange rate risk by choosing the same settlement currency. Therefore, the share of intra-firm trade is higher, the lower the ERPT is.

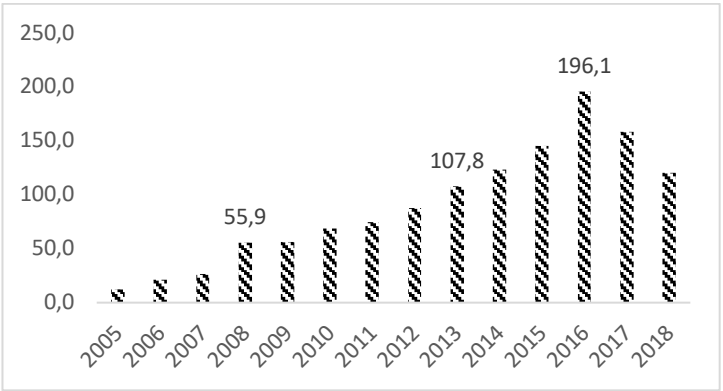


Figure21. Chinese Oversea Investment (2005-2018) Unit：billion dollar

Source: The Chinese National Bureau of Statistic

4.4 Behavior of PTM

Pricing to Market (PTM) affects correspond to the extent to which exporters adjust their prices to reflect the prevailing prices set by their competitors. For example, during the RMB appreciation period, it means the cost will increase, exporters tend to conduct the PTM strategy by stabilizing export prices in the local currency, even though it will squeeze their profit margin. While during the RMB depreciation period, it means the exporters can enjoy significant exchange rate gain if they do not change the price in the foreign market. Hence, firms take advantage of their market power and discriminate by changing a destination-specific mark-up on the marginal cost.

From a macroeconomics policy perspective, with the imbalance of international trade, it is important to know the extent to which export prices and import prices are affected by exchange rate fluctuations. However, the exporters adjust their prices in the international markets may shrink the ERPT, and then lessen the extent that the exchange rate can transmit to trade balance. According to Table 1 and Table 4, both aggregated and disaggregated ERPT's absolute value is less than 1, which is mean the ERPT of RMB is incomplete, and PTM behavior of exporters do exist. And the declination of ERPT can be interpreted as more and more exporters tend to adjust their prices to maintain their market share because the exchange rate fluctuates intensively after the exchange reform in August 2015.

5. Conclusion

The paper examined RMB's ERPT of PEX/PIM by using the data from January 2008 to June 2018. Firstly, according to the analysis results in this paper, the ERPT of PEX only can see a slight declination in the second half of the sample period (September 2015 to June 2018). The reason is, only TEXTURE, EMACHINE, MACHINE's ERPT of eight sectors show the inclination of decrease. These three industries' exporters play very actively since China open its market to the world, during numerous round of doing business with foreign enterprises, they already know how to share exchange rate risk with their trade partners. For this reason, their ERPT shows the tendency of falling. And these 3 sectors play an important role in China's total export can explain why only 3 sectors' ERPT in 8 is reducing can affect the total ERPT of PEX shows a slight decrease in the second half of period. Second, the ERPT of PIM is decreased 13% in the second half of the sample period. This paper proved that it is not because the share of primary goods in total imports is declining, for which ERPT is relatively high, but most of the sectors' ERPT including both primary and industrial goods are declining in recent years. Moreover, this paper points out several complementary explanations of this decline such as the structure of international trade, the rise of international competitiveness, the increase of oversea investment, and the PTM behavior.

This article examines the hypothesis that the declination of ERPT is not only existed in developed countries such as the United States, Japan, and OECD members, but also developing countries like China. The structure of international trade, the rise of international competitiveness, the increase of oversea investment, and the PTM behavior can be the complementary explanations for this tendency of declination. However, the decline of ERPT does not necessarily mean the connection between the exchange rate and macroeconomy is weakening. The change of the RMB's exchange rate will force the relative companies to do some action to maintain their benefits overseas, and these actions from microeconomies will finally cause macroeconomics' revolution. Even though the fact that RMB's ERPT is low and shows the tendency of decline, but considering the fluctuation range of RMB's exchange rate is relatively small, and the low value-added goods china products, the prices of china's goods may not have enough room to adjust. So along with the expand of RMB's exchange rate's fluctuation range, and the reform of China's international trade construction, the ERPT of RMB might enlarge or increase gradually in the future.

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Joint Products CVP Analysis – Time for Methodical Review

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Abstract
This paper compares the effectiveness of the Weighted-Contribution-Margin (WCM) and the Reversed-Contribution-Margin-Ratio (RCMR) in multiproduct Cost-Volume-Profit analysis applications. Using a rehashed-activity data and the OLS regression to analyse six joint-products over 42 weeks operation, it was found that the WCM lacks analytical efficiency and generates suboptimal products mix because it ignores the inverse relationship between a product's contribution-margin-ratio (CMR) and its breakeven point (BEP). These deficiencies present potential resource allocation problems during periods of low capacity utilization periods. The paper recommends the use of the RCMR which factors the tradeoff effects of the CMR/BEP in its measurement.

Keywords: Contribution Margin Ratio, Weighted Contribution Margin Ratio, Reversed Contribution Margin Ratio, Breakeven Point, Cost-Volume-Profit Analysis

1. Introduction

The survival, sustenance and competitiveness of any business in modern times are underscored by its ability to make effective business plans and respond to immediate challenges facing its operations and economic activities. Maximization of shareholders' wealth which often represents the broad objectives of a firm only applies when the profit-making machinery of the firm is appropriately aligned and correctly set in motion.

Profitability being the main focus of both long-term and short-term decisions takes more than basic economic strategies to keep a firm competitive in today's electronic and high-tech driven business environment. The speed at which a firm's management responds to business threats and opportunities defines the firm's extent of success in the economic market-place. However, for a firm to indeed survive in such a fast-moving global market with limited resource sources, the use of short-term decision models such as marginal costing and cost-volume-profit (CVP) analysis becomes desirable and inevitable.

Since the seminal work of Jaedicke and Robicheck (1964), CVP analysis has played a vital role in profit and activity planning, sensitivity analysis, short-term decision, marginal costing and budgetary control (Jaedicke & Robichek, 1964). Given that the CVP has been widely employed successfully in both teaching and actual application for analyzing a single product decision scenario under existing assumptions, the multiproduct application is still shaky because the various methods advanced for dealing with the analysis seem to suffer from one defect or the other.

1.1 Study Hypothesis

To advance the cause of this study, we propounded and evaluated the following major hypothesis using two other related hypotheses espoused for better understanding in the methodology section:

H_0: Using the Weighted-Average Contribution Margin (WCM) approach **Does Not** produce accuracy in the allocation of common ***fixed costs*** to individual products.

Rationale: The major source of misinformation in the computation of individual product's breakeven point comes from the inability to accurately estimate the attributable fixed costs to each product from the joint products' fixed costs estimate. Decision making on the basis of which product to produce, enlarge or discontinue during critical capacity utilization management periods rests squarely on the ability of the accountants to estimate individual product's attributable fixed costs with the required precision. Where this ability is lacking, the decision-making process will be faulty thereby leading to less optimal outcome. Preliminary analyses have shown that the WCM method seems to be flawed in this aspect, hence, the need for further statistical evaluation and comparison with a probable better technically and theoretically supported alternative.

1.2 Objectives of the paper

This paper aims to assess the efficiency and effectiveness of the widely accepted weighted contribution margin ratio (WCM) for distributing joint fixed costs and finding the individual products' breakeven points using a rehashed-operational data for six joint-products on table 2. It further aimed to compare the results obtained with those from a similar analysis employing the reversed contribution margin ratio (RCMR) introduced in Enyi (2012). The comparative test was intended to unveil which of the two models can deliver more on the accuracy of the individual share of the joint fixed costs and on the ability to align the aggregate of the individual products' breakeven points with the breakeven point produced using the fixed costs and contribution margin ratio (CMR) taking the entire operational analysis as one product line.

2. Theoretical and Empirical Review

CVP analysis is one business model which is exhaustively useful and hallowed in directing activity flow in a firm and yet simple to understand and apply. However, this simplicity of the CVP has made it one of the most abused in terms of misapplication. According to Stefan (2012), CVP analysis helps to bridge the gap between accounting and budgetary control and financial economics models for evaluating flexibility in economic decisions. The original CVP model, presented by Hess, 1903 and Mann, 1903-07, has progressed from the basic one product model and no uncertainty, with fixed costs and variable costs, to a more diversified and complex design with multiproduct situations and uncertainty (Stefan, 2012). Ever since the works of Jaedicke and Robich (1964) many scholars have delved into the study of how the CVP analysis can be deployed to solve not only business but also socioeconomic problems (Himme, 2018; Cheung & Heaney, 1990; Choo & Tan, 2011; Ihemeje, Okereafor, & Ogungbangbo, 2015)

As a pointer to the diverse application of the CVP analysis, some scholars studied how profit margin persistence can influence a firm's choice of business model (Collins, Chan, & Román, 2011), and what level of profit is normal for power generation (Simshauser & Ariyaratnam, 2014). In the same vein, Magee (1975) opined that the CVP analysis is a crude device for sensitivity analysis in managerial decision-making when it comes to highlighting the effects on profit of different levels of activity (volume and mix) and different combinations of fixed and variable costs of production (Magee, 1975; Kee, 2007). Also, Blocher and Chen (2004) used the CVP to consider the strategic issues related to operating leverage and how this affects the choice of performers and contract, and pricing strategies in a service industry (Blocher & Chen, 2004).

2.1 Profit and activity planning

According to Guidry, Horrigan, and Craycraft (1998), the CVP analysis provides a sweeping financial overview of the planning process which allows managers to examine the possible impacts of a wide range of strategic decisions such as pricing policies, product mixes, market expansions or contractions, outsourcing contracts, idle plant usage, discretionary expense planning, and a variety of other important considerations in the planning process (Guidry, Horrigan, & Craycraft, 1998). This is in line with works of Navaneetha, et al. (2017) which informs that CVP helps to scrutinize the relationship between changes in activity level and changes in total sales revenue, cost and profit and also provide beneficial information particularly for a business that is commencing operations or facing difficult economic conditions. It determines how many units of a product that must be sold to reach the business's breakeven point (Navaneetha, Punitha, Joseph, Rashmi, & Aishwariyaa, 2017).

The CVP analysis can also be used to measure the impacts of the profitability factors on the capital structure of a firm in a way that it was used to establish that the capital growth of a firm does not depend on the profitability factors but are important in the determination of the liquidity position of a firm (Mehar, 2005). It can also be used to report income when both inventories and production costs change during the year (Clancy & Madison, 1997). The CVP analysis has also been used to predict or determine whether a stochastic price-demand relationship exists for the product and to identify whether production quantity fixed at the beginning of the period equals to the actual demand realized in the period as well as help with analyzing the difference between production quantity and realized demand (Lau & Lau, 1987).

When a CVP model incorporates uncertainty, it qualifies to be used for analyzing the complications associated with decision-making under uncertainty. Yunker and Yunker (2003) employed a model incorporating uncertainty conditions in a study. They reported that the simplicity of the model permits analytical solutions for five "special prices" - (1) the highest price which sets breakeven probability equal to a minimum acceptable level; (2) the price which maximizes expected profits; (3) the price which maximizes a Cobb–Douglas utility function based on expected profits and breakeven probability; (4) the price which maximizes breakeven probability; and (5) the lowest price which sets breakeven probability equal to a minimum acceptable level (Yunker & Yunker, 2003). The CVP is also believed to help in bringing together all the financial information of an enterprise. (Jakupi, Statovci, & Hajrizi, 2017)

2.2 **Multi-product**

Since the business world has moved away from mono-product manufacturing, hardly would one find a single product producer, and this inadvertently renders the assumptions of the breakeven analysis on the basis of a single product moribund. The calls for multiproduct models were answered from different perspectives and according to the circumstances of each researcher. According to Gonzalez (2001), the two alternatives open to managers for analyzing the cost-volume-profit relationship in a multiproduct situation are to use a standard mix or to apply linear programming. However, each of these methods requires the model user to formulate a contribution rule that will allow computing, for each product, the output required to achieve a given (target) profit. (González 2001). The problem with the two methods is that a standard mix may not incorporate the optimality expected from the results of the analysis and the use of linear programming has to do with constraints that have exact input limitations. While a CVP analysis for a single-product company is relatively easier to illustrate, the CVP analysis for a multiproduct company takes extra steps and logic (Kim, 2015).

Building on the work of Enyi (2012), we present the model adopting the reversed contribution margin ratio (RCMR) as a credible alternative to the existing multiproduct models. The reversed contribution margin ratio (RCMR) as posited in Enyi (2012) builds on the fact that products with high contribution margin ratio attain breakeven point faster and at a lower activity level than products with lower contribution margin ratios; implying vividly that there is an apparent tradeoff between the contribution margin ratio and the product's breakeven point (Enyi, 2012). To further support this assertion, we use figure 1 and the data on table 1 to shed more convincing light on the subject. From Figure 1 it is evident that as the products' CMR (represented by the blue curve line) increases, the breakeven points (represented by the orange curve line) decreases; thereby proving that products'

breakeven points are in inverse relationship with their CMRs and in fact decrease in response to the increase in their CMRs.

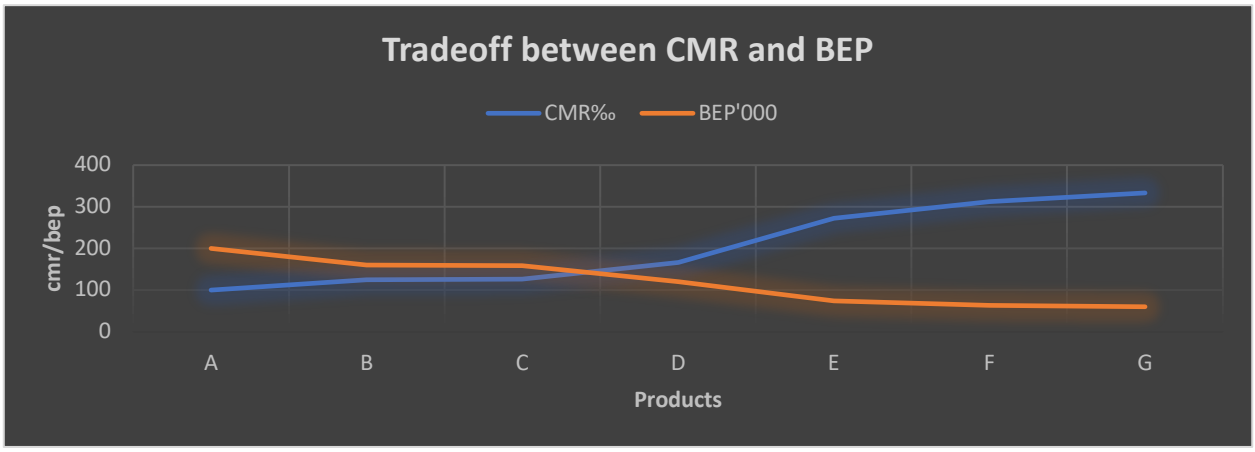

Figure 1: Comparative Chart showing the Tradeoff between CMR and Breakeven point

Table 1: Computation of Effects of Contribution Margin on Breakeven Point (Tradeoff Effect)

Product	Attributable Fixed Costs	Unit Selling Price	Unit Variable Cost	Contribution Margin	Contribution Margin Ratio (‰)	BEP '000
A	20,000	150	135	15	100	200
B	20,000	200	175	25	125	160
C	20,000	300	262	38	126.7	157.85
D	20,000	180	150	30	166.7	119.98
E	20,000	110	80	30	272.7	73.34
F	20,000	80	55	25	312.5	64
G	20,000	90	60	30	333.3	60

Table 2: Budgeted Activity of Sampan Inc. for the next period

Product	Budgeted Sales Qty	Unit Selling Price	Total Budgeted Sales Value ($)	Unit Variable Cost	Total Budgeted Variable Cost	Unit Contribn Margin	Total Contribution Margin
A	7000	140	980000	80	560000	60	420000
B	3000	140	420000	82	246000	58	174000
C	3000	160	480000	97	291000	63	189000
D	2000	160	320000	90	180000	70	140000
E	8000	60	480000	41	328000	19	152000
F	10000	30	300000	25	250000	5	50000
Total	**33000**		**2980000**		**1855000**	**275**	**1125000**

The company's budgeted fixed costs for the period is $402,000

As an elaborate illustration, we use the data on table 1, which have f = 420,000; s = 2,980,000, and c = 1,125,000 where f, s, and c represents fixed costs, sales revenue and contribution margin respectively (for a mono-product analysis), to generate the data and computations on tables 3 and 4. The data so generated on the two tables formed the main thrust of our analytical consideration and comparison; and to do the comparative test, using the outcome of the formula f/(s-c) as the control value, we break down the major hypothesis in 1.1 as follows:

H_0 1: Control value ≠ WCM value

H_0 2: Control value ≠ RCMR value

3. Methodology

This study employed an Ordinary Least Square (OLS) regression model and desk check computation technique on rehashed-operational data collected from real business operations of a confectionery company and bakery firm. The regression analysis made use of a control variable derived on the basis of a mono-product breakeven point computed using the sums of all sales, variable costs and the aggregate contribution margin from the joint products on the assumption of a single product. The following multiple OLS regression model was used to test the two hypotheses ($H_0$1 and $H_0$2):

$$\text{Control value} = \beta_0 + \beta_1 \text{WCM} + \beta_2 \text{RCMR} + \varepsilon \qquad (1)$$

The study also made use of extensive review of extant literature on the subject of cost volume profit analysis. Particularly, the study utilized the following theoretical foundation and formula to derive the multi-products' weighted contribution margin ratio (WCM) and the reversed contribution margin ratio (RCMR).

3.1 The Weighted Contribution Margin (WCM) approach

The WCM and the associated breakeven points (Table 3) were computed using the following steps:

i) To begin, we computed the weighted contribution margin (WCM) by
   a. First computing for each product the proportional share of the total sales revenue;
   b. Then we computed the contribution margin per product;
   c. Then we multiplied the answers in 'a' and 'b' and summed them up to obtain the WCM;
   d. We divided the answer obtained in i)b by the sum of the products in i)c to get the weighted contribution margin ratio (WCM) for each product.

ii) To get the joint-products' breakeven quantity when divided the total fixed costs with the WCM computed in i)c above.

iii) To get the individual breakeven points, we multiplied the breakeven quantity computed in ii) with the WCM per product derived in i)d above.

iv) To arrive at the breakeven sales revenue, we multiplied the figures derived in iii) with the individual product's selling price.

3.2 The Revised Contribution Margin Ratio (RCMR) approach

As with the WCM, the computational steps used for calculating the RCMR was derived from the model used in Enyi (2012) and are as follows:

a. First we computed the individual product's contribution margin ratio (CMR) by dividing the product's contribution margin with the selling price;
b. Secondly we summed up the CMRs computed in 'a' to get the total CMR (TCMR)
c. Then we divided the CMR per product with the TCMR computed in 'b' to get the proportional CMR (PCMR)
d. To reflect the CMR/BEP tradeoff we reversed the PCMR value by deducting the PCMR from 1 to obtain the reversed value (RV).
e. We then added up the RVs for all the products to get the total reversed value (TRV).
f. To obtain the individual reversed contribution margin ratio (RCMR), we divided the individual RV with the computed TRV.
g. To get the individual breakeven points, we multiplied the breakeven quantity computed in ii) with the WCM per product derived in i)d above.
h. To arrive at the breakeven sales revenue, we multiplied the figures derived in iii) with the individual product's selling prices.

The above steps were compiled into the following individual product's breakeven point (BEP) formula using the RCMR procedure:

$$\text{b = individual product's breakeven point} = \frac{fsy_t}{c}$$

Where,

y_t = RCMR = $\frac{e_t}{\sum_{t=1}^{n} e}$

w = product's CMR = $\frac{Contribution\ per\ unit}{Selling\ Price}$

c = total overall contribution = Total Sales Value – Total Variable Cost

f = total fixed costs

d_t = proportional CMR (PCMR) = $\frac{w_t}{\sum_{t=1}^{n} w} 100$

e_t = reverse value = 100 - d_t

n = number of products;

s = total budgeted sales value

n = number of joint products.

4. Data Analysis, Findings and Discussions

The analytical overview of the first step of the comparison was clearly visible when we computed the breakeven points using the two models with the budgeted operational data on table 2.

With the WCM model, the joint-products BEP = $\frac{402,000}{49.137}$ = 8,182 units approximately; tables 3 and 4 provide details on how this figure was shared among or allocated to the joint products. However, to obtain the overall breakeven point using the RCMR model, we divided the total fixed costs with the overall contribution margin ratio which was obtained by dividing the total budgeted contribution margin with the total budgeted sales revenue. This overall CMR translates to 1,125,000/2,980,000 = 0.3775168, using the data presented on table 2.

Consequently, using the RCMR model, the joint-products BEP in sales revenue = $\frac{402,000}{0.37752}$ = $1,064,853.33. This breakeven sales figure was then appropriated to the individual products using the computed RCMR. To obtain the breakeven quantity for each product, we divided the product's share of the breakeven sales figure with the product's selling price.

The litmus test in this analysis is to compare the accuracy and effectiveness of the weighted contribution margin ratio (WCM) approach with that obtained using the reversed contribution margin ratio (RCMR) given the same operating condition.

Table 3: Weighted Contribution Margin Ratio (WCM) computations'

Prod A	**Sales Prpn b**	**Unit CM c**	**WCM d b*c**	**WCM e = (d/∑d)**	**BEP e * 8182**	**BEP $ 8182**
A	$\frac{98}{298} = 0.3289$	60	19.734	$\frac{19.734}{49.1379} = 0.4016$	3,285	459,900
B	$\frac{42}{298} = 0.1409$	58	8.1722	$\frac{8.1722}{49.1379} = 0.1663$	1,361	190,540
C	$\frac{48}{298} = 0.1611$	63	10.1493	$\frac{10.1493}{49.1379} = 0.2065$	1,690	270,400
D	$\frac{32}{298} = 0.1074$	70	7.518	$\frac{7.518}{49.1379} = 0.1530$	1,252	200,320
E	$\frac{48}{298} = 0.1611$	19	3.0609	$\frac{3.0609}{49.1379} = 0.0623$	510	30,600
F	$\frac{30}{298} = 0.1007$	5	0.5035	$\frac{0.5035}{49.1379} = 0.0103$	84	2,520
Total	= 1.0000	275	49.1379	= 1.0000	8,182	1,154,280

Table 4: Reversed Contribution Margin Ratio (RCMR) Computation

Product A	**CMR b = (u/p)100**	**PCMR*100 c = (b/∑b)100**	**RV d = 100 - c**	**RCMR e = (d/∑d)**	**BEP e * (fs/c)**
A	$\frac{60}{140} = 42.86$	$\frac{42.86}{215.75} = 19.86$	80.14	$\frac{80.14}{500} = 0.1603$	170,695.99
B	$\frac{58}{140} = 41.43$	$\frac{41.43}{215.75} = 19.20$	80.80	$\frac{80.80}{500} = 0.1616$	172,080.30
C	$\frac{63}{160} = 39.37$	$\frac{39.37}{215.75} = 18.25$	81.75	$\frac{81.75}{500} = 0.1635$	174,103.52
D	$\frac{70}{160} = 43.75$	$\frac{43.75}{215.75} = 20.28$	79.72	$\frac{79.72}{500} = 0.1594$	169,737.62
E	$\frac{19}{60} = 31.37$	$\frac{31.67}{215.75} = 14.68$	85.32	$\frac{85.32}{500} = 0.1706$	181,663.98
F	$\frac{5}{30} = 16.67$	$\frac{16.67}{215.75} = 7.73$	92.27	$\frac{92.27}{500} = 0.1846$	196,571.93
Total	= 215.75	= 100	= 500	= 1.0000	1,064,853.33

Table 5: WCM and RCMR Comparative Analysis

Product	**WCM**	**RCMR**	**Difference**
A	459,900	170,695.99	289,204.01
B	190,540	172,080.30	18,459.70
C	270,400	174,103.52	96,296.48
D	200,320	169,737.62	30,582.38
E	30,600	181,663.98	-151,063.98
F	2,520	196,571.93	-194,051.93
Totals	1,154,280	1,064,853.33	89,426.66

4.1 Statistical findings

Table 6: **Descriptive Statistics**

	Control	**WCM**	**RCMR**
Mean	1063.15	1202.49	1063.16
Std. Dev	187.267	208.921	187.255
Obs	42	42	42

The regression line produced by the analysis using the OLS equation [Control value = $\beta_0 + \beta_1$WCM + β_2RCMR + ε] is presented with other resulting analytical figures as follows:

y = 0.0221 – 0.0031$_{WCM}$ + **1.0035**$_{RCMR}$ + e
Durbin Watson statistics = 2.3086;
Correlation coefficient (*r*): WCM = 0.962; RCMR = 1.000
The relationship between the Control variable and the WCM is given by:
β = -.003, t = -1.439, p = .158
While the Control variable related with the RCMR using:
β = 1.003, t = 439.779, p = .000
Overall model fit is given by $Adj.R^2$ = 1.000, $F_{(2, 39)}$ = 1293991.321, p = .000

4.2 Discussions

Drawing from Tables 3, 4, and 5 we found that the RCMR has two major areas of divergence from the WCM. First, rather than use the weighted contribution margin (WCM), it uses the overall contribution margin ratio (CMR)

to divide the total fixed costs for the breakeven point computation. This implies that the RCMR model treats the sums of the multiproduct operational data as single product data. It achieves this by dividing the total contribution margin with the total budgeted sales revenue to generate the overall CMR which is then applied to divide the total fixed costs to arrive at the joint-products breakeven sales. Secondly, the other area of divergence is the reversal of the individual product's CMR ranking to reflect the negative relationship or tradeoff between the CMR and the breakeven point not factored into the generation of the WCM method.

The joint-products breakeven analysis outcome also revealed that it will take more resources to reach the breakeven point with WCM ($1,154,273.60) than with the RCMR ($1,064,853.53) as it is apparent that the WCM has deviated from the established mathematical relationship between the fixed costs and contribution level in normal CVP analysis. This shift implies that products with lower contribution margins and a higher proportion of total sales will be allocated more resources at a low capacity utilization stages than products with higher margins and lower sales proportion. Further problems may set in if the favored products carry higher prices which may be more difficult to sell than the lower priced ones as it is the case with Sampan Inc operational data, and this will happen at the expense of the firm's profitability. Table 5 shows the result of neglecting the CMR/BEP tradeoff as the WCM allocates abysmally low quantities to products E and F while overloading the allocations of the first four products with the resultant effect of pushing the spuriously computed breakeven beyond the actual breakeven point by more than $89,000. Furthermore, we use figure 2 to confirm the accuracy of the breakeven point produced by the RCMR .

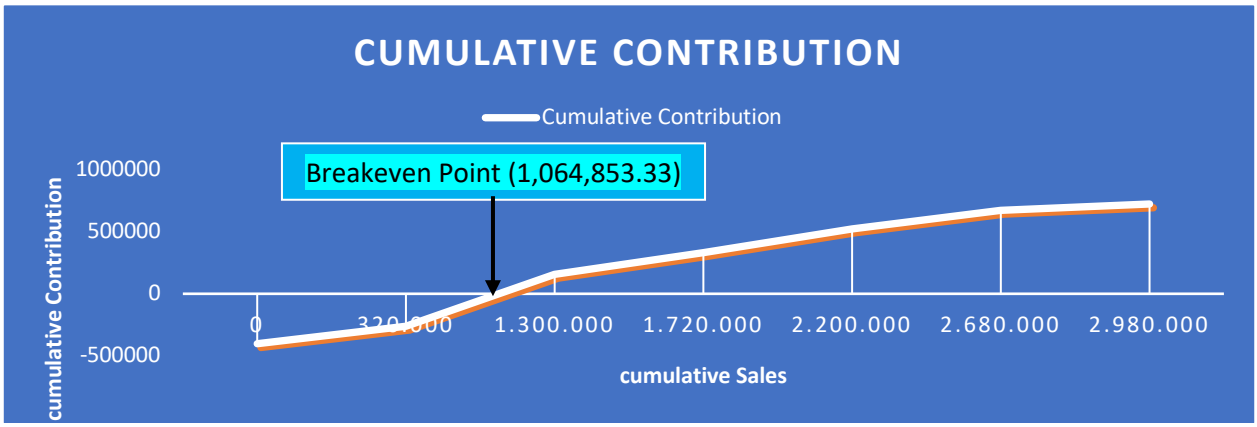

Figure 2: Cumulative Contribution and Breakeven Point (Sales revenue)

Table 7: WCM and RCMR with $75,000 Profit

Product		USING WCM MODEL			USING RCMR MODEL			
		WCM	BEP QTY	SALES	RCMR	BEP QTY	SALES	Difference
A	140	0.402	3,902	546,280	0.1603	1,393	202,163.20	344,116.80
B	140	0.166	1,612	225,680	0.1616	1,400	204,690.24	20,989.76
C	160	0.207	2,010	321,600	0.1635	1,238	205,953.76	115,646.24
D	160	0.153	1,485	237,600	0.1594	1,207	200,899.68	36,700.32
E	60	0.062	602	39,120	0.1706	3,470	216,061.92	-176,941.92
F	30	0.010	97	2,910	0.1846	7,571	233,751.20	-230,841.20
Totals			9,708	1,373,190		16,279	1,263,520.00	109,670.00

Table 8: Comparative Income Statement Analysis

Product		USING WCM MODEL			USING RCMR MODEL		
		Qty	$	$	Qty	$	$
		Sales		1,373,190	Sales		1,263,520
A	80	3,902	312,160		1,393	111,440	
B	82	1,612	132,184		1,400	114,837	
C	97	2,010	194,970		1,238	120,064	
D	90	1,485	133,650		1,207	108,630	
E	41	602	24,682		3,470	142,290	
F	25	97	2,425		7,571	189,275	
		Total Variable Costs		**800,071**			**786,536**
		Contribution Margin		573,119			476,984
		Less: Fixed Costs		402,000			402,000
		Expected Profit		171,119			74,984

As further proof, we extrapolate the Sampan Inc operational data on table 2 with a profit plan of $75,000 as the operating income expectations for the coming period. The CVP analysis for the six products under the two models as presented in tables 7 and 8 revealed that the WCM model overshot the expected target profit of $75,000 by a whopping $96,119 due to the inaccuracies embedded in its assumptions, while the RCMR slightly undershot the same target by just $16 which may probably be attributable to rounding errors in computation. From this simple analytical illustration, we can deduce that the use of the WCM is capable of distorting activity schedules and profit plans for multiproduct CVP analysis in an organization that depends on its use.

To further corroborate the foregoing, the descriptive statistics in table 6 showed how closely related the RCMR model figures are with the Control figures with the means and standard deviations of the two basically the same. This is a sharp contrast with those of the WCM which showed a 13.1% difference in means and 11.6% difference in standard deviations. Again, looking at the model output, it would be seen that the WCM is negatively congruent to the control variable (used as the model's dependent variable) while the RCMR is almost perfectly congruent to it on one-on-one basis meaning that the control variable figures are basically similar to the values produced by the RCMR model. This is even more evident when you consider the beta values of -0.003 with an insignificant p value of 0.158 for WCM and 1.003 with a significant p value of 0.000 for the RCMR. The correlation coefficients of 0.962 and 1.000 returned by the WCM and RCMR respectively against the control variable further confirmed the superiority of the latter over the former.

Conclusion and recommendations

This study concludes that despite the seeming simplicity in understanding and application, the Weighted Contribution Margin (WCM) approach to multiproduct CVP analysis suffers from many inaccuracies and is capable of misguiding decision makers on multiproduct profit planning and activity budgeting. The use of the RCMR as an alternative model was shown to have the capability of effectively overcoming the flaws of the WCM and promises to offer a big improvement in CVP pedagogy and applications in an expanding business environment.

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The AfCFTA is a Lightning Rod for Regional Integration and Free Trade

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Abstract
This paper looks at the construction of tariff band structure and linear cut of the AfCFTA countries. AfCFTA symbols a different landmark on the road to deeper regional integration and the pursuit for well-built and prolonged growth, which the extensive nature will transform businesses especially small and medium-sized enterprises (SMEs), traders and consumers because of the removal of tariffs, and non-tariff barriers by 2025 for developing countries ,2030 for LDCs and 2045 for the six countries. The agreement commits countries to removing tariffs on 90 percent on inclusion list after 5 and 10 years for the non LDCs and LDCs in that order, while the remaining 10 percent of sensitive items to be phased out after 10 and 13 years for developing and non LDCs respectively on 7% for sensitive list and 3% for exclusion list. Thus the AfCFTA may make global trade regime either to become stronger or to remain under attack from a membership of 55 less one (Eritrea) highly diverse countries of Africa. Further, the AfCFTA aims to preserve existing regional economic communities as building blocs. With regard to disposition toward trade liberalization COMESA and SADC countries show much more likelihood and stand to liberalize faster than the ECCAS, UMA and ECOWAS countries. This can be done through an equal annual reduction of 20 percent to all tariffs above 5 percent over 5 years for the developing countries and 10 percent equal annual deductions for 10 years for LDCs.

Keywords: AfCFTA Building Blocks and Stumbling Blocks, Tariff Band and Linear Cut

Introduction

The world is now watching Africa for having demonstrated the most positive attitude to regional integration without political motives or mischief interpreted. We can't read any malice or behind the scene forces into the formation of the AfCFTA. They have opened up for Trade and Development as secondary to political or security goals and they will be used as a tool rather than a scheme of the uppermost, being driven by political will as a crucial component in the whole process without which, little progress will be made.

This country Africa trades very little with itself, she has a history particularly affected by geographical fragmentation, weak institutional, policies, climatic changes, infrastructural challenges, remoteness, poverty, diseases and low skills development. There are 55 sovereign states in Africa that have a broad range of languages, economic and social diversities. Many of these countries have very small economies, each country has four neighbours, whereby 15 countries are landlocked, and 33 out 47 least developed countries in the world are in Africa. Economic integration through the AfCFTA would tolerate the small economies to benefit from the scale

of a combined market and impetus to flexibility by leveraging on widespread capacities to counter to individual weaknesses.

Africa will now compete with other members regional trade areas of the world through the AfCFTA, following the footprints, imitating their structures and purpose right from the much older EU and NAFTA, Association of East Asian Nations (ASEAN) to the Common Market of the South (MERCOSUR) among others. Thus the impact of 54 AfCFTA countries will undoubtedly shape the future of globalization.

AfCFTA will most likely take the model described by theory of moving from FTA, to Custom unions, to Common markets, to Economic unions. It has the ability to lessen regional economic threats in order to expand the importance of the particular countries whose individual trade would be infinitesimal to the economies of other RTAs. The AfCFTA Nation-states should be feeling confident walking the course together than going it alone.

Thus, the main forces behind the AfCFTA impetus are the lessons from WTO's Doha Round negotiations stalemate, the need to substantially revamp African towards the EPAs, AGOA and emerging economies from the South, like China, India and Brazil among others.

This paper presents a brief review of the progress of AfCFTA that will start trading in 2020 and highlights of some issues, which remain as stumbling blocs on the way to full liberalisation. The paper also tries to elaborate on tariff band strategy to arrive at the 100% annual tariff cut

The AfCFTA building blocks and stumbling blocks

Regionalism can be either a stumbling bloc or a building bloc when there are asymmetries in endowments or costs (Saggi and Yildiz 2009). With the stalemate at the WTO negotiation (Doha round), the gains from AfCFTA will be so large to the member states and it will benefit both outsiders and country members. This is why the 54 African countries found it important to have to some extent a unified voice of purpose in Niamey when they endorsed the AfCFTA.

The African Continental Free Trade Area (AfCFTA) building blocks are the existing and future Regional Economic Communities (RECs),Tripartite and the initiatives of the African Union like the Action Plan on Boosting Intra-Africa Trade (BIAT) ,Framework for fast-tracking of a Continental Free Trade Area, the agreements of coordinating and harmonising policies, the Action Plan for Accelerated Industrial Development of Africa (AIDA), the Programme of Infrastructure Development in Africa (PIDA) and the Minimum Integration Programme (MIP) ,the absence of Doha /WTO talks and Agenda 2063.

The stumbling block is whether the RECs who would have agreed to cut MFN tariffs prior to the AfCFTA will still agree to cut them after the AfCFTA was signed and if AU member can provoke nationalistic feelings of the 1960s. Of interest is the silent stumbling block which needs to be accommodated in the negotiations and after commencement of the AfCFTA in 2020 and that is the Rules of Origin requirements, special interest politics and the power of exporters and import-competitors who are the cause of trade. Nevertheless, their concerns are counteracted as tariffs come down reciprocally with the AfCFTA; since the import-competing sectors get smaller and less powerful in trade policy formulation. Similarly, as trade tariffs reduce, exports increase and political muscles also grow as the access to foreign markets increase. Thus the reciprocal liberalization will reshape the political-economic landscape inside each country in a way that makes the future liberalization stronger. On the other hand the rules of origin must be made straightforward, translucent, business welcoming, unsurprising and easy to get to.

On the pacing of the tariff reduction, some concerns could be raised that the AfCFTA is moving at a faster pace than her old regional trade blocs. On the political front, it can be observed that liberalization come 2020 may be relatively easier than the last two years of achieving full liberalization because the impact of revenue loss and flooding of cheap products from other countries will be felt. The sectors left to be liberalized at the later stages are either politically sensitive like agriculture or are highly protected in the past. Thus there would always be pressures for a delay or for extension or status quo of the protection on said sectors or others would want higher protection

Acceleration of the AfCFTA

AfCFTA remains a lightning rod for political opinions about regional integration, globalisation and free trade. The treaty which was to be entered into force by the AU members in December 2017 but put forward to march 2018 and Africa become the largest free market in the world. AU countries have agreed to remove tariffs on more than 90 percent of products within 5 and10 years. On that spirit AfCFTA will promote peace by promoting trade and investment, make life easier for poor majority Africans, build confidence in the continent, handle disputes constructively, raise incomes and stimulate economic growth, above all realize the spirit of envisioned Pan-Africanism and end discrimination implanted by outsiders among all participating countries.

The AU Heads of State and Government agreed to establish AfCFTA with the objective of increasing the region's competitive advantage with the world market. The AfCFTA must begin as a catalyst for efficiency, long-term competitiveness, expand intra-regional trade and give the AU consumers a variety of choices and better-quality consumer products. Of course, the necessary entry and exit take time, and indeed most liberalisations are phased in over many years. Six member countries were allowed reservation on the 85% instead of 90% liberalization but it's achievable though at a longer period than others. It is thus the time dimension that may lead to the uninterrupted, harmonized nature of the AfCFTA.

So, the setting of a quantitative target for the overall product and trade coverage of 85% and 90% for LDCs and non LDCs meet formally the WTO-compatibility test as well give the impression that Africa can do and is able to show the world that liberalization is the way under AfCFTA as well as an inducement to the REC members to undertake at least an equivalent degree of market opening internally.

The negotiations towards the establishment of this African mega-FTA were officially launched in June 2015 with the objective of concluding them by the end of 2017, but where eventually in Kigali march 2018. Seven meetings of the AfCFTA Negotiating Forum (AfCFTA-NF), the AfCFTA dedicated negotiating body, were held since then, with the last one in July in Niamey, Niger 2019.

In the nutshell, Africa having been ignored for so many years, now it is one of the fastest-growing regions in the world and, a market that no major trading nation can ignore. The scope of liberalization/exclusion is now determined, and the speed of liberalization has been agreed to be of 5 and 10 years. That means in its simplest form, all base rates, whatever the level, can be subject to an equal annual reduction over the 5 years for developing countries and 10 years for LDCs.

AfCFTA TARIFF LIBERALISATION STRATEGY-low hanging fruits

Zero MFN, blanks and nuisance tariffs.

AfCFTA tariff liberalization for some countries will be faster than others, especially the one who shall be wise and ambitious, to go in for the low hanging fruits with the agreements in force and trade commencing in 2020. These include zero MFN lines, the blank lines as well as low rates (nuisance tariffs) of below 3 per cent. But because the concentration rate in all AU countries starts at 5 percent and above it is paramount and ambitious too, to immediately eliminate tariffs below 5 percent (4-5%) come 2020 and treat them as nuisance. This sounds farfetched, but it might be the best way forward for the AfCFTA to accelerate liberalization process to allow Africa to boost its bargaining power in the world trade and negotiation as well as avoid having her exports face discrimination in outside markets.

Nuisance tariffs are the ones regarded to be so low that it costs the government more to collect than the revenue they generate. They range from 0-3 percent. The quickest strategy to liberalise could include scrapping all tariffs below 5% which can be regarded as a nuisance because they generate little benefits. Thus for the AfCFTA tariffs below 5% will be very ideal to be liberalized come 2020 when trading starts because they comprise of a negligible percentage of the product line, as shown in Table1.

Table 1. ZERO MFN, BLANKS AND NUISANCE TARIFFS

MFN RATES				COMESA	COUNTRIES						
%		Burundi	Comoros	Djibouti	Egypt,	Eritrea	Ethiopia()	Kenya	Libya	Madagasc	Mauritius
0		23.97	4.43	0.00	11.37	0.00	2.87	41.20	100.00	6.22	78.12
BLANKS		0.20	0.00	0.00	0.17	0.00	1.51	0.35	0.00	0.00	3.10
0≤5		0.00	0.00	10.93	18.82	26.87	0.99	0.00	0.00	0.62	0.72
	TOTAL	24.17	4.43	10.93	30.35	26.87	5.37	41.55	100.00	6.83	81.94
MFN RATES		Malawi	Rwanda	Sudan	Swaziland	Seychelle	Uganda	Congo, DF	Zambia	Zimbabwe	
0		27.36	15.78	6.88	53.00	87.98	26.19	0.15	21.46	16.09	
BLANKS		0.00	0.39	0.25	2.06	0.36	0.44	0.02	0.00	13.71	
0≤5		0.40	0.00	6.04	1.93	0.10	0.00	0.00	0.00	0.27	
	TOTAL	27.76	16.17	13.17	56.99	88.44	26.63	0.17	21.46	30.07	

Source: TRAINS/WITS Latest year

This will lead to over 50 percent of the tariffs abolished immediately when the agreement takes effect for the SACU countries, 20% for EAC countries,20% for the majority of COMESA, 3% for the majority of ECOWAS and 2% of ECCAS countries. The greatest beneficially of this strategy will be Mauritius with 81.9% and Seychelles with 88.4%, while Kenya has 41.5%, Nigeria 2.83%, South Africa 50.1%, Egypt 30.4% and Zimbabwe 30 % line liberalized immediately. The remaining tariffs of 5% and above can be targeted for gradual elimination of 5 and 10 years for developing and LDCs respectively, to achieve the ambitious agreement, of opening new trade and investment opportunities for African countries.

Table 2. Zero MFN, blanks and nuisance tariffs

		SADC	COUNTRIES								
COUNTRIES		Angola	Botswana	CONGO D	Lesotho	Mozambic	Namibia	South Afri	Tanzania	Madagasc	Mauritius
MFN RATES		%	%	%	%	%	%	%	%	%	%
0		0.25	50.33	0.15	51.05	2.72	53.03	46.10	28.99	6.22	78.12
BLANKS		0.00	1.46	0.02	2.43	0.42	2.33	1.86	0.42	0.00	3.37
0≤5		44.85	2.06	0.00	2.00	13.48	1.91	2.15	0.00	0.62	0.72
	TOTAL	45.09	53.85	0.17	55.48	16.62	57.27	50.11	29.40	6.83	82.21
		Malawi	Swaziland	Seychelle	Zambia	Zimbabwe					
MFN RATES		%	%	%	%	%					
0		27.36	53.00	87.98	21.46	16.09					
BLANKS		0.00	2.06	0.34	0.00	13.71					
0≤5		0.40	1.93	0.10	0.00	0.27					
	TOTAL	27.76	56.99	88.42	21.46	30.07					

Source: TRAINS/WITS Latest year

Thus, in order to evaluate the level of market access for goods when the AfCFTA comes to force, we first examine RECs tariff concession schedule in Tables 1-4, in terms of the number of tariff lines, belonging to the Early Harvest Program-zero MFN, blank lines and the nuisance. It's clear that serious negotiations will have to be done with ECOWAS countries to make more sacrifices of tariff cuts above 5 percent. Their early harvest level is below 4 percent, except for Liberia, Cape Verde, and the Gambia, which are at 13.23, 19.12 and 9.64 percent in that order. This is way below some countries in COMESA and SADC.

Table 3. Zero MFN, blanks and nuisance tariffs

	ECOWAS	COUNTRIES								
MFN RATES		BENIN	BURKINA I	CAPE VERI	CÔTE D'IV	GAMBIA	GHANA	GUINEA	GUINEA BI	LIBERIA
0		2.42	2.46	15.59	2.36	9.64	1.61	4.80	2.69	0.00
BLANKS		0.00	0.00	0.00	0.00	0.00	0.19	0.32	0.00	6.02
0≤5		0.00	0.00	3.53	0.00	0.00	0.04	0.28	0.00	7.21
	TOTAL	2.42	2.46	19.12	2.36	9.64	1.84	5.40	2.69	13.23
MFN RATES		MALI	NIGER	NIGERIA	SENEGAL	SIERRA LE	TOGO	MOROCCO		
0		2.02	3.29	2.83	2.64	0.40	3.12	0.00		
BLANKS		0.00	0.00	0.00	0.00	0.65	0.00	0.00		
0≤5		0.00	0.00	0.00	0.00	0.28	0.00	0.37		
	TOTAL	2.02	3.29	2.83	2.64	1.34	3.12	0.37		

Source: trains/wits latest year

In terms of the disposition toward trade liberalization COMESA and SADC show much more likelihood and stands to liberalize faster than the ECCAS, UMA and ECOWAS countries.

Table 4. Zero MFN, blanks and nuisance tariffs

			ECCAS COUNTRIES							
MFN RATES		CONGO	CHAD	CENTRAL A	GABON	CONGO DI	BURUNDI	RWANDA	GUINEA	CAMEROON
0		2.28	1.31	1.91	3.94	0.13	23.97	15.78	4.80	1.62
BLANKS		0.00	0.84	0.00	0.00	0.02	0.20	0.39	0.32	0.00
0≤5		0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.09
	TOTAL	2.34	2.15	1.91	3.94	0.15	24.17	16.17	5.39	1.71
		UMA COUNTRIES								
		ALGERIA	Libya	Mauritani	Morocco	Tunisia				
MFN RATES										
0		0.45	100.00	0.00	0.00	17.30				
BLANKS		0.00	0.00	0.00	0.00	0.00				
0≤5		0.05	0.00	0.00	0.37	0.89				
	TOTAL	0.50	100.00	0.00	0.37	18.19				

Source: trains/wits latest year

This can be done through an equal annual reduction of 20 per cent to all tariffs above 5 per cent over 5 years for the developing countries as shown in Table 5. Similarly, the 10 percent equal annual deductions for 10 years can be applied for LDCs as shown in Table 6. This linear method allows reduction to continue until the tariffs are eliminated as well as softening the impact of liberalization.

Table 6. Example of linear formula for African Least Developed Economies-10 years Annual tariff cut

			YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	YEAR6	YEAR7	YEAR8	YEAR9	YEAR10	CUT %
Djibouti	5≤10	5	4.5	4	3.5	3	2.5	2	1.5	1	0.5	0	0.5
Eritrea	10≤15	10	9	8	7	6	5	4	3	2	1	0	1
Ethiopia	15-20	15	13.5	12	10.5	9	7.5	6	4.5	3	1.5	0	1.5
Madagascar	20-25	20	18	16	14	12	10	8	6	4	2	0	2
Malawi	25-30	25	22.5	20	17.5	15	12.5	10	7.5	5	2.5	0	2.5
Rwanda	30-35	30	27	24	21	18	15	12	9	3	3	0	3
Sudan	35-40	35	31.5	28	24.5	21	17.5	14	10.5	7	3.5	0	3.5
Uganda	40-45	40	36	32	28	24	20	16	12	8	4	0	4
Congo, DRC	45-50	45	40.5	36	31.5	27	22.5	18	13.5	9	4.5	0	4.5
Zambia	50-55	50	45	40	35	30	25	20	15	10	5	0	5

Angola	GAMBIA	TOGO	SENEGAL
Lesotho	GUINEA	CHAD	SIERRA LEONE
Mozambique	GUINEA BISSAU	CENTRAL AFRICA REP.	Burundi
Tanzania	LIBERIA	GABON	Comoros
BENIN	MALI	CAMEROON	CAPE VERDE
BURKINA FASO	NIGER	MAUITANIA	

Source: trains/wits latest year

However, the equal reduction of 20 and 10 per cent can necessitate different effect on different tariff rates, as well as greater percentage points for higher tariff rates e.g. the 60 per cent tariff band for 5 years for EAC countries would need to be reduced by 12 percentage points for Kenya annually and 6 percent for others in 10 years so that they would incur greater effect on import price with greater commercial implications by being reduced to zero.

Eventual Target for AfCFTA: Tariff elimination modalities

Free-trade negotiations must always be the elimination of tariffs, either on entry into force of the agreement or in stages. How this is done depends on the views of the negotiating parties. It is usually possible to reach agreement on phasing where this is necessary. Therefore, the stronger the technique used, the higher the probability that negotiations can be completed successfully.

The 54 AfCFTA Member Countries agreed to working towards the total elimination of import duties on all products to achieve the ultimate objective of the AfCFTA. However, the cuts will be made through phase-ins which are commonly employed but which however, requires caution and slow gradations to avoid cheaper foreign goods of the same kind being poured flooding so fast into the home market which may deprive all at once very many people of employment and means of subsistence. That is why the Phase-ins set by AfCFTA have taken a shorter period (5 years) for developing countries, and 10 years for LDCs, which then requires that these countries have to do it for some products, and will often provide for equal annual cuts during that period. That is why the AfCFTA has adopted the prototype of a modality of linear cut, pursuant to which all tariff lines will be reduced by a specified percentage.

The choice of a modality or Approaches and Techniques to Tariff Reduction depends basically on the objectives sought by the negotiators, which are also dictated by the blessing of launching the negotiations which can be political, practical or even historical considerations. Therefore, the AfCFTA tariff cut is based on 100 percent linear cuts in principle. The 100 percent linear cut applied across-the-board combined with various arrangements for staging, exclusion or limited liberalization as applied to assorted products would accelerate the AfCFTA agreements

Table 5. Example of linear formula for African developing economies-5 year's Annual tariff cut

	AfCFTA	TARIFF ELIMINATION FOR DEVELOPING COUNTRIES-100/5YEARS=20% ANNUALLY						
			YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	ANNUAL CUT %
Libya	5≤10	5	4	3	2	1	0	**1**
E swatini	10≤15	10	8	6	4	2	0	**2**
Seychelles	15-20	15	12	9	6	3	0	**3**
Mauritius	20-25	20	16	12	8	4	0	**4**
Zimbabwe	25-30	25	20	15	10	5	0	**5**
Namibia	30-35	30	24	18	12	6	0	**6**
S. Africa	35-40	35	28	21	14	7	0	**7**
Botswana	40-45	40	32	24	16	8	0	**8**

CÔTE D'IVOIRE	45-50	45	36	27	18	9	0	**9**
Morocco	50-	50	40	30	20	10	0	**10**
CONGO								
Kenya								
Egypt,								

Source: Trains/wits latest year

Thus the linear cut approach, and the speed of annual reduction is basically determined by the length of implementation period. The longer the period, the smaller the annual cuts, and hence slower liberalization. Therefore at all the level of initial tariff, the tariffs are reduced by 20 percent (100%/5years) annually with all tariffs converging to zero rates at year 5, and the pace of reduction is identical across all tariff rates for developing countries, while it is 10% (100%/10) for non LDCs.

Products Covered and Tariff Bindings

The national tariff structures of AU members reveal a wide diversity and Simple average applied tariff rate ranges from 1.47 percent and 2.93 percent for Mauritius and Seychelles respectively to 20.21 percent and 21 percent for Algeria and Sudan in that order.

On the other hand, the bulk of tariff lines concentrate in the tariff 10 and 20 percent for ECOWAS, 10 and 25 percent for EAC, 5 and 40 percent for COMESA, 5 and 20 percent for SADC and 10 and 30 percent for UMA and ECCAS. That shows a large presence of high rates, which are apparently sensitive for economic, revenue and cultural/religious grounds.

Table 7 shows that majority of the countries fall on tariff bands 20-25 and 25-30 percent. As a result, the distribution of national tariff lines by applied tariff rates shows that each individual member country is to meet the threshold target for ambition by cutting the applied tariff rate to zero. As depicted in Tables 8-11, all the countries (whose data is available) must cut into a tariff band in order to achieve the 90 percent ambition.

Table 8: ECOWAS tariff band and the level of ambition-90%

		ECOWAS	COUNTRIES													
	BENIN		BURKINA FASO		CAPE VERDE		CÔTE D'IVOIRE		GAMBIA		GHANA		GUINEA		GUINEA BISSAU	
MFN F	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF
0	2.42	2.42	2.46	2.46	15.59	15.59	2.36	2.36	9.64	9.64	1.61	1.61	4.80	4.80	2.69	2.69
BLANK	0.00	2.42	0.00	2.46	0.00	15.59	0.00	2.36	0.00	9.64	0.19	1.80	0.32	5.12	0.00	2.69
0≤5	0.00	2.42	0.00	2.46	3.53	19.12	0.00	2.36	0.00	9.64	0.04	1.84	0.28	5.40	0.00	2.69
5≤10	12.16	14.58	24.68	27.14	13.71	32.82	22.36	24.73	7.99	17.63	26.78	28.62	27.57	32.97	26.64	29.32
10≤15	23.49	38.07	20.68	47.82	11.10	43.92	18.92	43.64	11.04	28.68	21.68	50.30	20.51	53.47	21.27	50.59
15-20	6.69	44.77	6.08	53.90	2.73	46.65	4.30	47.95	0.49	29.16	3.95	54.25	1.63	55.11	3.11	53.71
20-25	51.66	96.43	43.02	96.92	16.86	63.51	50.18	98.12	70.84	100.00	43.47	97.71	44.97	100.07	46.29	100.00
25-30	0.63	97.06	0.38	97.30	0.49	63.99	0.18	98.31	0.00	0.00	0.20	97.91	0.00	0.00	0.00	0.00
30-35	0.00	97.06	0.00	97.30	24.08	88.07	0.00	98.31	0.00	0.00	0.00	97.91	0.00	0.00	0.00	0.00
35-40	3.17	100.23	2.70	100.00	0.12	88.19	1.69	100.00	0.00	0.00	2.09	100.00	0.00	0.00	0.00	0.00
40-45	0.00	0.00	0.00	0.00	8.25	96.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45-100	0.00	0.00	0.00	0.00	3.58	100.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	LIBERIA		MALI		NIGER		NIGERIA		SENEGAL		SIERRA LEONE		TOGO		MOROCCO	
MFN F	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF
0	0.00	0.00	2.02	2.02	3.29	3.29	2.83	2.83	2.64	2.64	0.40	0.40	3.12	3.12	0.00	0.00
BLANK	6.02	6.02	0.00	2.02	0.00	3.29	0.00	2.83	0.00	2.64	0.65	1.06	0.00	3.12	0.00	0.00
0≤5	7.21	13.23	0.00	2.02	0.00	3.29	0.00	2.83	0.00	2.64	0.28	1.34	0.00	3.12	0.37	0.37
5≤10	44.36	57.59	31.07	33.09	22.84	26.12	29.82	32.65	26.90	29.53	43.34	44.68	25.16	28.27	6.73	6.73
10≤15	10.42	68.00	21.46	54.54	18.37	44.49	19.81	52.46	22.31	51.84	6.41	51.09	18.52	46.79	20.41	27.14
15-20	17.55	85.56	4.85	59.39	5.96	50.45	2.86	55.32	5.92	57.76	2.15	53.24	8.37	55.16	12.79	39.93
20-25	10.92	96.48	38.54	97.93	46.45	96.90	41.27	96.60	38.98	96.74	46.52	99.75	39.49	94.66	6.36	46.28
25-30	3.50	99.98	0.15	98.09	0.37	97.27	0.25	96.85	0.44	97.18	0.16	99.91	0.49	95.15	47.62	93.90
30-35	0.00	0.00	0.00	98.09	0.00	97.27	0.00	96.85	0.00	97.18	0.16	100.06	0.00	95.15	0.71	94.61
35-40	0.00	0.00	1.91	100.00	2.73	100.00	2.98	99.83	2.82	100.00	0.00	0.00	4.85	100.00	0.37	94.98
40-45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.98	98.96
45-100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	99.63

Source: Trains/wits latest year

Significant differences remain about the binding coverage. While some Members have bound less than 20 percent of their tariff lines, others have bound 100 percent of them like Morocco and Zimbabwe, Egypt has the highest of 2406 percent and Seychelles 80 percent. The share of tariff lines covered by bindings is 60 percent for EAC countries, 55 percent for SACU except for South Africa, which is at 45 percent. Therefore, a careful balancing act in designing their market opening in the AfCFTA circumstance may be required.

Table 9: SADC tariff band and the level of ambition-90 percent tariff lines

		SADC	COUNTRIES													
	Angola		Botswana		CONGO DRC		Lesotho		Mozambique		Namibia		South Africa			
MFN R	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF		
0	0.25	0.25	50.33	50.33	0.15	0.15	51.05	51.05	2.72	2.72	53.03	53.03	46.10	46.10		
BLANK	0.00	0.25	1.46	51.79	0.03	0.18	2.43	53.48	0.42	3.14	1.30	54.33	1.86	47.96		
0≤5	44.85	45.09	2.06	53.85	0.00	0.18	2.00	55.48	13.48	16.62	1.91	56.24	2.15	50.11		
5≤10	0.86	45.95	8.29	62.14	32.95	33.12	8.11	63.60	47.54	64.17	7.56	63.80	10.12	60.23		
10≤15	28.18	74.13	8.42	70.56	35.82	68.94	9.03	72.62	1.72	65.89	8.07	71.88	9.01	69.24		
15-20	0.27	74.40	7.03	77.59	2.00	70.95	6.89	79.51	0.04	65.93	6.47	78.35	6.65	75.89		
20-25	9.81	84.21	12.06	89.65	29.05	100.00	10.92	90.43	34.07	100.00	11.19	89.54	11.06	86.95		
25-30	0.45	84.65	1.58	91.23	0.00	0.00	1.38	91.81	0.00	0.00	1.45	91.00	1.30	88.24		
30-35	7.19	91.84	3.26	94.49	0.00	0.00	3.00	94.81	0.00	0.00	3.33	94.33	3.75	91.99		
35-40	0.04	91.88	0.25	94.74	0.00	0.00	0.26	95.07	0.00	0.00	0.24	94.57	0.38	92.37		
40-45	0.05	91.93	1.71	96.45	0.00	0.00	1.85	96.93	0.00	0.00	1.63	96.20	1.96	94.33		
45-50	0.00	91.93	3.53	99.98	0.00	0.00	3.05	99.98	0.00	0.00	3.78	99.98	5.67	100.00		
50-55	8.07	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	Tanzania		Madagascar		Mauritius		Malawi		Swaziland		Seychelles		Zambia		Zimbabwe	
MFN R	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF
0	28.99	28.99	6.22	6.22	84.87	84.87	27.36	27.36	53.00	53.00	87.98	87.98	26.17	26.17	8.75	8.75
BLANK	0.42	29.40	0.00	6.22	3.37	88.24	0.00	27.36	2.06	55.06	0.36	88.34	0.00	26.17	8.83	17.58
0≤5	0.00	29.40	0.62	6.83	0.72	88.96	0.40	27.76	2.00	57.06	0.10	88.44	0.00	26.17	0.29	17.88
5≤10	1.34	30.74	22.82	29.65	2.52	91.48	2.04	29.80	7.71	64.77	1.71	90.15	10.89	37.05	34.96	52.83
10≤15	22.28	53.02	32.59	62.24	1.32	92.79	26.96	56.76	8.63	73.40	2.32	92.47	2.11	39.17	15.26	68.10
15-20	2.08	55.09	1.55	63.79	5.96	98.75	2.14	58.90	6.26	79.66	2.04	94.51	24.84	64.01	8.37	76.46
20-25	0.11	55.20	36.21	100.00	0.07	98.82	0.23	59.13	11.19	90.84	0.23	94.73	0.79	64.80	6.29	82.75
25-30	43.65	98.85	0.00	0.00	0.00	98.82	40.87	100.00	1.40	92.24	4.91	99.65	35.20	100.00	2.86	85.61
30-35	0.00	98.85	0.00	0.00	1.18	100.00	0.00	0.00	2.89	95.13	0.03	99.68	0.00	0.00	0.84	86.45
35-40	0.51	99.36	0.00	0.00	0.00	0.00	0.00	0.00	0.25	95.38	0.03	99.70	0.00	0.00	12.43	98.88
40-45	0.00	99.36	0.00	0.00	0.00	0.00	0.00	0.00	1.73	97.11	0.00	99.70	0.00	0.00	0.61	99.49
45-50	0.00	99.36	0.00	0.00	0.00	0.00	0.00	0.00	2.95	100.05	0.66	100.36	0.00	0.00	0.48	99.97
50-55	0.64	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: Trains/wits latest year

Table 7. Probable Tariff bands for AfCFTA negotiations.

	TARIFF BANDS C	OF ACHIEVING 90%		REGIONAL COVERAGE		
	COMESA	SADC	ECOWAS	ECCAS	UMA	TOTAL
0≤5						
5≤10	1	2	0	0	0	3
10≤15	0	0	0	0	0	0
15-20	1	0	0	0	0	1
20-25	5	6	14	3	1	29
25-30	8	5	1	2	1	17
30-35	0	2	0	4	2	8
35-40	1	0	0	0	0	1
40-45	2	0	1	0	0	3
45-50						
COUN	18	15	16	9	4	
		*DATA ON LIBYA NOT AVAILABLE				
		MAJORITY COUNTRIES FALL ON TARIFF BAND 20-25.				

Source: Trains/wits latest year

The situation in COMESA is more varied. The level of the ceiling is between 25 and-30 percent, whereby Djibouti is at 26 percent, Sudan 40 percent, Ethiopia 35 percent Seychelles 20 percent and Mauritius 10 percent. In ECOWAS however, the scope of bindings tends to be more limited at 25 percent except for Cape Verde and Morocco which are at 45 and 30 percent respectively. The situation is also diverse in respect of SADC, where some of them have bindings on 25, 30 and 35 percent of their tariff lines, whereas Zimbabwe has a ceiling of 40 percent.

Besides, each country must meet the threshold target for ambition, meaning the higher Applied rates will have to be reduced to zero. If 90 percent of tariff lines are to be covered under AfCFTA, all ECOWAS countries except Cape Verde and Morocco would need to cut into their tariff band of 20-25 percent while Cape Verde will cut into 40-45 and Morocco at 25-30 percent. The majority of COMESA countries as well will have to cut into their tariff bands of 20-25 and 25-30 percent. Zimbabwe and South Africa will cut to 30-35, while Seychelles at will does at 5-10 percent.

Table 10: C0MESA Countries, tariff band and the level of ambition-90 percent tariff line

			CFTA	TARIFF BANDS		BY MFN RATES														
	COMES	COUNTRIES																		
	Burundi		Comoros		Djibouti		Egypt,		Eritrea		Ethiopia()		Kenya		Libya		Madagascar			
MFN F	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF		
0	23.56	23.56	4.71	4.71	0.00	0.00	11.37	11.37	0.00	0.00	2.87	2.87	34.57	34.57	100.00	100.00	6.22	6.22		
BLANK	0.27	23.82	0.00	4.71	0.00	0.00	0.15	11.51	0.00	0.00	0.20	3.07	0.34	34.91	0.00	100.00	0.00	6.22		
0≤5	0.00	23.82	0.00	4.71	10.93	10.93	18.82	30.33	26.87	26.87	0.99	4.06	0.00	34.91	0.00	100.00	0.62	6.83		
5≤10	0.94	24.76	23.34	28.05	9.02	19.95	26.79	57.12	7.38	34.25	14.46	18.51	0.86	35.77	0.00	100.00	22.82	29.65		
10≤15	21.92	46.68	0.64	28.69	16.94	36.89	14.61	71.73	46.00	80.25	12.94	31.45	21.57	57.35	0.00	100.00	32.59	62.24		
15-20	1.88	48.57	0.00	28.69	2.60	39.48	3.03	74.76	1.03	81.29	3.53	34.98	1.51	58.86	0.00	100.00	1.55	63.79		
20-25	0.00	48.57	71.31	100.00	1.09	40.58	5.76	80.52	0.00	81.29	25.91	60.89	0.06	58.92	0.00	100.00	36.21	100.00		
25-30	49.17	97.73	0.00	0.00	59.15	99.73	0.00	80.52	19.38	100.67	1.72	62.61	40.08	99.00	0.00	100.00	0.00	0.00		
30-35	0.00	97.73	0.00	0.00	0.00	99.73	3.99	84.50	0.00	100.67	22.90	85.51	0.00	99.00	0.00	0.00	0.00	0.00		
35-40	0.96	98.70	0.00	0.00	0.00	0.00	2.44	86.94	0.00	0.00	14.49	100.00	0.52	99.52	0.00	0.00	0.00	0.00		
40-45	0.00	98.70	0.00	0.00	0.00	0.00	12.25	99.19	0.00	0.00	0.00	0.00	0.00	99.52	0.00	0.00	0.00	0.00		
50-60	1.30	100.00	0.00	0.00	0.00	0.00	0.81	100.00	0.00	0.00	0.00	0.00	0.49	100.01	0.00	0.00	0.00	0.00		
	Mauritius		Malawi		Rwanda		Sudan		Swaziland		Seychelles		Uganda		Congo, DRC		Zambia		Zimbabwe	
MFN F	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF
0	84.87	84.87	27.36	27.36	21.58	21.58	8.12	8.12	53.00	53.00	87.98	87.98	26.45	26.45	0.15	0.15	26.17	26.17	8.75	8.75
BLANK	3.37	88.24	0.00	27.36	0.53	22.11	0.30	8.42	2.06	55.06	0.36	88.34	0.45	26.90	0.03	0.18	0.00	26.17	8.83	17.58
0≤5	0.72	88.96	0.40	27.76	0.00	22.11	6.04	14.46	2.00	57.06	0.10	88.44	0.00	26.90	0.00	0.18	0.00	26.17	0.29	17.88
5≤10	2.52	91.48	2.04	29.80	0.70	22.82	1.39	15.84	7.71	64.77	1.71	90.15	1.62	28.52	32.95	33.12	10.89	37.05	34.96	52.83
10≤15	1.32	92.79	26.96	56.76	20.28	43.09	34.46	50.30	8.63	73.40	2.32	92.47	21.83	50.34	35.82	68.94	2.11	39.17	15.26	68.10
15-20	5.96	98.75	2.14	58.90	2.42	45.51	1.49	51.78	6.26	79.66	2.04	94.51	2.08	52.42	2.00	70.95	24.84	64.01	8.37	76.46
20-25	0.07	98.82	0.23	59.13	0.15	45.66	1.88	53.66	11.19	90.84	0.23	94.73	0.04	52.46	29.05	100.00	0.79	64.80	6.29	82.75
25-30	0.00	98.82	40.87	100.00	52.35	98.01	17.43	71.09	1.40	92.24	4.91	99.65	46.00	98.46	0.00	0.00	35.20	100.00	2.86	85.61
30-35	1.18	100.00	0.00	0.00	0.05	98.06	0.40	71.49	2.89	95.13	0.03	99.68	0.22	98.68	0.00	0.00	0.00	0.00	0.84	86.45
35-40	0.00	0.00	0.00	0.00	0.73	98.79	0.00	71.49	0.25	95.38	0.03	99.70	0.52	99.20	0.00	0.00	0.00	0.00	12.43	98.88
40-45	0.00	0.00	0.00	0.00	0.58	99.37	28.51	100.00	1.73	97.11	0.00	99.70	0.00	99.20	0.00	0.00	0.00	0.00	0.61	99.49
45-50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50-60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95	100.05	0.66	100.36	0.80	100.00	0.00	0.00	0.00	0.00	0.48	99.97

Source: Trains/wits latest year

Table 11: ECCAS and UMA Countries, tariff band and the level of ambition-90 %

					ECCAS COUNTRIES													
	CONGO		CHAD		CENTRAL AFRICA R		GABON		CONGO DRC		BURUNDI		RWANDA		GUINEA		CAMEROON	
MFN F	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	
0	2.28	2.28	1.31	1.31	1.91	1.91	3.94	3.94	0.15	0.15	23.56	23.56	21.58	21.58	4.80	4.80	1.62	1.62
BLANK	0.00	2.28	0.84	2.15	0.00	1.91	0.00	3.94	0.02	0.17	0.27	23.82	0.53	22.11	0.32	5.12	0.00	1.62
0≤5	0.06	2.34	0.00	2.15	0.00	1.91	0.00	3.94	0.00	0.17	0.00	23.82	0.00	22.11	0.28	5.40	0.09	1.71
5≤10	12.91	15.25	4.01	6.16	5.72	7.62	2.18	6.13	32.95	33.12	0.94	24.76	0.70	22.82	27.57	32.97	3.05	4.76
10≤15	27.23	42.47	35.45	41.60	31.82	39.44	33.89	40.02	35.82	68.94	21.92	46.68	20.28	43.09	20.51	53.47	42.44	47.20
15-20	6.96	49.44	1.59	43.19	2.93	42.38	1.58	41.60	2.00	70.94	1.88	48.57	2.42	45.51	1.63	55.11	1.80	49.01
20-25	47.24	96.67	17.26	60.45	25.95	68.33	14.23	55.83	29.05	100.00	0.00	48.57	0.15	45.66	44.97	100.07	15.63	64.63
25-30	0.37	97.04	0.84	61.29	0.88	69.21	0.42	56.25	0.00	0.00	49.17	97.73	52.35	98.01	0.00	0.00	0.37	65.00
30-35	0.00	97.04	38.71	100.00	30.79	100.00	43.75	100.00	0.00	0.00	0.00	97.73	0.05	98.06	0.00	0.00	35.00	100.00
35-40	2.96	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	98.70	0.73	98.79	0	0.00	0.00	0.00
40-45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.70	0.58	99.37	0.00	0.00	0.00	0.00
50-60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	100.00	0.00	0.00	0.00	0.00	0.00	0.00
		UMA	COUNTRIES															
	ALGERIA		Libya		Mauritania		Morocco		Tunisia									
MFN F	%	CF	%	CF	%	CF	%	CF	%	CF								
0	0.45	0.45	100.00	100.00	0.00	0.00	0.00	0.00	17.30	17.30								
BLANK	0.00	0.45	0.00	100.00	0.00	0.00	0.00	0.00	0.00	17.30								
0≤5	0.05	0.50	0.00	100.00	0.00	0.00	0.37	0.37	0.89	18.19								
5≤10	19.99	20.49	0.00	100.00	7.69	7.69	6.73	6.73	1.22	19.42								
10≤15	0.82	21.31	0.00	100.00	0.00	7.69	20.41	27.14	19.15	38.57								
15-20	23.94	45.25	0.00	100.00	0.00	7.69	12.79	39.93	12.40	50.98								
20-25	2.47	47.72	0.00	100.00	92.31	100.00	6.36	46.28	1.72	52.70								
25-30	0.39	48.11	0.00	100.00	0.00	0.00	47.62	93.90	10.92	63.61								
30-35	51.71	99.82	0.00	100.00	0.00	0.00	0.71	94.61	26.96	90.57								
35-40	0.00	0.00	0.00	0.00	0.00	0.00	0.37	94.98	9.43	100.00								
40-45	0.00	0.00	0.00	0.00	0.00	0.00	3.98	98.96	0.00	0.00								
45-50	0.00	0.00	0.00	0.00	0.00	0.00	0.67	99.63	0.00	0.00								

Source: Trains/wits latest year

SENSITIVE LIST

For meaningful negotiation to succeed countries agree on what to liberalize and what to exclude. This then shall mean following the major three criteria identified for selecting sensitive products for both industrial and revenue, cultural or religious concerns.

(i) Those that minimize import surge- attract highest dutiable imports
(ii) Those that continued to be protected- highly protected products; and
(iii) Those that minimize tariff revenue losses-attract highest tariffs (10 per cent and 20 per cent of bilateral imports)

The commitment to reduce tariffs to 0 %, remove quantitative restrictions and other non-tariff barriers is up to the year 2030 for non-LDCs and 2033 for LDCs (10 and 13 years respectively). Following, the Continental Free Trade Agreement (AfCFTA) commencement in 2020, and envisaging a duty-free area by 2025 and 2030, the debates about / negative Lists which may be maintained by Member Countries but which is not there in the RECs is brought up in earnest because the whole issue is wrapped in the AfCFTA agreement without elaboration. That clarity would be intentional bearing in mind that the negative or sensitive list in a preferential or free trade agreement is to provide protection to sectors like infant industry, small-scale producers, agriculture among others. The AfCFTA has fixed the negative lists at 7% of the total tariff lines for sensitive products and not more than 3% for the Exclusion List of the total tariff lines for developing countries for a 10 year period. The same applies for 13 years period for LDCs before they are finally phased out to provide adjustment time to the domestic import-competing sector.

The elimination exercise may require using the concept of revealed comparative advantage to identify items on the sensitive list where the exporting country is competitive in the international market. Care should be taken lest countries will maintain two or three sensitive lists under AfCFTA; one for non- LDCs, and the others for LDCs, and another under bilateral FTAs. Pair-wise RCAs for one country and each of the exporting countries in AfCFTA can be used to identify items on one country's sensitive list that are vulnerable to competition from imports from AfCFTA member countries. Kathuria (1997) points out that competitiveness can be measured by the extent of successful export performance which in turn is measured by export propensity, export market shares or price-based measures like nominal protection coefficients, effective rates of protection and domestic resource costs.

The RCA can also be used by combining the RCAs for products of an exporting country with the corresponding RCAs of another country. Thus the RCA index is a ratio of the share of a given product in a country's exports relative to the product's share in world exports (Balassa, 1965). RCA is computed using the following formula:

$$RCAij = (Xij / Xi) / (Xwj / Xw)$$

Where Xij represents country i's export of commodity j, Xwj represents world exports of commodity j, Xi represents the total exports of country i, and Xw represents total world exports.

An RCA index value of greater than unity implies that the country is competitive in exporting a product. So, in the AfCFTA the RCA for each item on one country's sensitive list can be paired with the corresponding RCAs for the other countries.

The RCA concept however, has certain limitations like that the specification of the concept is usually in terms of pre-trade relative prices whereas the data used is generated by trade flows in post-trade equilibriums (Volrath, 1991). The other problem arises due to aggregation where the commodity becomes composite and describes an industry or a sector, unless we compute RCA at the six-digit level. It does not consider unit values of the exporting country in relation to other competitors.

ACCELERATION OF AfCFTA

The Phase-out periods for tariffs and quotas in sensitive sectors are usually kept to the minimum, and also the negotiators should consider the various levels of development among the countries. The liberalization schedule which shall offer progressive liberalization as agreed in Niamey can be tabulated as shown in Table 12.

Table 12. Timetable for accelerating AfCFTA for the 55 AU countries

YEAR	COMMITMENT INCLUSION LIST	SENSITIVE PRODUCTS	EXCLUSION LIST
2020	A minimum of 50% of the countries' total tariff lines must have tariffs of 0%, for developing countries and 40% for LDCs.		
2025	Each developing country would achieve a minimum of 90% of the Inclusion list in the 0 % tariff range.		
2030		7% of the total tariff lines for sensitive products fully liberalised	3% for the Exclusion List of the total tariff lines for developing countries

2030	All LDCs would achieve a minimum of 90% of the inclusion list in the zero-tariff range, same with the group of 6 countries achieving 85% fully liberalization.		
2033	All LDCs would achieve full liberalization of sensitive list together with the group of 6	7% of the total tariff lines for sensitive products fully liberalised	3% for the Exclusion List of the total tariff lines for developing countries
2045	The group of 6 countries achieving 90% fully liberalization		

For this to succeed, exceptional attention should also be focused on trade facilitation activities in the areas of customs and the elimination of technical barriers to trade. At customs points the simplification and harmonization of customs procedures and as well the development of product-specific mutual recognition arrangements in conformity assessment should be hastened to ensure that product-related standards and regulations do not become technical barriers to trade.

Conclusion

The danger of violent and rapid movement in the markets for primary commodities after 2020 needs some caution so that the necessary adjustments should not come too fast lest they bring serious distress to many small producers and to their communities. Therefore, as well the negotiators should provide a program of adjustment and a period within which the essential change can be made without undue hardship. Thus the general idea of an early harvest (hanging fruits) can be a quick liberalisation strategy on areas where fast progress is possible, to effect agreement expeditiously and to implement the results in 2020 and then extent to 90%. The problem of doing the easy things first does not necessarily help with solving the difficult ones and sometime the timetable for the negotiations may make an early harvest quite impractical

The AfCFTA negotiators must remain aware in all cases that the agreement drafted and especially on rules of origin, should deliver quick and easier trading environment such that the business community do not struggle with its complexities which may simply make them ignore the agreement as the trade makers, and an opportunity to enhance growth and integration will then have been lost. For one they have business relationships at stake with suppliers and buyers in other economies, which will be affected by the agreements while others will be enjoying as well from improved market access in the partner economy, and they will be more competitive in LDCs because of a reduction in some of their input costs.

We still need to approach regionalism with caution, but we believe it is time for a guarded optimism. Regionalism appears to be a useful tool to dismantle trade barriers, but must be employed with care especially this time when multilateral efforts are headed to fail. Forming AfCFTA would make free trade easier to achieve by inducing otherwise uncooperative countries to cooperate.

The discussion over the AfCFTA so far underscores the fears of potentially important external forces shaping the debate about impact of AfCFTA on the prospects of multilateral liberalization. While this makes for a political and intellectually engaging debate, it also reflects an important difficulty direction Africa has taken in the world geopolitics.

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Economic, Social and Political Openness on Unemployment in ASEAN

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Abstract
The level of globalization of several ASEAN countries has increased for decades. This increasing level of globalization shows that these countries are increasingly open in terms of economic, social and political aspects. It is widely debated the impact of this openness on developing countries. This paper aims to see the impact of economic, social and political openness on unemployment in several ASEAN countries. This study uses panel data from six countries in ASEAN from 2010-2015 with the KOF index. The study found that the increase of economic and social globalization has an impact on reducing unemployment in ASEAN, while the increase of political globalization could increase unemployment in ASEAN.

Keywords: Unemployment, Panel Data, Economic Globalization, Social Globalization, Political Globalization

1. Introduction

Globalization, in a broad sense, is an integration of the economy and social through cross-country where there is a flow of information, ideas, technology, goods, services, capital, finance and society. Cross-country integration or connectivity aspects of globalization can be grouped in several dimensions such as social, economic, cultural and political. In the process of globalization there are different opinions between the impacts of globalization. Some argue that globalization is an engine for growth, technical progress, access to international resources and optimal benefits are to increase productivity, expand employment, increase choice of commodities, reduce costs, improve living standards and reduce poverty by modernization (Dhas and Helen, 2008). The argument about the positive impact of globalization is supported by several studies, one of which is Dreher (2006) who found that globalization plays an important role in increasing economic growth in the world. Dreher (2006) found that globalization has a positive impact on the economic growth of countries in the world. Sinn (2004) stated that globalization means gains from trade but not for everyone.

But there are also arguments about globalization, which are often blamed as the cause of increasing gaps between countries, exploiting resources and environmental damage and also reducing state sovereignty. It is a challenge for each country in trying to maximize the benefits of globalization and minimize the negative effects of globalization.

One of the economic integration efforts in developing countries can be seen from the formation of the Association of Southeast Asian Nations (ASEAN), which includes Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand and Vietnam. Although initially ASEAN was a form of political association, since 1977, ASEAN has moved towards a common market. Then when interdependence between countries in the East Asian region in the era of globalization has further strengthened regional cooperation, the economic crisis in 1997 made clear the urgent need for stronger economic integration between Northeast Asia and Southeast Asia. Since its founding in 1997, the ASEAN + 3 process whereby ASEAN has collaborated with Japan, China and South Korea to deepen cooperation between the two sub-regions and take concrete steps to achieve the goal of closer and stronger integration in overcoming economic challenges.

The level of globalization experienced by countries in the ASEAN has increased from year to year. This level of globalization can be seen either from the globalization index KOF or *Konjunkturforschungsstelle*. An index value of close to 100 indicates the level of globalization of a country getting higher. Table 1 shows the development of the level of globalization, economic growth and unemployment in several ASEAN countries in 2010 and 2015.

Table 1 shows that the level of globalization of several ASEAN member countries is relatively high, which is above the number 50 in 2015, and on average these countries experienced an increase in the level of globalization in 2015 from 2010. An increase in the KOF index indicates the level of globalization in countries the higher. In 2010 the level of globalization of Cambodia, Indonesia, Malaysia, Thailand, the Philippines, Vietnam and Singapore were at 52.04; 60.36; 77.69; 65.77; 62.58; 53.79 and 83.15 which increased to 56.67; 62.03; 79.27; 68.14; 64.07; 59.70 and 80.01.

Table 1. The development of globalization, economic and unemployment rates in several ASEAN countries.

Country	Year	Overall KOF Indez	GDP Growth (%)	Unemployment Growth (%)
Cambodia	2010	52.04	5.96	0.77
	2015	56.67	7.03	0.39
Indonesia	2010	60.36	6.22	5.61
	2015	62.03	4.87	4.51
Malaysia	2010	77.69	5.33	3.25
	2015	79.27	5.09	3.09
Thailand	2010	65.77	7.51	0.62
	2015	68.14	3.13	0.59
Fillipina	2010	62.58	7.63	3.60
	2015	64.07	6.06	3.52
Vietnam	2010	53.79	6.42	1.13
	2015	59.70	6.67	1.85
Singapore	2010	83.15	14.52	2.06
	2015	80.01	2.89	1.69

Source: World Development Indicator (2019), ETH Zurich (2019)

Then if the growth rate of globalization is associated with the level of productivity of international trade and employment due to the increasing flow of openness to goods, services and labor, it turns out that an increase in the level of globalization is not always followed by an ever-increasing rate of economic growth and but unemployment in countries the country continues to decline. As for economic growth, one of them can be seen from the growth of gross domestic product (GDP) of a country. GDP is often considered one of the best measures of economic performance. Meanwhile, to see the absorption of labor, it can be seen from the total unemployment of a country. Table 1 shows that each ASEAN member country experienced changes in terms of the level of globalization, economic growth and different unemployment rates. Based on Table 1, of the 7 ASEAN member countries only 1 country, which is Cambodia, experienced an increase in economic growth in 2015 compared to 2010. Indonesia, Malaysia, Thailand, the Philippines, Vietnam and Singapore experienced an economic slowdown.

Indonesia, Thailand and Vietnam experienced an increase in the level of globalization but at the same time economic growth in the country fell. Indonesia experienced GDP growth of 6.22% in 2010 but declined to 5.02%

in 2014. Thailand experienced GDP growth of 7.51% in 2010 but declined to only 0.82% in 2014. Vietnam experienced GDP growth in 2010 of 6.42% but in 2014 it was only 5.98%. While Malaysia, Philippines and Singapore in addition to experiencing a decrease in the level of globalization also experienced a decline in economic growth. This raises the question of whether globalization can really have an impact on increasing economic growth or even cause an economic slowdown due to economic uncertainty as a negative impact of globalization. Ying *et al.* (2014) found that economic globalization had a positive impact on the economic growth of ASEAN countries. But in fact, the increasing level of globalization carried out by ASEAN countries is not always followed by high economic growth. The relationship between economic growth and unemployment is described in Okun's Law which states the negative relationship between unemployment and real GDP. Because of this it can be seen from Table 1 that as globalization increases, economic growth may not necessarily increase, in accordance with Okun's Law that if there is a decrease in unemployment associated with additional real GDP, where in the case of several ASEAN countries in Table 1, the level unemployment has declined not followed by high economic growth.

Daly *et al*. (2017) found that globalization would benefit the country by reducing the unemployment rate only in the short term but it was feared that it would increase the unemployment rate in the long run. Daly *et al*. (2017) also found that the impact of globalization on employment in India tends to be a warning signal. Unorganized labor will be increasingly open because of globalization, which will result in an imbalance in the labor market and reduce wage rates. Majumder (2009) stated that while globalization has resulted in high growth of global income, globalization seems to be depressing the labor market, unemployment is rising especially in developing regions. These facts raise the question whether greater economic openness in the era of globalization really benefits ASEAN member countries. Therefore this study wants to see the relationship between the level of globalization with economic growth and employment, especially in ASEAN member countries. Based on the description of the background, the formulation of the problem in this study can be described as follows: 1. How is the development of the level of globalization, economic growth and employment in ASEAN? 2. How does the level of globalization affect employment in ASEAN?

2. Method

The type of data used in this study is secondary data. The secondary data is in the form of panel data for the period 2010-2015 in six (6) ASEAN member countries such as Indonesia, Malaysia, the Philippines, Singapore, Vietnam and Thailand. The use of research data in 2010-2015 and 6 ASEAN member countries considers the renewal and consistency in the availability of variable data in research. The data used in this research obtained from several sources such as the World Bank and ETH Zurich. Other data will be obtained from various sources such as books, journals and articles in the form of print and electronic media. Data processing will be performed using Microsoft Office Excel 2013 and Eviews9 software.

The development of the level of globalization is seen from the value of the KOF globalization index. The development of economic growth can be seen from the GDP growth of a country. Employment absorption can be seen from the number of workers or unemployed in ASEAN countries. This study uses panel data analysis. In the panel data estimation, there are three techniques for estimating model parameters with panel data, namely Pooled Least Square, the Fixed Effect Method and the Random Effect Method. Baltagi (2005) suggests the advantages of panel data include estimations made that can explicitly include elements of individual heterogeneity, provide more informative data, reduce linearity between variables, increase the degree of freedom and be more efficient and can better identify and measure the impact of things that cannot be observed in pure cross-section data or pure time series. The estimated models in this study are as follows:

$$JOB_{it} = \alpha_0 + \alpha_1 KOFEC_{it} + \alpha_2 KOFSOC_{it} + \alpha_3 KOFPOL_{it} + \alpha_{it} \quad (1)$$

Where JOB_{it} is for Unemployment Growth (percentage), KOFECit, reflects the degree of economic globalization (index), KOFSOC portrays the degree of social globalization (index) and KOFPOL shows political globalization's degree. One of the trade theory, the Heckscher-Ohlin Theory states that a country will import intensive commodities in abundant and inexpensive production factors and intensive import commodities in relatively scarce

and expensive production factors (Salvatore, 2014). This shows that exporting goods with abundant production factors is expected to absorb labor/input from these relatively inexpensive factors of production. If a country has a comparative advantage in terms of labor, then the country will tend to specialize in exporting goods that use labor-intensive, which will ultimately increase expansion in terms of labor and output. Majumder (2008) also states liberalization in terms of investment, both foreign direct investment and domestic investment are expected to create jobs directly or indirectly from the service sector.

Globalization can be interpreted as increasing economic integration throughout the world, especially trade, which is facilitated by the development of communication and transportation. Globalization is important because it can increase efficiency and cannot be avoided because it is needed for international competition. But globalization is also often blamed as one of the causes of various problems in the world. Current international economic challenges include increasing trade protection policies in developed countries, excessive fluctuations and imbalances in currency exchange rates, increased international competition from China and fear of unemployment in the United States and other developed countries, high structural unemployment rates and growth slow economy in Japan, financial crisis in emerging market economies, high poverty rates in developing countries. Globalization is very dependent on the openness and freedom of exchange of goods, services, resources, technology, money and ideas. The challenge now is how to make globalization more inclusive and include more people by spreading its benefits more equitably throughout the world. (Salvatore 2014; Dhas and Helen, 2008)

There are several studies that analyzed the impact of globalization on the economy, but most use the export and import indicators as indicators of integration or openness. The novelty of this research is this research wants to see the impact of each economic globalization, social globalization and political globalization. Every year until the release of the latest data, the KOF index continues to experience changes and improvements. Also, different from previous studies, the KOF variable used in this study was reviewed and thoroughly revised. The clear difference is that in this globalization index, it can be seen from the de facto and de jure sides, where the de facto factor includes cross-border flow activities while de jure globalization takes into account the activities and policies that act as the main drivers of these flows and activities.

The difference between de facto and de jure globalization is not only seen from the overall index value but also from each part. The overall index is calculated from the average de facto and de jure values. This research uses overall index. Another novelty is the difference from trade and financial globalization in the sub-domain of economic globalization. Cultural globalization also has more outer terms. So as a whole, the globalization index consists of a number of very broad indicators that are deemed appropriate enough to describe globalization with 42 different variables that were previously only 23 different variables.

Research refers to Dreher (2006), who found that globalization has a positive impact on economic growth. Dreher (2006) used the KOF index as an indicator of globalization. The KOF index is a measure of globalization issued by ETH Zurich, where this index is calculated through the weighting of important indicators as a measurement of economic openness that is not limited to trade volume. The KOF index is available for 185 countries from 1970 to 2015. Economic Globalisation consists of trade globalization and financial globalization. Trade Globalisation obtained from data in trade in goods, trade in services, trade partner diversification for de facto segment and trade regulations, trade taxes and tariffs from de jure segment. Financial Globalization from de facto segment consists of Foreign direct investment Portfolio investment, International debt, International reserves and International income payments, and for de jure segment consists of Investment restrictions, Capital account openness 1, Capital account openness 2. Social Globalization obtained from Interpersonal Globalisation, Informational Globalisation and Cultural Globalisation. Interpersonal Globalisation from de facto segment consists of International voice traffic, Transfers, International tourism, Migration and for de jure segment conducted from Telephone subscriptions, Freedom to visit and International airports. Informational Globalization consists of Patent applications, International students, High technology exports for de facto segment and Television, Internet User, Press freedom, Internet Bandwidth for de jure segment. Cultural Globalization consists of Trade in cultural goods, Trademark applications, Trade-in personal services, the number of McDonald's restaurants and IKEA stores from the de facto segment, and Gender parity, Expenditure on education, Civil freedom from de jure segment. Political globalization consists of the number of Embassies, UN peacekeeping missions and International NGOs from de

facto segment and International organizations, International treaties and Number of partners in investment treaties from de jure segment.

Table 2. Economic, Social and Political Globalization's Structure and Variable

Structure	Variable
Economic Globalization	
1. Trade Globalization	
de facto	*de jure*
a. Trade in goods	a. Trade regulations
b. Trade in services	b. Trade taxes
c. Trade partner diversification	c. Tariffs
2. Financial Globalization	
de facto	*de jure*
a. Foreign direct investment	a. Investment restrictions
b. Portfolio investment	b. Capital account openness 1
c. International debt	c. Capital account openness 2
d. International reserves	
e. International income payments	
Social Globalization	
1. Interpersonal Globalization	
de facto	*de jure*
a. International voice traffic	a. Telephone subscriptions
b. Transfers	b. Freedom to visit
c. International tourism	c. International airports
d. Migration	
2. Informational Globalization	
de facto	*de jure*
a. Patent applications	a. Television
b. International students	b. Internet User
c. High technology exports	c. Press freedom
	d. Internet Bandiwth
3. Cultural Globalization	
a. Trade in cultural goods	a. Gender parity
b. Trademark applications	b. Expenditures on education
c. Trade-in personal services	c. Civil freedom
d. McDonald's restaurant IKEA stores	
Political Globalization	
de facto	*de jure*
a. Embassies	a. International organizations
b. UN peacekeeping missions	b. International treaties
c. International NGOs	c. Number of partners in investment treaties

Source: ETH Zurich (2019)

3. Results and Discussion

The development of globalization from 1997 to 2015 can be seen in the following Figure 1.

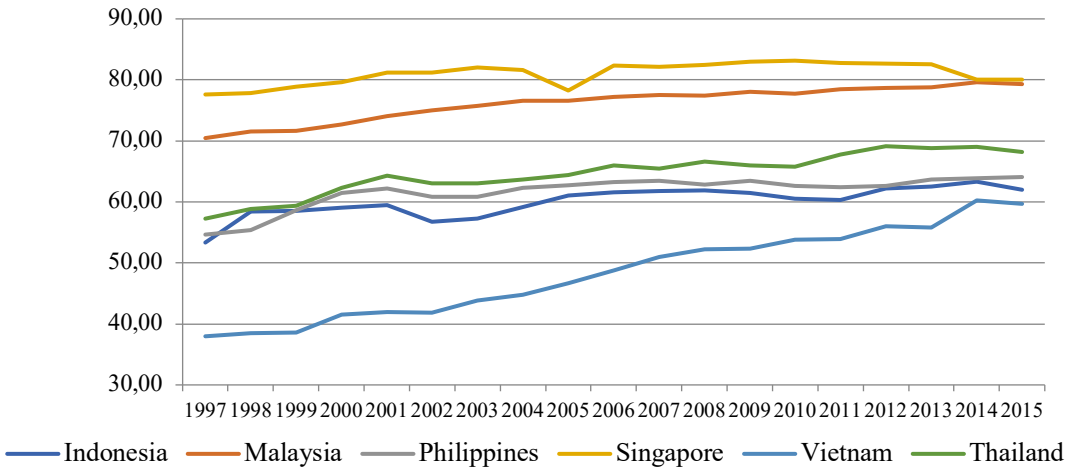

Figure 1. The development of KOF globalization level of ASEAN countries in 1997-2015
Source: ETH Zurich 2019, compiled

Figure 1 shows the globalization rates of several ASEAN countries on average increased from 1997-2015. In 2015, Singapore had the highest KOF globalization rate of 80.01 followed by Malaysia of 78.9. Indonesia, the Philippines and Thailand have a globalization index of 62.04, 64.08 and 68.15 while Vietnam has the lowest index compared to other countries at 59.70. Then from the table below can be seen the position or ranking of globalization of several ASEAN members in the world from 198 countries.

Tabel 3 ASEAN Country Globalization rank in 2015

Rank	Country	Economic Globalisation, overall index
1	Singapore	92.47
41	Malaysia	70.58
67	Cambodia	62.69
77	Thailand	59.89
132	Indonesia	44.23
123	Vietnam	48.09
121	Philippines	48.20
Rank	**Country**	**Social Globalisation, overall index**
27	Malaysia	80.76
28	Singapore	80.63
127	Vietnam	56.11
133	Indonesia	52.91
119	Philippines	59.27
117	Thailand	60.59
Rank	**Country**	**Political Globalization, overall Index**
33	Indonesia	88.97
40	Malaysia	86.50
104	Singapore	66.98
135	Myanmar	56.64
46	Thailand	83.96
73	Vietnam	74.58
45	Philippines	84.76

Source: ETH Zurich 2019, compiled

According to 2015 data, Singapore ranks first for economic globalization of 92.47, Malaysia ranks 41st with an index value of 70.58, Cambodia ranks 67th with an index value of 62.69, Thailand occupies the 77th position with an index value of 59.89, Indonesia ranks 132th with an index value of 44.23, Vietnam ranks 123th with a value of

the index was 48.09 and the Philippines ranked 41st 121 with an index value of 48.20. For social globalization, Malaysia ranked 27th with an index value of 80.76, Singapore ranked 28th with an index value of 80.63, Vietnam ranked 127th with an index value of 56.11, Indonesia took 133th place with an index value of 52.91, the Philippines ranked 1st 119 with an index value of 59.27, Thailand ranks 117th with an index value of 60.59. According to Zurich (2018), the level of globalization in the countries of the world has experienced a slight decline in 2015. The rate of globalization in all countries in the world has increased rapidly between 1990 and 2007 and only increased slightly a year after since the Great Recession. In 2015 the rate of globalization had fallen back since it was first in 1975. This could be due to a decline in economic globalization with stagnant social globalization and a slight increase in political globalization.

3.1 Panel Data Analysis

The next step is to test the model whether it meets econometric criteria, which is free from multicollinearity, autocorrelation and heteroscedasticity problems and also tests for normality. The results of the multicollinearity test are that there are no correlations that are higher than the R2 value so that it can be concluded that there is no multicollinearity problem. The Durbin-Watson value in the model is between dU (1.2) <DW (1.83) <4-dU (2.7), which means that this model is free from autocorrelation problems. This model has used GLS Weights (cross-section weights), where this weighting can overcome the problem of autocorrelation and heteroscedasticity in the model. The Jarque-Bera value shows an insignificant probability, which means that this model is normally distributed.

The value of R-Squared in the model is 0.992290, which means that the unemployment variable model can be explained by 99.22% while the rest is explained by other variables out of model. From the results table it can be seen that economic globalization has a significant negative effect on unemployment by 1.2, which means an increase in economic globalization by 1% will reduce unemployment by 1.2% or ceteris paribus. This is consistent with the results found in study of Majumder (2009) where overall and economic globalization was found to have a negative and significant effect on unemployment growth and unemployment elasticity in Non-EU Europe and South East Asia and the Pacific. The social globalization variable also has a significant negative effect on unemployment with a coefficient of -0.9, which means an increase in social globalization by 1% will reduce unemployment by 0.9% or ceteris paribus. Siddiga *et al.* (2018) also found that economic globalization has significant effect on reduction of unemployment.

However, political globalization has a significant positive effect of 1.2, which means an increase in political globalization by 1% will increase unemployment by 1.2% or ceteris paribus. This result opposes Siddiga *et al.* (2018) findings that showed political globalization has significant impact on unemployment reduction. Majumber (2009) suggested that the effort of restructuring economy should be initiated to absorb the potential labor force. Gugushvili (2006) also suggest if Azerbaijan wants to get full benefits of globalization, whore citizen and society should intensify pressure for elite' transformations. Androniceanu (2017) also found that globalisation and technological progress had increasing effect on unemployment in Europe.

Table 4 Panel data results

Variable	Model					
	Common		Fixed		Random	
	Coefficient	Probability	Coefficient	Probability	Coefficient	Probability
The level of economic globalization	-2.066046	0.0569	-1.207831	0.0079*	-0.913746	0.2395
The level of social globalization	1.643955	0.2232	-0.907677	0.0021*	-0.795138	0.0403*
The level of political globalization	0.539921	0.2816	1.229371	0.0141*	1.701313	0.0005*
R-squared	0.184307		0.992290		0.419185	

Adjusted R-squared	0.134871	0.990006	0.364734
Prob (F-statistic)		0.000000	0.000521
Durbin Watson stat (weighted)		1.830439	1.831366
Durbin Watson stat (unweighted)	0.044946	1.666900	0.026265
Sum squared resid (weighted)		0.224271	0.256108
Sum squared resid (unweighted)	0.67450	0.245259	17.85747

Source: Author's computation

Note : * denoted significance at 5% level respectively.

4. Conclusion

The economic and social globalization variables are found to have a significant and negative effect on unemployment, which means that if economic and social globalization increases, unemployment growth will decrease. But political globalization was found to have a positive and significant effect on unemployment growth. The economy's restructuring should be done to absorb the labour force potential, so they will also get the benefit of globalization and contribute towards the success of globalization.

This shows that there are things that need to be improved from the political side, whether international agreements agreed between countries will produce policies that increase domestic unemployment or absorb labour from other countries. The next research is expected to be able to assess the impact of this globalization level using the respective indicators of globalization in de jure and de facto so that it is expected to find which variables actually have an impact on increasing unemployment, and can use other variables that are thought to influence the unemployment rate apart from globalization.

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Factor Variation on Job Satisfaction of Banking Employees: A Comparative Study on Public and Private Banks

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Abstract
In the competitive banking industry, the success of the organization totally depends on the workforce. The level of job satisfaction of the employee implies the image of the organization and it leads to the accomplishment of the goals of the organization and may vary with the banking sector; public versus private. The main purpose of this study is to compare the job satisfaction level of bankers and analyze significant influencing factors on job satisfaction in accordance with the sector. The data were collected through a questionnaire, from 150 employees in Badulla district, Sri Lanka. The chi-squared test and ordinal logistic regression model was used to identify the significant determinants. According to the regression analysis, there were positive significant effects from empowerment, job security, recognition and appreciation, relationship with the staff and work-life balance on public bank employee's job satisfaction. The most significant causative factor was the empowerment of employee and when there was an advance in empowerment; a person is 4.116 times more likely to be satisfied. However, in the private sector other than the work-life balance, all other significant causes were varied. The ability to utilize skills, the possibility of growth, salary, work-life balance and working environment were positively affected on job satisfaction. In the private sector, dominant significant impact factor was work-life balance and employee was 6.619 times more likely to be in satisfying level when there is an increase in the work-life balance. It implies that the impact factors on job satisfaction in the banking industry vary with the sector.

Keywords: Empowerment, Job Satisfaction, Odds Ratio, Ordinal Logistic Regression

1. Introduction

1.1. Background

Job satisfaction represents the difference between employee's expectations and the reality, employees gain from the job. It is all about the feelings of the worker about the job. Socio-demographic factors, administration policies, the environment of the organization, the nature and the extent of supervision, job security, working conditions,

status, salary level, communication and the relationship with the subordinate staff are some influencing factors on job satisfaction.

In any organization, employees can be defined as internal customers. If employees are satisfied with their job, then external customers are retained and satisfied. Then, any organization will be able to improve the performance and the profitability of the working place with the full commitment of the employee. Therefore, human resources are one of the valuable assets of the organization. This realism is common for banking organizations also.

Banks accept deposits from the surplus unit and lending money to the deficit unit (Khan & Parveen, 2014). Banks play a major role in the financial system in the country and affect growth and the performance of the economy of the entire country. So, for the success of banking, well-trained, satisfied and knowledgeable staff should be in the organization. Therefore, it is very important to assess the worker's job satisfaction which symbolizes the image of the banking organization and the relationship between management and employees. Many of the banking organizations have been identified as the impact of satisfying human resources in achieving the success of the organization. Resulting, they are organizing annual events to improve the teamwork, training sessions for enhancing worker's job-related knowledge, appreciation award ceremonies and stress releasing events, etc. (Anuja & Arulrajah, 2013).

1.1.1. Banking Sector in Sri Lanka

Sri Lanka has a well-differentiated banking system that comprises the Central Bank of Sri Lanka, four state-owned banks, eleven private domestic commercial banks, thirteen foreign banks, two housing banks and three licensed specialized banks (Export.gov, 2019). The central bank of Sri Lanka is authorized to issue detailed regulations to all commercial banks. These banks are providing traditional services such as fixed & savings deposits, loans, investment, and leasing. Further, they developed new products and services including electronic access such as online banking, internet banking, and call centers and so on to perform the transactions easily. They facilitate liquidity in the entire economy. So the banking sector plays a major role in the financial system in Sri Lanka.

1.2. Justification and Objective of the Study

Employees are the backbone of the organization (Sumitha & Padmaja, 2017). Most of the employees are not satisfied with the difference between reality and the expectation of the job. This may lead to job dissatisfaction and turnover of employees. Therefore, it is very important to investigate the factors which are influenced by job satisfaction. With regard to the entry of new banks, competition in the banking sector is increased in Sri Lanka. Therefore, employees have to face many difficulties in performing their duties with the working environment, workload, targets, and tough deadlines. According to the demographic factors, the satisfaction of the employee may diverge. Further, the satisfaction level can be differed according to the private or public sector. In this sense, very few studies have attempted to compare the overall job satisfaction of the government and private bank employees (Weerasinghe, Senavirathna & Dedunu, 2017). Moreover, in Sri Lanka, it couldn't discover any study conducted on exploring and comparing the causes of banker's job satisfaction sector-wise. So, the main objective of this study is to compare the level of job satisfaction of the employees and the influencing factors on job satisfaction with respect to the banking sector. Further, it is going to ascertain the most significant factors affecting job satisfaction in each group. Consequently, banking management could recognize the effect of each cause sector-wise and would be able to provide essential enhancements to upgrade the employee's satisfaction accordingly. It leads to making a win-win working environment for both employee and employer, and uplift the banking sector where the highly satisfied employees comprise.

1.3. Literature Review

Jahufer and Ahamed (2014), survey the job satisfaction of government and private bank employees in Ampara region, Sri Lanka. The independent sample t-test result shows that there is a significant difference between gender and job satisfaction as well as the type of bank and job satisfaction whereas, there is no significant variance between civil status and job satisfaction. The analysis of variance (ANOVA) result indicates that there is no

significant difference between experience, age, ethnicity, educational qualification wise job satisfaction, but there is a significant variance between distances to working place and job satisfaction.

Weerasinghe, Senevirathna and Dedunu (2017) conduct a study on factors affecting job satisfaction of public and private banking employees in Anuradhapura district, Sri Lanka. The independent sample t-test reveals that the level of job satisfaction of public sector banking employees is higher than private-sector employees. Further, multiple regression results implied that statistically significant impacts of work itself, salary, job security and recognition on employee job satisfaction in the banking sector Sri Lanka, however, the possibility of growth and working conditions no longer make a significant influence on employee job satisfaction.

Hoshi (2014) examines employee satisfaction in different banking sectors, including private, public, foreign, and domestic banks in Northern Cyprus and how factors affect employee's job satisfaction. Frequency distribution results show that there is a positive relationship between the job satisfaction of employee and reward, salary, the security of a job, promotional opportunities and good relationship between the co-workers. The results of the study also show that most of the bankers are satisfied with their job.

Ali, Khan, M. Ch and A.Ch (2018) investigate the relationship between job satisfaction and its determinants of various banks in Lahore. The ANOVA results and correlation statistics showed that personal determinants like gender, age, personality, marital status and organizational determinants like salary, promotion opportunities, recognition & rewards, relationship with supervisor & co-workers, fringe benefits, working conditions, work itself and tenure have a significant positive relationship with job satisfaction. Results also implied that salary has the strongest influence on job satisfaction whereas the relationship with associates has the weakest effect on it. Promotion and recognition & rewards appeared as key causes of dissatisfaction.

2. Methodology

A cross-sectional design was used in this study. The self-administrated structured questionnaire was prepared to collect the data and distributed it among private and public sector bankers in Badulla district, Sri Lanka at their branches. When selecting the sample, it was considered all the banking employees in each public and private sector in the study area and the sample size of each sector was determined by proportionate to the population size. Then, a multi-stage random sampling technique was adopted to select 150 banking employees to the sample which comprised of all grades in banks. The first section of the questionnaire consisted of information on demographic factors while the second section contained 40 questions and information was collected about economic factors, social factors organizational factors and overall job satisfaction of employees on a five-point Likert scale. Questions were designed to investigate the independent variables contributing to job satisfaction. Leave rules (X_1), Working hours (X_2), Workload (X_3) , Realistic Targets & Deadlines (X_4), Ability of utilizing skills (X_5), Management System (X_6), Empowerment (X_7), Job security (X_8), Recognition and appreciation (X_9), Possibility of growth (X_{10}), Relationship with the staff (X_{11}), Salary (X_{12}), Fringe benefits (X_{13}), Working pressure (X_{14}), Work-life balance (X_{15}) and Working environment (X_{16}) were considered as the independent variables in this study. Data were analyzed using SPSS 22 software. Frequency tables were used to analyze the employee's job satisfaction percentages according to the sector. By using the Chi-square test it was investigated the significant factors which should include in the ordinal logistic regression models. Thereafter, by using those factors as independent variables, two ordinal logistic regression models were fitted for each private and public sector to identify the most significant determinants on job satisfaction according to the sector, since the response factors in each model were five-point scale variables which were described as ordinal variables.

2.1. Hypothesis

The hypothesis of the study can be defined as the following equation.

$$H_A: X_i \ has \ significant \ impact \ on \ job \ satisfaction \ of \ banking \ employees \ in \ j^{th} \ sector \quad (1)$$

where i=1,2,…16 and j=private, public

2.2. Chi-squared test statistics

For a $I \times J$ contingency table large sample statistic is,

$$\chi^2 = \sum_{i=0}^{n} \sum_{j=0}^{n} \frac{(n_{ij} - E_{ij})^2}{E_{ij}} \sim \chi^2_{(I-1)(J-1)} \quad (2)$$

where i and j index the rows and columns of the table (n_{ij} = Observed cell frequency, E_{ij} = Expected cell frequency and N = Total number of observations). Expected cell frequency is calculated as follows.

$$E_{ij} = (Row\ Total * Column\ Total)\ /\ N \quad (3)$$

2.3. Ordinal Logistic Regression Model

In addition to the above, the ordinal logistic regression model was applied for the data and the confirmatory analysis of identifying impact factors on job satisfaction of the banking employee according to the sector was done. The response variable of the ordinal logistic regression model was the overall job satisfaction and predictors were social, economic and organizational determinants which were having a significant association (p-value<0.05) with job satisfaction.

$$logit(p) = \ln\left(\frac{p(Y \leq j)}{1-p(Y \leq j)}\right) = \alpha_j + \beta_1 x_1 + \beta_2 x_2 \dots \dots \beta_n x_n + \in, \quad j = 1,2,3,4 \quad (4)$$

where p is the probability that the outcome of interest observes the j^{th} satisfaction level of the response variable or less, x_i's are the independent variables, α_j is the intercept parameter of the j^{th} satisfaction level, β_i's are the coefficients of the independent variables and $\in$ is a random error.

3. Results

The internal reliability of the data set was measured using Cronbach's alpha. The overall Cronbach's alpha of the test was 0.935 and all alpha values of respective variables also were greater than 0.7 which indicates the expectations reliability of the data set.

The frequency statistics were used to obtain the background descriptive analysis of the dataset. The sample consists of 150 banking employees in Badulla district and out of them, 73 (48.7%) belong to the private sector while 77 (51.3%) belong to the public sector. Out of all respondents, there were 70 (46.7%) female employees and 80 (53.3%) were males. According to the grade of the job analysis, there were 18 banking managers, 30 banking executives, 69 banking assistants and 33 clerical staff in the sample. The age analysis indicated that the majority of bankers belong to the age category of 18-29 (78, 52.0%). Only 4 (2.7%) employees were above the age of 50 and rest were between 30-39 (53, 35.3%) and 40-49 (15, 10.0%) age categories. The sample included 9 postgraduates, 30 graduates, 32 diploma holders, 74 General Certificate Examination (GCE) Advanced Level qualifiers and 5 GCE Ordinary Level qualifiers.

Table 1. Frequency statistics of independent variables according to the sector and Chi-squared independent test for variables

Variable	Public		Private	
	Satisfaction Rate (%)	p-value (Chi-squared test)	Satisfaction Rate (%)	p-value (Chi-squared test)
Overall Job Satisfaction	45 (58.5)	-	36 (49.4)	-
Leave rules	52 (67.6)	0.000	47 (64.4)	0.710

Working hours	40 (52.0)	0.000	46 (63.0)	0.000
Work load	47 (61.1)	0.000	51 (69.9)	0.259
Realistic Targets & Deadlines	37 (48.1)	0.000	38 (52.1)	0.004
Ability of utilizing skills	53 (68.8)	0.000	44 (60.3)	0.001
Management Systems	57 (74.0)	0.000	47 (64.4)	0.001
Empowerment	47 (61.1)	0.000	35 (47.9)	0.073
Job security	44 (57.2)	0.001	46 (63.0)	0.018
Recognition and appreciation	40 (52.0)	0.000	41 (56.1)	0.000
Possibility of growth	11 (14.3)	0.004	38 (52.0)	0.001
Relationship with the staff	53 (68.8)	0.000	52 (71.2)	0.001
Salary	48 (64.4)	0.005	47 (64.4)	0.004
Fringe benefits	54 (70.1)	0.001	33 (45.2)	0.009
Working pressure	20 (26.0)	0.243	22 (30.2)	0.060
Work life balance	39 (50.7)	0.006	34 (46.5)	0.000
Working environment	58 (75.3)	0.044	46 (63.0)	0.003

According to Table 1, public sector bank employees who are satisfied with the job were greater than the private sector bank employees. The majority of the public employees were satisfied with the working environment whereas they were highly dissatisfied with the possibility of the growth inside the organization. High satisfaction rates were recorded about the management system, fringe benefits given by the employer, leave rules and relationship with the staff in government banks. However, the minority of the employees (<50.0%) in public banks were satisfied with the working pressure and the realistic approach to targets and deadlines. In private sector banks, majority of the respondents were satisfied with the relationship with the staff and workload whereas the lowest satisfaction rate was recorded for working pressure. Less than half of the private bankers were satisfied with fringe benefits, work-life balance, and empowerment. There is a measurable job satisfaction rate difference between empowerment, the possibility of growth and fringe benefits sector-wise. The employee's satisfaction on the empowerment of the organization was higher in public sector than private sector while nearly half of the private sector bankers expressed that there is a possibility of growth inside the workplace and that percentage is lower in the public sector. The public bank employees, who are satisfying with the fringe benefits, were higher than private bank employees.

Table 2. Results of Ordinal logistic regression model significant coefficients

Variable	Coefficient	p-value	Relative Risk Ratio
Public sector			
Empowerment	1.415	0.012	4.116
Job security	0.939	0.068	2.557
Recognition and appreciation	0.709	0.046	2.032
Relationship with the staff	0.902	0.049	2.465
Work-life balance	0.702	0.021	2.018
Private sector			
The ability to utilize skills	1.560	0.005	4.759
Possibility of growth	1.372	0.038	3.943
Salary	0.990	0.043	2.691
Work- life balance	1.890	0.000	6.619
Working environment	1.422	0.041	4.145

Table 2, consists of the significant model coefficients in the ordinal logistic regression model which were fitted according to the sector. There were positive significant effects from empowerment, job security, recognition and appreciation, relationship with the staff and work-life balance on public bank employee's job satisfaction. The most significant causative factor is the empowerment of employees and when there is an advance in the empowerment of the employee; a person is 4.116 times more likely to be satisfied with the job. However, in the private sector other than the work-life balance, all other significant causes were varied in the second model. Ability to utilize skills, the possibility of growth, salary, work-life balance and working environment were positively affected by job satisfaction. In private sector, the dominant significant impact factor was work-life balance and the employee is 6.619 times more likely to be at a satisfying level when there is an increase in the work-life balance. It implies that the impact factors on job satisfaction in the banking industry vary with the sector since two ordinal regression models comprised of different factors while the work-life balance was the only variable in both models.

4. Discussion

The analysis of frequency comparison implies that there is a difference between overall job satisfaction among public and private bankers. The satisfaction level was higher in public bank employees than private-sector employees, and this was evidenced in the study done by the Weerasinghe et al. (2017) in Sri Lanka.

Fitted ordinal logistic regression models, were confirmed that the significant impact factors were differed across the sector, although the work-life balance was in both models. It implies that the relevant authorities should be considered about these various factors along with the banking sector.

Regardless of the sector, responsible parties should enhance the empowerment of employees to make them work happily in the organization. In public banks, management needs to organize activities to advance the relationship with the staff. Then employees would be sharing their experience & knowledge with them and easily achieve their tasks well with a satisfactory mind about the job. Further, they should provide methods to propagate the banking job in the society and appreciate their achievements and hard work not only annually but also at the right time such as the methods; by organizing the award ceremonies. In the government bank, job security is high, since the government is the dividend party. Therefore, the majority of the employee is highly satisfied with job security and there is a positive significant effect on job satisfaction from it. These relationships were supported by the study which concluded that the job satisfaction level rises with higher job security and work recognition by the society, conducted by Tanjeen (2013).

In private banks, relevant authorities are requested to take action on advancing the employee's ability to utilizing skills by assigning challenging tasks according to their skills. This was proven by the literature done by Sinha & Shukla (2013). Further, they should generate a platform for their employees to attain career growth. Then workers contribute their hard work to gain profit for the organization with the satisfaction of their job. Lack of proper workspaces, quality of the air and temperature, lighting and unfavorable conditions of the office environment can consider as the negative causes of job satisfaction (Abeywardana & Wickramasinghe, 2008). Therefore, a responsible party in the private banks needs to enhance the quality of the working environment and increase the employee's satisfaction, since it was identified that the working environment as one of the significant factors in the ordinal logistic regression model. Sinha (1958) studied that inadequate salary as one of the important factors that cause job dissatisfaction among employees. According to the analysis, the salary was investigated as one of the significant causes of job satisfaction of private banking employees. Therefore management should maintain policies to increase the salary in a competitive base with the performance of the employee

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The Case of the Florida Lemon: Options for the Buyer or Trap for the Consumer: The Florida Motor Vehicle Warranty Enforcement Act

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Abstract
The State of Florida is just one of the fifty states and the District of Columbia which have enacted a state Lemon Law. This paper outlines the provisions of the Florida statutory scheme that covers both the sale and lease of vehicles that are found to be "lemons." The Florida Lemon Law is also known as "The Motor Vehicle Warranty Enforcement Act," as it must be viewed in light of legal provisions relating to warranties. The Florida Lemon Law determines what defects or conditions will trigger the operation of a warranty and whether and under what circumstances the warrantor (generally, the manufacturer) may attempt to remedy or "cure" any defective condition. The paper also outlines the procedures for resolving a dispute between a dealer or automobile manufacturer and an unsatisfied customer when the customer is seeking either a refund or a replacement vehicle for a "lemon."

Keywords: Lemon Law, Defect, Warranties, Arbitration

1. Introduction

Nolo.com (2019) reports that "An estimated 150,000 cars each year (or 1% of new cars) are lemons—cars that have repeated, unfixable problems. Every state has enacted some type of "lemon law" to help consumers who get stuck with these defective cars." Consider this scenario: Walter has recently moved from New Jersey to Florida. No longer needing a second family SUV, Walter contacts the local VW dealer in order to purchase the "dream car of his youth"— a VW Beetle Convertible. However, the dream quickly turns into a nightmare! Within a week of the purchase, Walter notices that the back seat floor gets soaked every time there is a rain event— quite common in Florida! Over the next few months, Walter brings the VW back to the dealership five times, but the problem persists. The VW is out of service for a total of 33 days during a nine-week period when it is supposedly being repaired. Exasperated, Walter now just wants his money back. The dealer, however, refuses and insists that Walter bring the VW back for "one more try." Walter objects and tells the dealer he is going to drive back to New Jersey where he has a good friend who is a VW dealer. Walter tells the Florida dealer he expects to get a full refund of his purchase price and also to be reimbursed for the cost of gas, motels, meals, etc. while he returns to and from

New Jersey to purchase the VW from a dealer whom he trusts. The Florida dealer informs Walter that "there is no way I'm going to agree to that" and tells Walter that they will simply have to go to arbitration to settle their dispute. Walter counters by immediately filing a law suit in the court in the Florida County where he is now living, seeking rescission of his contract with the dealer and unspecified damages.

2. What is a "Lemon Law"?

Essmeier (2005, p. 1) noted: "Every now and then, some unlikely buyer will end up with a vehicle that has a problem that simply cannot be repaired. These problem vehicles are universally known as 'lemons.'" The State of Florida has provided a strong policy justification and perspective supporting the underpinnings of "*The Motor Vehicle Warranty Enforcement Act*" (State of Florida, 2019), commonly known as the *Florida Lemon Law,* to deal with such circumstances:

> "The Legislature recognizes that a motor vehicle is a major consumer purchase and that a defective motor vehicle undoubtedly creates a hardship for the consumer. The Legislature further recognizes that a duly franchised motor vehicle dealer is an authorized service agent of the manufacturer. It is the intent of the Legislature that a good faith motor vehicle warranty complaint by a consumer be resolved by the manufacturer within a specified period of time; however, it is not the intent of the Legislature that a consumer establish the presumption of a reasonable number of attempts as to each manufacturer that provides a warranty directly to the consumer. It is further the intent of the Legislature to provide the statutory procedures whereby a consumer may receive a replacement motor vehicle, or a full refund, for a motor vehicle which cannot be brought into conformity with the warranty provided for in this chapter. However, nothing in this chapter shall in any way limit or expand the rights or remedies which are otherwise available to a consumer under any other law" (State of Florida (Legislative Intent), 2019).

A *Lemon Law* is a statute enacted by the legislature of an individual state that provides a remedy for a purchaser or lessee of an automobile (and other consumer goods) in order to compensate the purchaser or lessee for a product that repeatedly fails to meet standards of *quality, safety, and performance.* Although not strictly limited to automobiles, the term "lemon" is most often associated with defective motor vehicles, including automobiles, recreational vehicles (RVs), trucks, SUVs, and motorcycles (see *Yvon v. Baja Marine Corp.*, 2007).

The State of Florida is just one of the fifty states and the District of Columbia who have enacted a state Lemon Law (Hunter, 2016; Lemon Law America, 2019). This paper outlines the provisions of the Florida statutory scheme that covers both the sale and lease of vehicles relating to potential "lemons" (Smith, 2011). The Florida Lemon Law is also known as "*The Motor Vehicle Warranty Enforcement Act*," as it must be viewed in light of statutory provisions relating to warranties (see State of Florida (Florida Statutes), Chapter 681, 2019). The Lemon Law, originally enacted in 1988 (Smith, 2011), determines what defects or conditions will trigger the operation of a warranty and whether and under what conditions the warrantor (generally, the automobile manufacturer) may attempt to remedy or "cure" any defect or condition (Schwartz, 1975; see also UCC Section 712).

It is instructive to determine what the Lemon Law does not cover. The Florida Lemon Law does *not generally* cover used motor vehicles (Hunter, 2016); non-motorized and off-road vehicles; vehicles designed to run only on tracks; motorcycles and mopeds that weigh more than 10,000 pounds (gross weight); or the "living facilities" of recreation vehicles (see *Allen v. Holiday Kamper*, Co., 2019).

In addition, the Florida Lemon Law does not cover a defect resulting from an "accident, abuse, neglect or modification or alteration of the vehicle by persons other than a manufacturer or the authorized representative of the manufacturer." An *authorized service agent* may be any person, including the franchised new automobile dealer (the dealer), who is authorized by the manufacturer to service motor vehicles. It does not necessarily have to be the dealer from whom the buyer had purchased the automobile or vehicle. In the case of an RV, where there are two or more manufacturers, an authorized service representative may be any person, including the dealer,

authorized to service the items warranted by that manufacturer. (It should be recognized that under the Florida Lemon Law, some of the provisions relating to coverage, repeat repairs, days out of service and arbitration (State of Florida, 2019, pp. 8-11) may differ for recreational vehicles. These differences may reflect the high volume of recreational vehicles purchased and used in the State of Florida.)

3. What is a defect?

A *defect* is defined as a *condition* that "substantially impairs the use, value, or safety" of a motor vehicle. The use of the adverb "*substantially*" indicates that "minor or trivial defects or deviations in appearance, structure or performance are not covered under the Lemon Law (see Lawrence, 1994; Dressler, 2009). As such, the Florida definition of a defect tracks the generic definition of a product defect under the law of products liability:

US Legal (2019) offers the following definition of a defective product:

> "A defective product is an imperfection in a product that has a manufacturing or design defect, or is faulty because of inadequate instructions or warnings. A product is in a defective condition if it is unreasonably dangerous to the user or to consumer who purchases the product and causes physical harm."

Under modern products liability law, there are three types of defects: a *manufacturing* defect; a *design defect*; and a *marketing* defect, resulting from inadequate warning and labels related to a product. Hunter, Shannon, and Amoroso (2018, p.1) note that a defect can arise from three common sources under the Restatement (Third) Torts: Product Liability §§ 1-2 (1998):

- A manufacturing or production defect—that occurs from a random and atypical breakdown in the manufacturing process (Owen, 2002). A production or manufacturing defect exists 'if the product differs from a manufacturer's intended use or if the product differs from apparently identical products from the same manufacturer'" (Hunter, Shannon, & Amoroso, 2018, p. 7; see also *Hunt v. Ferguson-Paulus Enterprises*, 1966);
- A design defect (Twerski & Henderson, Jr., 2009; Stewart, 2009; see also *Talavera v. Ford Motor Company*, 2013)—that is characteristic of a whole product line, such as the infamous Ford Pinto automobile (Lee, 1998; Hester & Adams, 2017). "Whether a product was defectively designed must be judged against the technological context existing at the time of its manufacture"—utilizing so-called "state of the art evidence: (see *Boatland of Houston v. Bailey*, 1945); or
- A marketing defect—involving inadequate warnings concerning risks or dangers, or inadequate instructions relating to how to properly or safely use a product. Many cases in the area of a marketing defect involve food, drugs, or more recently, children's toys or car seats (Hunter & Montuori, 2013; generally, Hunter, Amoroso, & Shannon, 2012, p. 35). In order for a warning to be adequate, the manufacturer must make the product "safe for both its intended and foreseeable uses."

Hunter, Shannon, and Amoroso (2018, p. 19) note that there are three criteria that are used to determine the adequacy of product warnings:

> … "A warning must be displayed in such a way as to reasonably catch the attention of the person expected to use the product. This element deals with such factual questions as size, position, and even the color of the warnings";
> … "A warning must fairly apprise a reasonable user of the nature and extent of the danger and not minimize any danger associated with the use of a product"; and
> … "A warning must instruct the user how to use the product in such a way as to avoid the danger—essentially how to safely use the product. Courts emphasize that the manufacturer must anticipate reasonable risks and warn of these risks. Manufacturers must also appreciate the 'environment of use' of a product" (see *Spruill v. Boyle-Midway, Inc.*, 1962)

4. Defects and Warranty Law

Under Florida law, the defect or condition, referred to as a "nonconformity" (see *Gilvin v. FCA USA, LLC,* 2019), must meet three criteria:

1. The defect or condition must be covered under the warranty (see, e.g., *Bieda v. Case New Holland Industries, Inc.*, 2019);
2. It must have been reported to the manufacturer or authorized service agent during the "Lemon Law Rights Period," which is defined as the "first 24 month period after the date of the original delivery of a motor vehicle to a consumer"; and
3. As noted above, the defect or condition must "substantially impair the use, value or safety of a vehicle."

The Lemon Law is related to warranty protections for a product. Investopedia (2019) defines a warranty as "… a type of guarantee that a manufacturer or similar party makes regarding the condition of its product. It also refers to the terms and situations in which repairs or exchanges will be made in the event that the product does not function as originally described or intended. A warranty is a guarantee of the condition of a product." At its essence, the Lemon Law is the method by which it can be determined whether or not a warranty protection can be triggered (Lane, 2019) and under what circumstances the manufacturer or dealer may be given the right to *cure* any defect or issue that "substantially impairs the use, value or safety of the vehicle" (see UCC Section 2-508) or where the buyer or lessee is seeking a replacement vehicle or a refund of the purchase price.

4.1 Express Warranties

Under the Uniform Commercial Code Section 2-313, which governs the sale or lease of a "good" (something movable and tangible), an express warranty is an "affirmation of fact or promise" made by a seller to the buyer or lessee under certain circumstances, which relates to the goods, and which becomes part of the basis of the bargain. The UCC provides that specific words such as "warrant" or "guarantee" are not required to create an express warranty. In addition, an express warranty can be created even when the seller did not have the specific intention to create a warranty. A warranty may also be created by and through the use of a "sample, description, or model." An express warranty may be oral as well as written. However, in most if not all cases involving automobiles, the express warranty will be found in a written document provided by the manufacturer and delivered by the dealer to the buyer or lessee at the time of the purchase or lease of the vehicle (Davis, 2010; e.g., Radogna, 2016).

4.2 Implied Warranties

The UCC also recognizes certain implied warranties. Implied warranties automatically exist *as a matter of law* when goods are being sold or in certain circumstances where the goods are subject to a lease. (In Florida, the provisions of the Lemon Law are applicable to a lease of an automobile where the lease is for *one year or more* and the lessee is responsible for having the vehicle repaired.) There are two implied warranties: *the warranty of merchantability* (UCC Section 2-314) and *the warranty of fitness for a particular purpose* (UCC Section 2-315).

The implied warranty of merchantability, at its essence, promises that the goods "are fit for the ordinary purposes" for goods of that type are used. In addition, in order to be considered merchantable, the goods must "pass without objection" under the standards of the trade and the goods are sufficiently "contained, packaged, and labeled" as required by the sales contract (see *Easterling v. Ford Motor Co.*, 2019). The warranty of merchantability applies only if the seller is a merchant with regards to the goods of that kind (UCC Section 2-1-4(1))—i.e., someone who "deals regularly" in goods of that kind or who holds him/herself out as having special knowledge regarding the goods.

There is a second, more specific implied warranty, the implied warranty of fitness for a particular purpose, which is created if the seller has reason to know that: (1) the buyer intends to use the goods being sold for a particular purpose; and (2) the buyer is relying on the seller's skill or judgment in selecting which goods to buy for that purpose. When these two conditions are met, the seller will be bound by this additional warranty (Kwestel, 2010).

Under UCC Section 2-316, it is possible for a seller to exclude (disclaim) (see *Kaiser Martin Group, Inc. v. Haas Door Co.*, 2019) or modify implied warranties (e.g., Ganz, 1964; Tansey, 2019). However, it is practically impossible to disclaim an express warranty once an express warranty is given (see Saunders, 2016). Although not strictly required in all states, in order to disclaim the implied warranties, the seller or lessor must provide the exclusion or modification in a "writing" or in a printed document, such as the sales contract—and in a manner that makes the exclusion or modification *conspicuous*. [Under UCC Section 2-201(1), the word "conspicuous" means a term "so written, displayed, or presented that a reasonable person against which it is to operate out to have noticed it.] The UCC provides specific language that may be used for such disclaimers:

- For the warranty of merchantability: *"The seller undertakes no responsibility for the quality of the goods except as otherwise provided in this contract";*
- For the warranty of fitness for a particular purpose involving a sale to a consumer: *"The seller assumes no responsibility that the goods will be fit for any particular purpose for which you may be buying these goods, except as otherwise provided in the contract";*
- In addition, it may be possible to disclaim the implied warranties by included phrases such as "*with all faults*" or "*as is*."

However, warranty disclaimers will not provide protection for a manufacturer if a buyer is injured by a product and the plaintiff is relying on the theory of strict liability in tort (see, e.g., Hunter, Shannon, & Amoroso, 2018, pp. 155-162; *Greenman v. Yuba Power Products, Inc.*, 1963), and not a warranty theory, as a basis of recovery. With the exception of contract fraud, where a state law mandates a warranty, or where a dealer voluntarily offers the buyer a warranty, sales of *used vehicles* are not accompanied by a statutory warranty and are generally sold "as is" (Hunter, 2016; Tansey, 2019).

5. The Essence of the Lemon Law: Repeat Repairs

At the outset, it is important for the owner or lessee of a vehicle to promptly report any problems encountered with a vehicle to the manufacturer, an authorized service agent, or dealer so that the vehicle might be repaired in a timely manner (Office of Attorney General, 2019). The key at this point is in determining what is termed as a "repair attempt" (see *General Motors Corporation v. Dohmann*, 1998; Hanin, Greenbaum, & Aron-Dine, 2017).

A repair attempt involves the *replacement* of a component (commonly referred to as a *part*) or some *adjustment* made to a component or part in order to correct a nonconformity. Generally, if an owner or lessee has taken a vehicle for repair of the same defect *at least three times* and the defect has not been repaired or fixed, the owner or lessee must send written notice to the *manufacturer* (return receipt requested), *not the dealer*, by registered or express mail in order to give the manufacturer *one last chance* to remedy the defect. The manufacturer must respond within 10 days. The failure of the manufacturer to respond within the 10-day statutory period means that the buyer or lessee does not have to afford the manufacturer with the 'one last chance' to remedy the defect. The response of the manufacturer, which is *not* required to be in writing, must be specific: the manufacturer must direct the buyer or lessee to a reasonably accessible repair shop or dealer for the final repair. The appointment itself must be scheduled within a reasonable time after the manufacturer received the notification. A written notice, however, is generally preferable.

Once the buyer or lessee has delivered the vehicle to the repair shop, the manufacturer has ten days to fix any defect. If the manufacturer fails to fix the defect within the ten days, the buyer or lessee does not have to permit any further repairs. At that point, the manufacturer must refund the full purchase price or provide for a replacement vehicle. If the "first defect" is successfully corrected at the final repair attempt, but a new defect has occurred during the "Lemon Law Rights" period, the same procedures as outlined above concerning the rights and responsibilities of the parties apply.

4.1 "Days Out of Service"

If a vehicle has been "out of service" for repair of one or more defects for a *cumulative total of 15 or more calendar days*, the buyer or lessee must send a written notice of this fact to the manufacturer, again not the dealer, by registered mail (return receipt requested) or express mail. An "out of service day" is *any day* (including any weekends and holidays) that a vehicle is left at an authorized service agent or a manufacturer's designated repair facility for examination or repair of one or more vehicle nonconformities. After the manufacturer receives the notification, the manufacturer or its authorized service agent must be afforded at least one opportunity to inspect or repair the vehicle. The Florida Lemon Law presumes that the manufacturer or authorized service agent has had a "reasonable number of attempts" if the vehicle is "out of service" for repair of one or more nonconformities for a *cumulative total of 30 or more days and the buyer has given the required written notification and inspection/repair option.* In such a case, the manufacturer must offer a refund or a replacement vehicle to the buyer or lessee (Office of Attorney General, 2019).

5. Remedies

It is the buyer or lessee's option to choose either a *refund* (see *Sheinfeld v. BMW Financial Services, NA, LLC*, 2019) or *replacement vehicle* if the vehicle qualifies as a "lemon." The buyer or lessee, however, is not required to accept a replacement vehicle: the buyer or lessee has an unconditional right to a refund once a vehicle is determined to be a "lemon."

The remedies provided are closely associated with that of "cover" under the Uniform Commercial Code Section 2-712 in which an aggrieved buyer may seek a "reasonable substitute good" (e.g., Anderson, 2018). If the buyer or lessee agrees to accept a replacement vehicle, the replacement vehicle must be either *identical to or reasonably equivalent to the "lemon."* The Florida Consumer Guide (Office of the Attorney General, 2019) defines a "reasonable equivalent replacement vehicle" as one with a manufacturer's suggested retail price (MSRP) of not more than 105 percent of the manufacturer's suggested retail price of the "lemon." Again tracking UCC 2-712, the buyer or lessee is also entitled to recover certain "collateral" and incidental charges that have been previously paid.

5.1 Collateral and Incidental Charges

Collateral charges are defined as "reasonable additional charges to a consumer wholly incurred as a result of the acquisition of the motor vehicle." Collateral charges may include any manufacturer or dealer-installed items, service charges, certain finance charges, sales taxes, and title and document charges. Incidental charges, analogous to "incidental damages" under the Code (Section 2-715), include any reasonable costs to the buyer or lessee which are "directly caused by the nonconformity of the motor vehicle." Incidental charges may include postage, car rental expenses, towing, repair costs, lodging, etc. (Office of Attorney General, 2019).

5.2 Refund Issues

If the buyer or the lessee chooses the option of a refund, the buyer or lessee is entitled to reimbursement of the *full purchase price of the vehicle,* including the return of any cash payments made by the buyer or lessee and any allowance for a trade-in. Interestingly, because of a wide range of trade-in allowances, if the parties cannot agree on the actual amount of the trade-in allowance contained in the sale or lease documents, the trade-in reimbursement will be equal to "retail price stated in the National Automobile Dealers Association (NADA) Official Used Car Guide (2019) (Southeastern Edition), generally known as the "Blue Book," reflecting unique conditions relating to Florida, at the time the "lemon" was acquired. If the buyer or lessee owed money on the trade-in at the time of the trade-in, then the retail price will be reduced by the amount of any debt. Interestingly, it is the responsibility of the dealer to provide the NADA book to the consumer. As in the case of a replacement vehicle, the consumer may be entitled to reimbursement for certain "collateral" and "incidental" charges (Office of Attorney General, 2019).

If the vehicle is financed, any refund will be divided between the consumer and the lessor or lien-holder (bank, credit union, finance company) based on their "respective financial interests." If the vehicle is leased, the Lemon Law provides that the lease agreement will terminate when the vehicle is turned-in to the dealer. No penalties may be assessed against a lessee for any early lease termination.

Interestingly, if the consumer receives a replacement vehicle or a refund, the manufacturer is entitled to receive compensation for the use of the vehicle by the buyer or lessee up to the time the consumer and the manufacturer settle the claim or the arbitration hearing is held, whichever occurs first. This "offset for use" equals the number of miles attributable to the consumer (less any mileage on the odometer at the time of the purchase or lease, mileage accrued by the manufacturer or service agent, and any mileage driven to any arbitration hearing) multiplied by the base sales price of the vehicle as reflected on the purchase invoice, exclusive of taxes, government fees, and dealer fees, or in the case of a lease, the agreed upon value as reflected in the lease agreement, divided by 120,000 (or 60,000, in the case of a recreational vehicle (Office of Attorney General, 2019). [See the example in Appendix I.]

6. What Happens if the Parties Do Not Agree? Arbitration

Arbitration, "third-party dispute resolution," or "alternate dispute resolution" (Murray, 2019) is a process that allows the manufacturer's agent or representative and the owner or lessee of a vehicle to appear before an unbiased third party, called an "arbitrator," in an attempt to resolve the consumer's Lemon Law claim for a repurchase or replacement of the "lemon." (AutoLemonLawUSA.com, 2019; Reporter, 2019). Repa (2019) notes that "proponents of arbitration commonly point to a number of advantages it offers over standard litigation." including: avoiding hostility and providing more cost effective, faster, more flexible, and more simplified rules of evidence and procedures than does litigation. Each state has established specific requirements that the consumer must adhere to in seeking restitution under their state's Lemon Law.

As a general rule, a statutory or voluntary obligation or requirement that the parties arbitrate a dispute of arbitration must first be established. Several states have established a statutory requirement requiring consumers to enter into non-binding arbitration in a variety of circumstances.

Some states do not require arbitration at all, relieving the consumer of this responsibility and permitting a consumer to go directly to a court of competent jurisdiction for redress of a claim. Some states, most notably California, have provided for a system of "voluntary" arbitration that is offered by the automobile manufacturer and which is binding on the manufacturer, but not on the consumer.

Prior to entering into arbitration, an automobile manufacturer may attempt to "settle" a consumer's complaint by offering an alternative, such as a service contract, an extended warranty, or the return of monthly car payments to cover the period during which the consumer had been deprived of the use of a vehicle. DiMatteo and Wrbka (2019), however, argue that that some of these alternatives may not put the consumer in as good a position as does the arbitration process.

6.1 Florida Arbitration

Under applicable Florida law, the procedure for arbitration essentially involves two steps. If the buyer or lessee believes that they are entitled either to a refund or a replacement vehicle, and the manufacturer is unwilling to do so, the claim must now be submitted to arbitration. In many cases, a manufacturer will sponsor a procedure for *dispute settlement* which has been certified by the Florida Department of Legal Affairs. If a manufacturer has initiated such a procedure, the consumer must be notified in writing in a clear and conspicuous manner *at the time of the acquisition of the vehicle.* The claim must be filed within *60 days* from the date the Lemon Law rights period expires.

If the manufacturer does not sponsor such a certified dispute settlement procedure, *or* if the procedure fails to result in a decision within 40 days of the filing of a claim, *or* if the consumer is unsatisfied with the decision, the consumer is required to contact the Florida New Motor Vehicle Arbitration Board, administered by the Office of

the Florida Attorney General, to have the dispute arbitrated. Should the manufacture have adopted a dispute settlement procedure that has *not been certified,* the consumer is not required to avail themselves of that procedure.

Any request for arbitration by the Florida New Motor Vehicle Arbitration Board must be filed within 60 days of the expiration of the Lemon Law rights period or within 30 days from the final action of the manufacturer's certified procedure, *whichever occurs later.*

If a consumer has been awarded a refund or replacement vehicle through the arbitration process, the manufacturer must comply with the decision of the Board within 40 days from the date the manufacturer receives a written copy of the Board's decision, unless the manufacturer appeals the decision. If the manufacturer appeals the award in court and the award is upheld, the consumer is entitled to recover his or her reasonable attorney's fees, plus $25 per day for each day beyond the 40-day period following the manufacturer's receipt of the decision of the Board. Under Florida law, if the court determines that the manufacturer has brought the appeal in "bad faith," for example as defined by UCC Section 1-201-(20), or for the purpose of harassment of the consumer, the court may double or triple the amount of any award.

The consumer has the further reciprocal option of seeking redress in court. The consumer must file a complaint for relief within 30 days of receiving the Board's written decision (Office of Attorney General, 2019). Generally, courts called upon to review an administrative action will consider whether the agency's action was "arbitrary or capricious, an abuse of discretion, or contrary to law" (see, e.g., Ponomarenko, 2018), and not the substance of any complaint.

7. "Back to Walter"

This article has attempted to shed light on some of the issues raised in the opening scenario relating to Walter's purchase of the VW "lemon." These are some possible conclusions:

1. There is a good chance that the vehicle Water purchased has exhibited a defect or nonconformity that would qualify under the Florida Lemon Law. The situation seems to fall within the definition of a defect that is not "trivial," but one that impairs the "use, value, or safety" of the vehicle he purchased.
2. Walter has attempted to permit the dealership to "cure" the defect by returning to have the water problem remedied on five occasions.
3. The VW has been "out of service" for a total of 33 days which more than meets the Florida statutory threshold of 30 days.
4. Walter has the right to refuse delivery of a replacement vehicle and the right to receive a refund.
5. At this point, Walter can refuse to give the dealer "one more try."
6. Driving back to New Jersey to purchase a "new vehicle" may, however, be a "bridge
7. too far." Seeking collateral or incidental damages for such things as he cost of gas, motels, meals, etc., while Walter returns to and from New Jersey to purchase a second VW from a dealer in whom he has trust might be considered "too remote" or "unreasonable" under the circumstances.
8. If the dealer refuses to provide Walter with a refund, it would be important to determine if the manufacturer has sponsored a procedure for dispute settlement (arbitration) that has been certified by the Florida Department of Legal Affairs. The parties must then follow the procedures outlined for the arbitration of disputes in Florida which would preclude Walter from filing a lawsuit at that point.

The Florida Motor Vehicle Enforcement Act has attempted to answer questions relating to vehicles that exhibit persistent problems and which are thus truly identified as "lemons." Residents of states beyond Florida should carefully consult their own statutory schemes in order to ascertain whether they enjoy the same rights as privileges as did Walter in dealing with the *lemon* he purchased.

[By the way, one of the authors of this article has recently purchased a VW Beetle convertible—and it is "perfect"!]

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APPENDIX- DEALER COMPENSATION FOR USE OF THE VEHICLE

975 miles on the odometer, less 15 miles on the odometer at time of purchase, less 100 miles (round trip) for the arbitration hearing = **860 miles**
Vehicle Purchase Price = $**23,000**
Divided by: **120,000**
860 X $23,000 DIVIDED BY 120,000= **$164.83**