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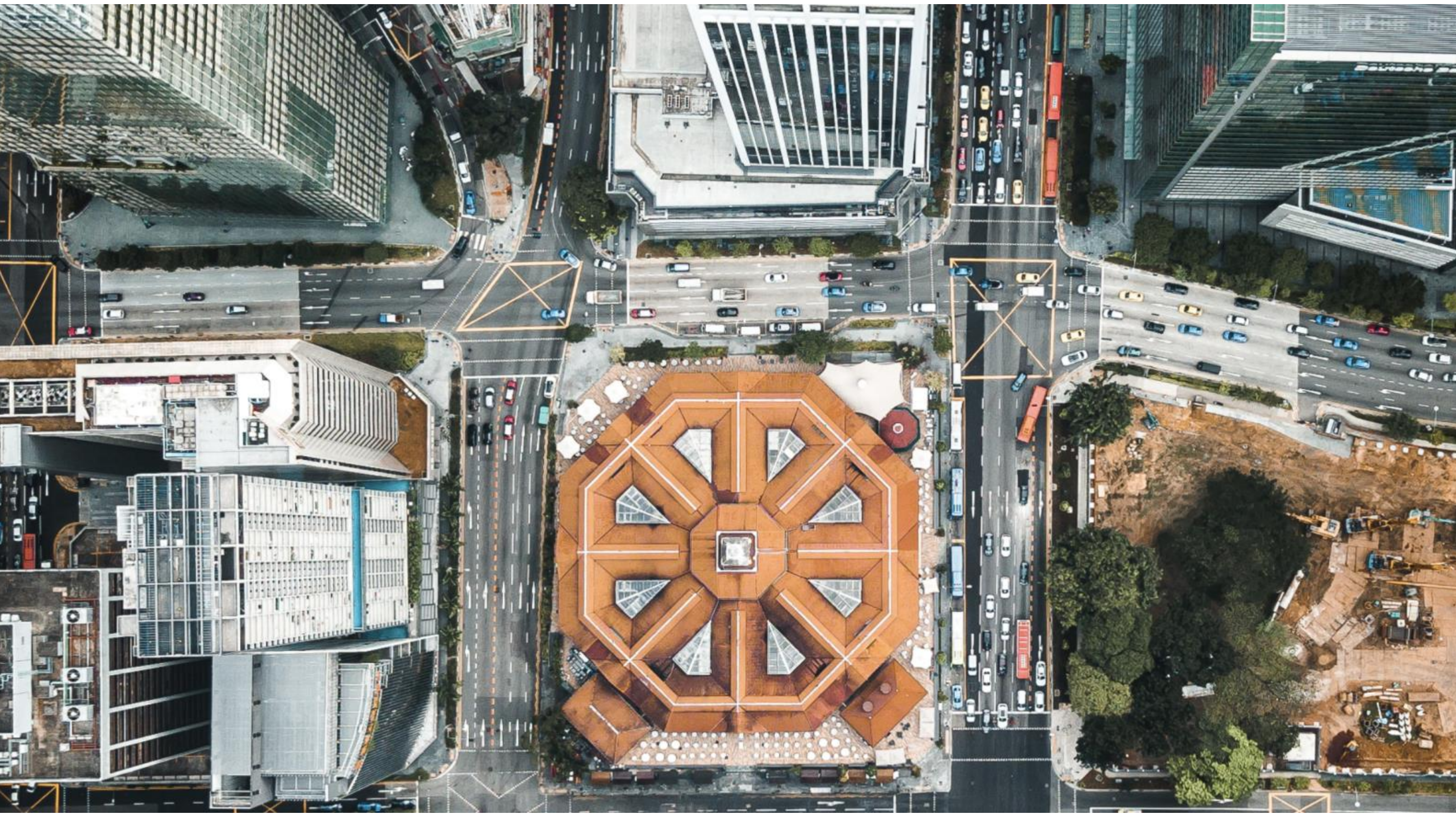

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Relationship Between Regulatory Interest and Market Interest Rates in Vietnam: Quantitative Analysis Perspective

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Abstract
The article studies the relationship between regulatory interest and market interest rates in Vietnam from 2015 – 2022. This relationship has been mentioned in many theories and empirical studies in different countries and in different periods. In order to explain it, the research team collected data on the refinancing rate – which represents the regulatory interest rates and lending rates – representing the market interest rates from 2005 to 2022. The data is collected quarterly and analyzed using Eviews8 software to build a linear regression model showing the relationship between regulatory interest rates and market interest rates during the research period. In this article, the research team divides the research period into three phases: 2005Q1 – 2011Q4, 2012Q1 – 2016Q4, 2017Q1 – 2022Q4. The results of the linear regression model show that for the period 2005Q1 – 2011Q4, when the regulatory interest rate increases by 1%, the market interest rate increases by 1%, the market interest rate increases by 0.7326%; for the period 2012Q1 – 2016Q4, when the regulatory interest rate increases by 1%, the market interest rate increases by 0.5943%; for the period 2017Q1-2022Q4, when the regulatory interest rate increases by 1%, the market interest rate increases by 0.2269%. This shows a positive relationship of regulatory interest rate and market interest rate. In addition, for the period 2012Q1-2016Q4, the research team added trend variables and for the period 2017Q1-2022Q4 the research team added trend variables and dummy variables to the regression model. It also proves that the market interest rate in the research period is governed by the trend and volatility of the economy. From the research results, the research team made several exchanges and discussions to improve the effectiveness of the interest rate management policy in order to achieve the goal of stabilizing the macro economy and supporting economic growth.

Keywords: Relationship, Regulatory Interest Rate, Market Interest Rate, Vietnam, Quantitative Analysis

1. Introduction

2005 to 2022 is the period in which the regulatory interest rate and market interest rate experience multiple fluctuations. Especially in the period before 2015, the Central Bank continuously changed the regulatory interest rate according to the development of the economy, the interest rate in the market also showed a trend of changing in the same direction with the regulatory interest rate over the years. After 2015, the Central Bank implemented a policy of stabilizing interest rates, the regulatory interest rates fluctuated from 6.5% to 4%. Data on regulatory interest rates and market interest rates show a positive relationship from a qualitative perspective. This study "Relationship between regulatory interest rate and market interest rate in Vietnam: quantitative analysis perspective" has an important meaning in testing the relationship between operating interest rate and market interest rate in Vietnam, from which there are solutions and proposals in the management of interest rate policy and monetary policy of the State Bank of Vietnam. In this article, the research team focuses on analyzing the relationship between regulatory interest rate (represented as refinancing rate) and market interest rate (represented as lending interest rate) in Vietnam in the period of 2005 -2022 via Excel software, and Eviews 8.

2. Research overview

Many empirical studies show the impact of interest rates on macroeconomic variables such as inflation, exchange rate, aggregate demand, etc. To clarify the relationship between interest rates and macro variables, some studies point out the relationship between the central bank's regulatory interest rate and the market interest rate. Research on the impact of monetary policy on growth and inflation, Cuong, T.A et al. (2021) showed a positive correlation between regulatory interest rate (represented by refinancing interest rate) and market interest rate (represented as lending interest rate). By quanitiative analysis method, the study shows that when the refinancing interest rate increases by 1%, the lending interest rate will increase by 0.656787%. In addition, based on the analysis of data on Vietnam interest rates for the period from 2015 to 2019, the article shows that the regulatory interest ratses of the State Bank of Vietnam have the same trend of fluctuations with interest rates in the market.

Anh, N.T.L (2015) studied the impact of lowering interest rates on Vietnam's financial market, showing a positive correlation between regulatory interest rates and market interest rates by a number of signs: Since 2012, the State Bank has tightened interest rates, issued a policy to reduce deposit interest rates to 7.5% with the aim of revitalizing the economy, leading commercial banks to simultaneously lower interest rates to low levels; From 2012 to 2014, the State Bank's flexible management of the interest rate ceiling helped reduce the deposit interest rate, thereby reducing lending rates; The credit interest rate of commercial banks depends on the interest rate of the central bank when commercial banks cannot determine their own buying and selling prices.

Chi, V.M & Khanh, P.G (2022) pointed out that the regulatory interest rate of the Central Bank will guide and be the basis for determining other interest rates in the market because it is the price that credit institutions make borrowing/depositing transactions with each other or with the central bank. After that, the credit institutions will provide financial products to customers with normal interest rates based on the interest rate of the central bank. Thus, when operating monetary policy according to the interest rate target, the central bank will change the interest rate (target/policy interest rate) to affect all other business interest rates in the economy, specifically: The Central Bank will use the interest rate to implement tightening or expansion of monetary policy. Regarding deposit interest rates, after the State Bank raised the operating interest rate by 200 basis points, commercial banks quickly raised the deposit interest rates of all terms.

Timothy Cook & Thomas Hahn (1989) examined the effect of monetary policy on interest rates by estimating the impact of changes in the federal funds rate target – the Federal Reserve's policy tool – for market interest rates in the 1970s. The results show that changes in the target cause large fluctuations in short-term interest rates and smaller but significant changes in average and long-term interest rates.

Anne, V.W (2010) studied money market activity and short-term forecast volatility in the United Kingdom, hypothesized whether, in the UK, the choice of operating framework for monetary policy is systematically related to money market interest rate models. The results indicate that a tighter spread between the market interest rate and the official repo rate (the Bank of England's operating rate) leads to money market volatility.

Spencer Dale (1993) studied the effect of changes in UK official interest rates on market interest rates since 1987, the results show that market interest rates move in the same direction as the regulator interest rate. (Nhue Man, 2022), showed the positive relationship of regulatory interest rates and market interest rates. Research on interest rate management by the State Bank of Vietnam, Khai, N.T (2017) shows that when the central bank changes the basic interest rate, it affects short-term interest rates in the money market. Unlike previous studies, this study shows a two-way relationship between basic interest rates and market interest rates. The basic interest rate of the Central Bank is always built and adjusted on the basis of the basic lending interest rate of commercial banks combined with detailed analysis and assessment of the macroeconomic situation of the economy in each specific period. In addition, the author recommends that the refinancing rate be used as a proxy for the regulatory interest rate in monetary policy.

Cai, N.T (2020) also supported a positive relationship between the regulatory interest rate and the market interest rate, specifically, when the State Bank cut the basic interest rate (monetary easing) causing interest rates on loans to decrease. On the contrary, when the State Bank of Vietnam increases the basic interest rate (tightening monetary policy), commercial banks increased lending interest rates in terms of terms, making the demand for money decrease. Research by Thanh, N.T.K (2011); Minh, D.T. et al. (2010) also showed a positive relationship between regulatory interest rates and market interest rates through the monetary transmission mechanism.

Although some previous empirical studies have shown a positive relationship between regulatory interest rates and market interest rates. However, not many articles refer to quantitative analysis, mainly drawing conclusions about the above relationship based on descriptive statistics and trends of the research period. On the basis of a research review, this article uses a linear regression model to analyze the quantitative relationship between operating interest rates (represented as refinancing interest rates) and market interest rates (represented as lending rates) in Vietnam for the period 2005-2022. Thereby, one question arises is that when the refinancing interest rate changes, how does the lending interest rate change?

2. Movements of regulatory interest rates and market interest rates in Vietnam in the period 2005 - 2022

2.1. Types of interest rates and relationships

To operate monetary policy through the interest rate channel, the State Bank of Vietnam uses the ***regulatory interest rate (official interest rate)*** including: basic interest rate, rediscount interest rate, refinancing interest rate.

Basic interest rate is a tool to implement monetary policy of the State Bank of Vietnam in the short term. According to the Law on the State Bank of Vietnam, the basic interest rate applies only to VND, announced by the State Bank, as a basis for credit institutions to set business interest rates.

Rediscount interest rate is the interest rate applied to discounting and rediscounting of commercial paper and other valuable papers such as treasury bills, certificates of deposit. This is the short-term lending interest rate of the State Bank to commercial banks and other credit institutions in the form of rediscounting valuable papers that are not yet due for payment. It can be understood that the rediscount interest rate is applied on the basis of valuable papers such as bills of exchange, promissory notes, and bonds.

Refinancing interest rate is the interest rate at which the State Bank of Vietnam applies to refinancing operations for commercial banks. In Vietnam, the State Bank refinances commercial banks through the following forms: On-lending according to credit records; Discount, rediscount commercial paper and other short-term valuable papers; On-lending in the form of pledge of short-term valuable papers.

The relationship between regulatory interest rates and market interest rates: The official interest rate management has established an interest rate management framework: *The refinancing interest rate is considered as the interest rate ceiling, the rediscounting interest rate is the interest rate floor of the interbank market and the open market interest rate is the guiding rate*. That will affect the market interest rates including deposit rates and lending rates. In addition, not only the State Bank in Vietnam affects the market interest rate through the official interest rate adjustment, it also uses a number of measures to control market interest rates such as ceiling deposit interest rates and lending rates (Cuong, T.A, et al., 2021).

The market interest rate is the interest rate determined by the supply and demand for capital in the money market. Market interest rates rise or fall, depending on capital needs, economic conditions, and monetary policy.

Bank deposit interest rate is the interest rates that the bank pays for deposits in the bank. Bank deposit interest rates have different levels depending on the type of deposit (non-term, savings, etc.), deposit term and deposit size.

Bank credit interest rate (loan interest rate) is the interest rate that borrowers have to pay to the bank when borrowing from the bank. Bank credit interest rates also have many levels depending on the type of loan (commercial loan, installment loan, loan via credit card...), the level of relationship between the bank and the customer, and the agreement between the two parties.

Discount rate is the interest rate applied when a bank lends to a customer in the form of a discount on commercial paper or other valuable papers that have not yet been due for payment by the customer. It is calculated as a percentage of the face value of valuable papers and is deducted as soon as the bank gives the loan to the customer. Thus, the discount rate is paid in advance to the bank, not like the normal credit interest rate.

2.2. Regulatory and market interest rates in Vietnam

To examine the relationship between the regulatory interest rate and the market interest rate in Vietnam in the period 2005-2022, the study collects data on the refinancing rate (representing the regulatory rate) and the lending interest rate (representing market interest rate). The relationship between refinancing rate and lending interest rate is shown in Figure 1.

Unit: %/year

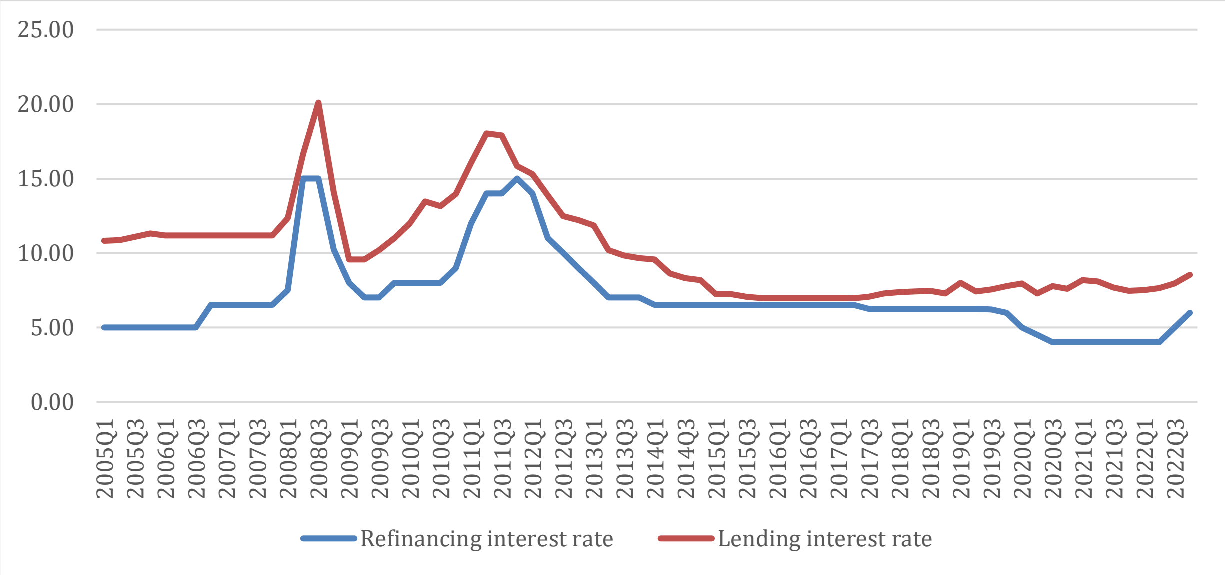

Figure 1: Refinancing interest rates and lending interest rates

Source: Compiled from the State Bank of Vietnam, IFS, IMF- Period 2005Q1-2011Q4:

Figure 1 shows the positive relationship between refinancing interest rate (representing operating interest rate) and lending interest rate (representing market interest rate) in the period 2005Q1-2008Q4. Specifically, from 2005Q1-2006Q3, the regulatory interest rate remained stable at 5%, the market interest rate increased but not significantly, from 10.82% to 11.8% in 2006Q1 and remained stable until the end of Q3/2006. From Q4/2006 to Q4/2007, the SBV increased the regulatory interest rate from 5% to 6.5% and kept it stable over the quarters. Lending interest rates during this period remained stable at 11.8%. Entering Q1/2008, the SBV increased the regulatory and refinancing interest rates from 7.5% to 15% in Q3/2008 and then decreased to 10.25% in Q4/2008. Correspondingly, market interest rates, specifically lending rates, increased from 12.32% in Q1/2008 to 20.1% in Q3/2008 and then decreased to 14.08% in Q4/2008. The reason is that in 2008, inflation was at 23% while GDP was only at 6.23% (Statistical Yearbook, 2010). This prompted the State Bank to raise interest rates to curb inflation, thereby increasing lending rates. Thus, the period 2005Q1-2008Q4 shows that regulatory interest rates have a positive impact on market interest rates.

The period 2009Q1-2011Q4 also showed a positive relationship between regulatory interest rates and market interest rates. Specifically, from Q3/2010, refinancing interest rates increased continuously and reached the highest level in 2011Q4 with the interest rate of 15%. Although, in the first months of 2011, the State Bank continued to implement measures to stabilize the money market to support economic growth. However, with signs of increasing inflation, in the last months of 2011, the liquidity situation of some credit institutions was in a big shortage and was in an alarming state, the money market had many potential risks of instability, lending interest rates were high, up to 20-25%/year. With this situation, the SBV adjusted the refinancing interest rate 4 times in 2011 and the highest was 13%/year. Along with that, lending interest rates increased when regulatory interest rates increased, specifically, lending rates increased from 13.17% in Q3/2010 to 18.02% in Q2/2011. Thus, the period 2009Q1-2011Q4 showed most positive relationship between the regulatory interest rate and the market interest rate, when the operating interest rate increased, the market interest rate increased.

- Period 2012Q1-2016Q4

The period 2012Q1-2014Q4 showed a downward trend of the regulatory interest rate and the market interest rate. Specifically, in Figure 1, the refinancing interest rate decreased from 14% in Q1/2012 to 6.5% in Q4/2014. Because in 2012, when inflation was controlled and gradually reduced, to support production and business, the SBV gradually adjusted the refinancing interest rate. Lowering the operating interest rate helped to lower the costs of credit institutions and indirectly contributed to lowering lending rates in the market. For example, during the period 2012Q1-2014Q4, lending interest rates in the market tended to decrease from 15.3% in Q1/2012 to 8.16% in Q4/2014.

Entering the period 2015Q1-2016Q4, the chart shows that the regulatory interest rate was kept at a stable level of 6.5% (State Bank of Vietnam), along with that, the market interest rate tended to gradually decrease from 7.23% in Q1/2015 to 6.96% in Q4/2015 and remained stable until the end of 2016. Thereby, the period under consideration showed a positive relationship between regulatory interest rates and market interest rates.

- Period 2017Q1-2022Q4

Figure 1 shows that from Q1/2017 to Q4/2019, regulatory interest rates tended to decrease from 6.5% to 6.25% and remained stable until Q2/2019, then continued to decrease to 6.2% in Q3/2019, continued to decrease to 6.0% in Q4/2019. Because in the period 2017Q1-2019Q4, global economic growth was slowing down, the recovery process in trade, production and investmen wass losing momentum. The US-China trade war was complicated, FDI inflows recovered compared to 2018, but remained weak, investment confidence decreased. The regulatory interest rate level was maintained stable and gradually decreased, in line with the domestic and foreign economic context. However, in terms of lending interest rates in the market, there were fluctuations and mainly an upward trend during this period.

In 2020, the global economy was affected significantly by the outbreak of the Covid-19 pandemic. In the period of 2020-2021, the SBV maintained low interest rates, combined with abundant liquidity management in the money market. As a result, by the end of November 2021, the average VND deposit and lending interest rates of credit institutions decreased by about 0.51%/year and 0.81%/year respectively compared to the end of 2020 after decreasing by about 1%/year in 2020. The average lending interest rate for priority sectors according to the Government's policy is 4.3%/year (lower than the prescribed ceiling rate of 4.5%/ year).

2022 marks the recovery of the economy when the Covid-19 pandemic is basically under control. The regulatory interest rate remained stable at 4% in the first two quarters of the year, then increased to 5% in the third quarter and to 6% in the fourth quarter. Along with that, market interest rates also showed an increasing trend, specifically, lending interest rates increased on a quarterly basis, from 7.52% in Q1/2022 to 8.52% in Q4/2022. Thereby showing the positive relationship between refinancing interest rate (representing operating interest rate) and lending interest rate (representing market interest rate).

3. The relationship between regulatory interest rates and market interest rates in Vietnam in the period 2005 - 2022: Perspectives from quantitative analysis

3.1. Research data

To examine the relationship between regulatory interest rates and market interest rates in Vietnam in the period 2005 – 2022, the research team collects data on lending rates (*LSCV- represents the market interest rates*) and refinancing interest rate (*LSTCV- represents the regulatory interest rates*) in the period 2005 - 2022, quarterly statistics, from 2005Q1 to 2022Q4 with 72 observations. However, due to many macroeconomic fluctuations in the period 2005-2022, the research team runs an econometric model showing the relationship between lending interest rate and refinancing interest rate in 3 stages: 2005Q1- 2011Q4; 2012Q1- 2016Q4; 2017Q1- 2022Q4.

Besides, in the model, the research team uses the trend variable T for the period 2012Q1-2016Q4; simultaneously using trend variable T and dummy variable D for the period 2017Q1-2022Q4.

3.2. Research methodology

The research team uses a linear regression model to analyze the relationship between regulatory interest rates and market interest rates. The general construction model has the form:

$$\mathbf{LSCV = C(1) + C(2)*LSTCV + C(3)*T + C(4)*D + e}$$

With e is random noise

The procedure is taken as follows:

Step 1: Use Eviews 8 software to run the model with collected secondary data.

Step 2: Check the statistical significance of the regression coefficients with the explanatory variables and the statistical significance of the regression model with significance level α=0.05.

A regression coefficient is statistically significant if:

- Prob < α=0.05
- Prob(F-statistic) < α=0.05

Step 3: Check the explainability of the model through the coefficients R–squared and Adjusted R–squared

A model is explanatory (fit) if:

- R–squared > 0.6
- Adjusted R–squared > 0.6

Step 4: Check the model's defects with α=0.05.

A model is good (*can be used for analysis*) when the regression coefficients in the model are statistically significant, and the R–squared, Adjusted R–squared should not have autocorrelation and heteroskedasticity. At the same time, the residuals of the model should follow the standard normal distribution.

In the study, the authors used tools on Eviews 8 to check for these defects. Specifically:

- Breusch-Godfrey test to check autocorrelation. The model does not have an autocorrelation defect at some level p if Prob (F-statistic) and Prob (Obs *R-squared) > α=0.05.
- Breusch-Pagan-Godfrey to test heteroskedasticity. The model is not subject to heteroskedasticity if Prob (F-statistic) and Prob (Obs*Chi-squared) > α=0.05.
- Jarque - Bera to check if the residuals of the model follow the standard normal distribution. The residuals of the model are normally distributed if Prob (Jarque - Bera) > 0.05.

When the above conditions are satisfied, the model results are estimated and analyzed.

3.3. Examining the relationship between regulatory interest rates and market interest rates in Vietnam in the period 2005-2022

The econometric model is used to explain the impact of regulatory interest rates on market interest rates for the period 2005-2022. The data is collected quarterly, the results are shown in *Table 1*.

Table 1: Impact of regulatory interest rates on market interest rates in Viet Nam in the period 2005-2022

Period		2005Q1- 2011Q4	2012Q1-2016Q4	2017Q1-2022Q4
Estimated coefficient	C	6.5987	14.6286	1.6671
	LSTCV	0.7398	0.5943	0.2269
	T		-0.2613	0.0804
	D			-0.4347
Prob	C	0.0000	0.0000	0.2459
	LSTCV	0.0000	0.0000	0.0182
	T		0.0000	0.0001
	D			0.0511
R- squared		0.8182	0.9720	0.6376
Adjusted R-squared		0.8112	0.9687	0.5833
Prob (F-Statistic)		0.000000	0.000000	0.000118

Source: Model test results

Check model fit

- Period 2005Q1-2011Q4:

+ The coefficients are all statistically significant because the coefficient Prob (LSTCV)=0.0000 < 0.05; Prob (C)=0.0000 < 0.05

+ The regression model is suitable, due to the coefficient Prob (F-statistic) = 0.0000 < 0.05

+ The coefficients of determination R-squared and Adjusted R-squared are , respectively 0.8182; 0.8112 > 0.6

- Period 2012Q1-2016Q4:

+ The coefficients are all statistically significant because the coefficient Prob (LSTCV)=0.0000 < 0.05; Prob (C)=0.0000 < 0.05; Prob (T)= 0.0000 < 0.05

+ The regression model is suitable, due to the coefficient Prob (F-statistic) = 0.000000 < 0.05

+ The coefficients of determination R-squared and Adjusted R-squared are , respectively 0.9720; 0.9687 > 0.6

- Period 2017Q1-2022Q4:

+ The coefficients are all statistically significant because the coefficient Prob (LSTCV)=0.0182 < 0.05; Prob (T)=0.0001 < 0.05

+ The regression model is suitable, due to the coefficient Prob (F-statistic) = 0.000118 < 0.05

+ The coefficients of determination R-squared = 0.6376 > 0.6

Table 2: Breusch- Godfrey Serial Correlation LM Test (lags = 2)

Period	**2005Q1- 2011Q4**	**2012Q1-2016Q4**	**2017Q1-2022Q4**
Prob. F	0.0770	0.7741	0.1433
Prob. Chi-Square	0.0676	0.7142	0.1021

Source: Model test results

According to Table 2, the Prob. F and Prob. Chi-Square in all 3 models corresponding to 3 research periods are > 0.05. The models do not have autocorrelation defects.

Table 3: Heteroskedasticity Test (White)

Period	**2005Q1- 2011Q4**	**2012Q1-2016Q4**	**2017Q1-2022Q4**
Prob. F	0.3785	0.2483	0.9404
Prob. Chi-Square	0.3510	0.2293	0.9071
Prob. Chi-Square	0.3689	0.3165	0.9777

Source: Model test results

According to Table 3, the Prob values. F and Prob. Chi-Square in all 3 models corresponding to 3 research periods are > 0.05. The models are not flawed with variable variance.

The residuals of all 3 models follow a normal distribution, the Prob (Jarque-Bera) values in all 3 models correspond to the 3 periods under consideration > 0.05

Table 4: Normal distribution residuals

Period	**2005Q1- 2011Q4**	**2012Q1-2016Q4**	**2017Q1-2022Q4**
Prob (Jarque-Bera)	0.3160	0.9534	0.7726

Source: Model test results

Regression model and analysis of model results

The results of regression data analysis using Eviews8 software in *Table 1* have shown the impact of regulatory interest rates on market interest rates for the period 2005-2022 with quarterly data series with regression model as follows:

+ *Period 2005Q1-2011Q4*

LSCV = 6.5987 + 0.7398*LSTCV

The results of the regression model show that:

During the period 2005Q1-2011Q4, market interest rates are affected by regulatory interest rates. Specifically, C(2)=0.7398 > 0 shows a positive relationship between the regulatory interest rate and the market interest rate, when the regulatory interest rate increases by 1%, the market interest rate increases by 0.7326%.

+ *Period 2012Q1-2016Q4*

LSCV = 14.6286 + 0.5943*LSTCV – 0.2613T

The results of the regression model show that:

During the period 2012Q1-2016Q4, market interest rates are affected by regulatory interest rates. Specifically, C(2)=0.5943 > 0 shows that there is a positive relationship between the regulatory interest rate and the market interest rate, when the regulatory interest rate increases by 1%, the market interest rate increases by 0.5943% *(with conditions of other factors remain unchanged)*. The model also shows that lending interest rates tend to decrease during this period, the coefficient of trend variable T is (-0.2613). The significance of the coefficient R-squared=0.9687: The model explains 96.87% of the volatility of market interest rates.

+ Period 2017Q1-2022Q4

LSCV = 1.6671 + 0.2269*LSTCV + 0.0804*T – 0.4347*D

The results of the regression model show that:

In the period 2017Q1-2022Q4, market interest rates are affected by regulatory interest rates. Specifically, C(2)=0.2269 > 0 shows that there is a positive relationship between the regulatory interest rate and the market interest rate, when the regulatory interest rate increases by 1%, the market interest rate increases by 0.2269% *(with the conditions of other factors remain unchanged)*. The model also shows that lending interest rates tend to increase during this period, the coefficient of the propensity variable T is (0.0804), and there is a difference. The significance of the coefficient R-squared=0.6376: The model explains 63.76% of the volatility of market interest rates.

4. Some exchanges and discussions

The period 2005-2022 shows many fluctuations of Vietnam's macro economy. In particular, the period 2019-2021 shows the volatility of the global economy in general and Vietnam in particular when the Covid-19 pandemic broke out. While the world was facing an economic crisis, many countries fell into a situation of escalating inflation, Vietnam kept a stable inflation level thanks to macroeconomic policies, including the policy of controlling inflation. stable interest rates. Entering 2023, the economy has recovered again, but there are still certain difficulties and barriers. Faced with that situation, the research team made a number of discussions to improve the efficiency of interest rate management for the State Bank as follows:

The first, according to the monetary policy transmission mechanism of the countries, it is necessary to determine the official interest rate in regulatory monetary policy. The problem posed in the current regulatory interest rates, the State Bank should choose and use the refinancing interest rate as the key interest rate in regulatory monetary policy to properly reflect the movements of the money market, in line with the requirements of the monetary policy and the integration is getting stronger.

The second, the State Bank should choose the refinancing interest rate to represent the regulatory interest rate. In fact, for a long time, the ceiling lending interest rate for commercial banks did not exceed 150% of the basic interest rate, which has gradually lost the reference and market orientation of the basic interest rate. Therefore, the choice of interest rate for the State Bank in the market as the regulatory interest rate can reflect the relationship between supply and demand for capital in the market. In which, the refinancing interest rate is considered as the most appropriate interest rate that can be used as the regulatory interest rate of the State Bank in the coming time. Because this is the interest rate decided by the State Bank in the process of refinancing credit institutions. This interest rate, which has clear signs, orients the economy in the management of monetary policy by the State Bank. And the experience of many countries around the world using the refinancing interest rate as an effective regulatory interest rate.

The third, the State Bank needs to develop and adhere to the principles of monetary policy through reasonable determination of goals and commitment to pursuing goals in the medium and long term. Continuing to pursue the goal of stabilizing the macro-economy, in order to create a foundation for the determination of regulatory interest rates close to reality and improve the performance of monetary policy. The monetary policy operation process needs to be flexible but consistent in order to promote the market orientation of the regulatory interest rates, thereby building public trust.

The fourth, The regulatory interest rate should be based on the real market interest rate. Thereby overcoming the limitations of current regulatory interest rates, improving the stability in the operation of the interbank market. In order to implement the regulatory interest rate management mechanism in a new direction, the State Bank needs to experiment and choose policy responses so that the determination of the regulatory interest rate ensures transparency and clarity. The State Bank's interventions in the market need to ensure guidance, in order to promote the autonomy of member banks.

The fifth, The SBV needs to strictly control credit growth according to the set target, not let too high credit growth because it will lead to the risk of inflation in the economy, control credit growth lower than mobilized capital growth, control credit for real estate business, strictly control the safety ratio in business of commercial banks.

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Syariah Governance and Disclosure Islamic Corporate Social Responsibility: A Comparative Study of Indonesian and Malaysian Islamic Banking

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Abstract
The existence of the Sharia Supervisory Board in the Sharia banking GCG structure is a unique feature that distinguishes it from the GCG structure of conventional banks. The inconsistency of the results of previous research related to the relationship between GCG and CSR disclosure is the motivation of this study, in addition to the differences in the progress of Indonesian and Malaysian Islamic banks. The research population of Islamic banking is listed on the Indonesia Stock Exchange and the Malaysia Stock Exchange. Research period on 2016 – 2019 before covid 19 pandemic. The research sample was determined based on purposive sampling, 12 Islamic banks in Indonesia and 14 Islamic banks in Malaysia was selected. The method of analysis is multi group using Partial Least Squares. The results of this study provide empirical evidence that the Sharia Supervisory Board, Board of Commissioners and Board of Directors have not succeeded in playing a role in increasing I-CSR disclosure except for the Independent Board of Commissioners and Independent Board of Directors. The results of the study also have not shown any differences in the influence of GCG on I-CSR in Indonesian and Malaysian Islamic banking.

Keywords: Syariah Supervisory Board, Syariah Governance, Disclosure, Islamic, Corporate Social Responsibility

1. Introduction

The establishment of Bank Muamalat which was initiated by the Majlis Ulama Indonesia, the Government and Indonesian Muslim Scholars in 1991 marked the beginning of the establishment of Islamic banking in Indonesia. However legally, the establishment of an Islamic bank is marked by the issuance of Government Regulation no. 73 of 1992 concerning banks based on profit sharing. The formation of the Islamic banking system is based on Islamic law, therefore this system is based on the prohibition of the Islamic religion to borrow or lend money by collecting interest or what is known as usury and prohibiting investment in businesses that are categorized as haram.

Indonesia's population, which is predominantly Muslim, even Indonesia has the largest Muslim population in the world, it is hoped that the development of Islamic banks will run smoothly. However, in reality the development of Indonesian Islamic banks is currently not encouraging. Malaysia, which has a smaller Muslim population than Indonesia, however, the development of Islamic banking is far more advanced than Indonesia. Based on data obtained from finance.detik.com, it is known that the size of Islamic bank assets in Indonesia is US$ 35.62 billion, while the size of Islamic bank assets in Malaysia is US$ 423.2 billion. In this case, Indonesian Islamic banks are still far behind compared to Malaysian Islamic banks, with an asset ratio of approximately 1 in 10.

One of the factors causing obstacles to the development of Islamic banks in Indonesia is that most people still have the image that Islamic banking operations are the same as conventional banks, only using Islamic terms (Rachmawati and Widana, 2019), such as interest being replaced with profit sharing terms. As a result, the level of public trust in using Islamic banking services has not met expectations. In order to anticipate this, it is necessary to build public trust in sharia banking operations.

One way to increase trust in interested parties is disclosure (El-Halaby et al. 2018). Disclosure is the presentation of information regarding an activity/operation in an annual report or a separate report. The presentation of bank operational information in accordance with Islamic sharia in this study is referred to as Disclosure Islamic Corporate Social Responsibility (I-CSR).

Disclosure I-CSR is one of the media that can be used by banks in conveying information on Islamic banking activities that are in accordance with Islamic law. The hope is that I-CSR disclosure can increase trust in Islamic banking, this is based on the argument of Shim et al. (2017) which states that I -CSR can increase good reputation and a positive image for banking. Diyani and Oktapriana (2019) also show that I-CSR increases the good reputation of Islamic banking in Indonesia. CSR activity is one of the main obligations of Islamic banks as a form of accountability of Islamic banks to God and humans. However, Nobanee and Ellili (2016) revealed that the level of CSR disclosure in the annual reports of Islamic banks registered in the UAE is lower than that of conventional banks. Nugraheni and Khasanah, (2019) revealed that the level of CSR disclosure in Indonesia is also still low.

One of the factors that can affect the extent of corporate information disclosure is the implementation of good corporate governance, known as Good Corporate Governance (GCG). However, good corporate governance can only be realized if it is supported by a good GCG structure (Stuebs and Sun, 2015). Therefore, the company's GCG structure is believed to be able to encourage CSR disclosure (Fahad and Rahman, 2020; El Gammal et al. 2019). However, research results still do not provide consistent GCG structure capabilities in increasing CSR disclosure. GCG structures such as the Board commissioners are able to encourage CSR disclosure (Alabdullah et al. 2019; Chao, 2019), the opposite is shown by Estiarto and Hariadi (2023). The board of independent commissioners plays an important role in increasing I-CSR (Chijoke-Mgbame et al. 2020; Zaid et al. 2019) this should be shown by Listyaningsih et al. (2018) The audit committee is able to influence the level of CSR disclosure (Amin et al. 2 021) the opposite was shown (Listyaningsih, et al. 2018)

The GCG structure consists of elements of the general meeting of shareholders, the board of commissioners, the board of directors and the audit committee. In addition to these elements, sharia GCG has a uniqueness that is not owned by conventional banking, that is the existence of a Sharia Supervisory Board (SSB) in the GCG structure. The existence of inconsistencies in the ability of GCG structural variables in increasing CSR disclosure has become a driving force for reviewing the relationship between GCG and I-CSR, especially in sharia banking. This research will also compare the ability of GCG sharia in increasing I-CSR between Indonesian and Malaysian Islamic banking considering that these two countries are allied and both have a majority Muslim population but differ in the progress of Islamic banking.

2. Literature Review

2.1 Islamic CSR

Islamic banks have different principles and practices from conventional banks. Islamic financial institutions such as Islamic financial institutions must function according to Islamic sharia rules and principles (Fakhruddin et al. 2022). Along with the increasing implementation of Corporate Social Responsibility (CSR) activities in the business world, the company's desire to make social responsibility reports is increasing. The term social responsibility report in Islamic banks has different terms but with the same intent, that is Islamic CSR (Litard et al. 2019), Islamic CSR index (Putri and Mardian, 2020), Islamic CSR reporting (Nani, 2019). Disclosure I-CSR refers to the standards issued by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI).

Disclosure I-CSR allows banking not only to focus on the economy, but also on a spiritual perspective. Disclosure I-CRS is an extension of social reporting which is not only in the form of the great desire of the whole community for the role of companies in the economy is related to a spiritual perspective. I-CSR Disclosure has a disclosure theme consisting of 6 (six) themes, that is finance and investment, products and services theme, employees theme, society theme, environment and corporate governance. Details of each theme can be seen in the attachment to this study.

2.2 Syariah Good Corporate Governance

The theoretical framework shows that good GCG contributes to the quality and credibility of information presentation by integrating financial and non-financial information in one report (Chouaibi et al. 2022), therefore the existence of a GCG mechanism can affect the level of disclosure. The GCG structure consists of a general meeting of shareholders, a board of commissioners, a board of directors and an audit committee. In addition to the board of commissioners, board of directors and audit committee, the sharia GCG structure has uniqueness that is not owned by conventional companies which also play an important role in the corporate governance structure, that is SSB.

SSB is an independent body entrusted with the task of directing, reviewing and supervising Islamic banking activities. In Bank Indonesia Regulation number 11/33/PBI/2009 it is stated about the responsibilities and duties that must be carried out by the SSB are to provide advice and suggestions to all directors and supervise bank activities so that they are in line with sharia principles. SSB's responsibilities and duties include among others:

a. Ensuring and assessing the products issued by the bank comply with sharia principles and operational guidelines.
b. Supervise the products developed by the bank so as not to deviate from the DSN-MUI fatwa.
c. Submit a request for a fatwa to the DSN-MUI to issue a legal fatwa on new Islamic bank products.
d. Supervise the mechanisms for channeling and collecting funds as well as services owned by Islamic banks on a regular basis so as not to deviate from sharia principles.
e. Request the data and information from bank work units in carrying out their duties related to sharia aspects.

2.3. Hypothesis Development

2.3.1 Sharia Supervisory Board and Disclosure Islamic CSR

The existence of the Sharia Supervisory Board (SSB) is the uniqueness of the Sharia GCG of Islamic banks which is different from conventional banks. SSB is an independent body appointed by the DSN-MUI whose job is to direct, consult, advise, evaluate and supervise bank activities to ensure that each activity is carried out in accordance with sharia principles as determined by the DSN-MUI fatwa. The SSB is also tasked with providing opinions regarding the purity of the implementation of sharia principles by sharia banks, both in the overall operation of sharia banks and the development of certain products and services following the DSN-MUI fatwa. In addition, SSB is responsible for providing opinions on sharia aspects regarding findings or deviations found by the internal auditors of sharia banks for follow-up. All results of SSB supervision must be reported by the sharia supervisory board to the DSN-MUI and Bank Indonesia every semester. Winarsih and Robianto, (2020) show that there is a positive relationship between the number of SSB and the level of CSR disclosure. Based on this, hypotheses 1 and 2 are as follows:

H1 *Syariah Supervisory Board* has positive effects on I-CSR *disclosure* in Indonesia
H2 *Syariah Supervisory Board* has positive effects on I-CSR *disclosure* in Malaysia

2.3.2 Commissioners and Disclosure Islamic CSR

According to agency theory, the board of commissioners is entrusted with protecting the rights of shareholders and other stakeholders, so that the board of commissioners must act according to the wishes and needs of stakeholders. One of the needs of stakeholders is the implementation of social responsibility carried out by the company. Legitimacy theory also explains that social responsibility carried out by companies is the fulfillment of community demands and what is required by regulations. For sharia issuers, the implementation of CSR must be in accordance with sharia principles. Hafidzi (2019) shows that increasing the number of commissioners can encourage an increase in CSR disclosure. Based on this description, the research hypothesis can be formulated as follows:

H3 Board of commissioners has positive effects on d*isclosure* I-CSR in Indonesia
H4 *Board of Directors* has positive effects on d*isclosure* I-CSR in Malaysia

2.3.3 Independent board of Commissioners and Disclosure Islamic CSR

According to agency theory, the relationship between the owner and the agent is difficult to create because of the different interests of the two parties. Therefore, the shareholders (owners) will delegate the authority they have to the board of commissioners to oversee management activities within the company. One of the members of the board of commissioners consists of independent commissioners. Independent commissioners have the function of supervising management and ensuring company compliance with applicable laws, including disclosure of social responsibility required by law, so that the existence of independent commissioners will provide pressure and encouragement to management in terms of disclosure of corporate social responsibility.

Stakeholder theory explains, to maintain the success of the company, management must be able to implement processes that satisfy stakeholders. In line with the theory of legitimacy, it explains that the sustainability of a company is highly dependent on the legitimacy of the community where the company is located, one of which can be realized through the implementation of social responsibility to the community. The majority of Indonesia's population is Muslim, so the company's sustainability cannot be separated from the support and cooperation of the Muslim community who are the main shareholders and consumers of the company. Therefore, an independent commissioner as a public representative/stakeholder in a company will pay more attention to CSR disclosure. The more the number of independent commissioners, the more independent commissioners can make decisions more objectively to protect the rights of stakeholders, that is through wider CSR disclosure. Dharmawan and Hermawan (2022) also show that the size of the independent board of commissioners plays a significant role in CSR disclosure. Based on this description, the research hypothesis can be formulated as follows:

H5 Independent board of Commissioners has positive effect on d*isclosure* I-CSR in Indonesia
H6 Independent board of Commissioners has positive effect on d*isclosure* I-CSR in Malaysia

2.3.4 The comparison of Indonesian and Malaysian GCG on I-CSR Disclosure

GCG is guided by bank regulations issued by each country. Indonesia's GCG system adheres to a two-tier system while Malaysia adheres to a one-tier system. Fujianti et al. (2022) shows that there are differences in the role of GCG in Indonesia and Malaysia in disclosing the level of bank risk. Based on this, the hypothesis is as follows:

H7 There are the differences in the influence of the Sharia Supervisory Board on I-CSR d*isclosure* in Indonesia and Malaysia
H8 There are the differences in the influence of the board of Commissioners and the board of Directors on I-CSR d*isclosure* in Indonesia and Malaysia
H9 There are differences in the influence of the Independent Board of Commissioners and the Independent Board of Directors on Indonesia's I-CSR disclosure between Indonesia and Malaysia

3. Method of the study

The research population is Islamic banking listed on the Indonesia Stock Exchange and the Malaysia Stock Exchange. The research period is from 2016 to 2019. The selection of the research year range is to avoid data bias due to the influence of the covid 19 pandemic. The research sample is determined based on purposive sampling with criteria (a) presenting an annual report (b) presenting financial reports, (c) having complete data. Based on the sampling criteria, 12 Islamic banks in Indonesia and 14 Islamic banks in Malaysia were selected.

The measurement of the I-CSR variable is based on the Islamic Social Reporting Index (ISRI) set by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI). ISRI items consist of 6 dimensions, (1) finance and investment, (2) products and services theme, (3) employees theme, (4) society theme, (5) environment and (6) corporate governance. The six dimensions of CSR are divided into 38 sub-dimensions. Meanwhile, the I-CSR index is measured using the content analysis method where 1 is given if the sub-dimensional is disclosed and 0 if it is not disclosed. The I-CSR disclosure score is calculated based on the number of items disclosed per year

SSB, Board of Commissioners (BOC) and Board of directors (BOD) are measured by the Independent of board of directors (IBOD) which is measured by the number of members. In this study also used control variables, that are size and profitability. Size (TA) is measured by the natural logarithm of total assets and profitability (PB) is measured by return on assets. The method of analysis is multi-group. The model developed in this study is as follows:

$$Y = \beta 0 + \beta 1\ BOD + \beta 2\ IBOD + \beta 3\ SSB + \beta 4\ TA + \beta 5\ PB + e \ldots\ldots \quad \text{Model 1}$$
$$Y = \beta 0 + \beta 1\ BOD + \beta 2\ IBOD + \beta 3\ SSB + \beta 4\ TA + \beta 5\ PB + e \ldots\ldots \quad \text{Model 2}$$

$$t = \frac{\text{Path}_{\text{sample1}} - \text{Path}_{\text{sample2}}}{\sqrt{\text{S.E.}^2_{\text{sample1}} + \text{S.E.}^2_{\text{sample2}}}} \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad \text{Model 3}$$

4. Result and Discussion

The I-CSR disclosure level of Indonesian Islamic banks in terms of finance and investment is on average 5.02 while Malaysia is 5.07, in terms of product and services themes Indonesia and Malaysia are on average the same, that is 2, from the Indonesian employee theme the average is 4 .98 while Malaysia is 4.91, in terms of environment Indonesia averages 0.86 while Malaysia is 2.25, and in terms of corporate governance, Indonesia averages 2.55 while Malaysia is 2.02

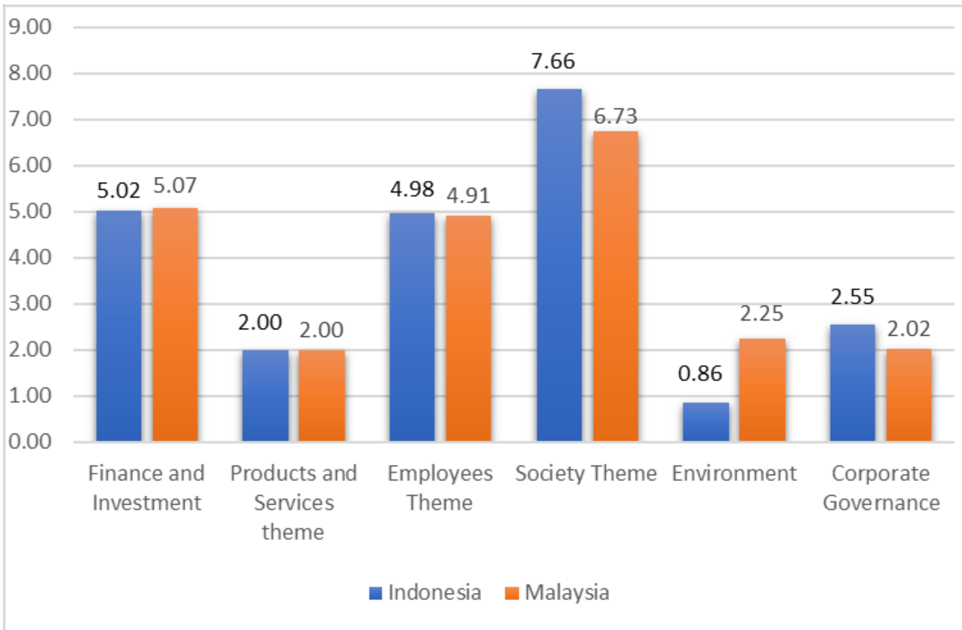

Figure 1: I-CSR *disclosure* level of Indonesian and Malaysian Sharia Bank

The test results show that profitability functions as a control variable in Indonesian Islamic banking. Other test results show that both profitability and size function as control variables in Malaysian Islamic banking. The results of the hypothesis test show that H1 is rejected, meaning that SSB has not played a significant role in increasing I-CSR in Indonesian Islamic banks. The H2 test also shows that there is no significant SSB for I-CSR in Malaysian Islamic banking. This was revealed by Nugraheni and Khasanah (2019) that the majority of SSB members have expertise in one area of knowledge, that is muamalah, therefore SSB only controls operations and products that are in accordance with Islamic law. As for I-CSR, there are many other activities besides those related to employees' themes, society themes, environment and corporate governance. Bank Indonesia Regulation number 11/33/PBI/2009 carried out by the SSB stipulates that the SSB is tasked with conveying advice and suggestions to all directors and supervising bank activities so that they are in line with sharia principles. The results of this study are in line with Bastina and Bernawati, 2019 which have also failed to show the significance of SSB with I-CSR

Table 1: Indonesian Sharia Banking Hypothesis Test Result

			Oginal Sample (O)	Sample Mean (M)	Standar Deviation (STDEV)	T Statistics (O/STDEV)	P Value
Sharia Supervisory Board	--->	I-CSR	-0.003	0.010	0.134	0.023	0.982
Board of Commissioners	--->	I-CSR	-0.193	-0.152	0.217	0.889	0.375
Independent Board of Directors	--->	I-CSR	0.623	0.627	0.158	0.941	0.000 **
Size	--->	I-CSR	-0.008	0.002	0.130	0.063	0.950
Profitability	--->	I-CSR	-0.280	0.269	0.098	2.863	0.004 **
** Significance 1 %							

The results of testing the H3 hypothesis show that BOC has no role in increasing I-CSR disclosure in Indonesian Islamic banking. The results of the H4 test also show the same thing, meaning that BOD is not related to I-CSR in Malaysian Islamic banking. The results of this study are in line with Novitasari and Bernawati (2020); Kirana and Prasetyo (2021) which show that there is no significant effect of BOC on I-CSR. In accordance with agency theory, the BOC functions as a supervisor of financial performance, for this reason the BOC views the use of profits for company operations as more profitable than carrying out social activities (Rivandi and Putra, 2019) so that the existence of the BOC has not been significant in encouraging an increase in Islamic banking I-CSR disclosure. The results of this study are inconsistent with the results shown by Harvidiyana and Dianawati (2020).

Table 2: Malaysia Sharia Banking Hypothesis Test Result

			Oginal Sample (O)	Sample Mean (M)	Standar Deviation (STDEV)	T Statistics (O/STDEV)	P Value
Syariah Supervisory Board	--->	I-CSR	0.015	0.002	0.101	0.150	0.881
Board of Directors	--->	I-CSR	0.093	0.090	0.107	0.876	0.382
Independent Board of Directors	--->	I-CSR	0.257	0.266	0.117	2.00	0.028 *
Size	--->	I-CSR	0.394	0.389	0.088	4.493	0.000 **
Profitability	--->	I-CSR	-0.339	0.269	0.111	3.054	0.004 **
** Significance 1 %							
* Significance 5 %							

The results of the H5 test show that Indonesia's IBOD is significant with I-CSR disclosure as well as H6 showing the same thing as Malaysia. The results of this study are in line with research by Garas and El Massah, (2018); Dakhli (2021) and contradicts Fallah and Mojarrad (2019). The independent Board of Commissioners has the main responsibility to encourage the implementation of good GCG principles. This is done by encouraging other IBOD members to be able to carry out their supervisory duties and provide advice to directors effectively and be able to provide added value to the company. IBOD Ensures that the company complies with applicable laws and regulations as well as the values applied by the company in carrying out its operations. The existence of an independent commissioner can encourage the value of company or banking operations to be included in sharia values. This encourages the existence of DKI/IBoD to increase I-CSR disclosure.

Table 3: The Comparison of Indonesian and Malaysian Banking Hypothesis Result

Variable	Description	Indonesia	Malaysia	T count
Sharia Supervisory Board	Line Coefficient	0.023	0.150	-0.757
	Erorr Standard	0.134	0.101	
Board of Commissioners/Board of Directors	Line Coefficient	0.889	0.876	0.054
	Erorr Standard	0.217	0.107	
Independen board of Commissioners/Independent Board Directors	Line Coefficient	0.000	0.028	0.142
	Erorr Standard	0.158	0.117	

The results of the H7.8.9 test show no significant. This shows that there is no difference in the influence of SSB, BOC/BOD, IBOD on I-CSR between Indonesian and Malaysian banks. Where SSB has no effect, BOC and BOD also have no effect, while IBOD has the same effect.

5. Conclusion

The existence of SSB in the GCG sharia structure has not succeeded in playing a role in increasing I-CSR as well as BOC and BOD. IBOD Indonesia and IBOD Malaysia provide empirical evidence of their role in increasing I-CSR Disclosure. In addition, the results of this study also do not show differences in the role of sharia GCG between Indonesian and Malaysian Islamic banking. This has implications that need to be studied further whether the existence of I-CSR is able to improve the performance of Islamic banking, is it also able to build a sharia image so as to generate trust in the community. Is the sharia image differentiating the progress of Indonesian and Malaysian Islamic banks.

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Investigating the Effect of Strategic Planning on the Financial Performance of SMEs in Namibia

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Abstract

Small and Medium Enterprises (SMEs) are hypothesised to play a critical part and serve as a crucial source of income and employment creation in many economies. SMEs contribute about 12% of the Namibian Gross Domestic Product (GDP) and provide employment or income to about 160 000 Namibian citizens. Namibia has witnessed remarkable growth in the number of SMEs in recent decades, with over 28 000 formally registered SMEs. However, most SMEs in Namibia experience difficulties, some of which may threaten their existence. Numerous external and internal factors impact business performance: failure to develop strategic plans, lack of finance, poor financial management, and lack of suitable management skills. The literature argues that financial performance challenges faced by SMEs can be mitigated with a clear and well-articulated strategic plan. This study set out to investigate the effect of strategic planning on the financial performance of SMEs. The results confirm that strategic planning has a positive effect on the financial performance of SMEs. However, many SMEs indicated that they had never done strategic planning. The study also found that Issue-based strategic planning is a commonly used strategic planning model. Policy implications indicate that although strategic planning is found to enhance SMEs' financial performance, the majority of them lack an optimal mix of strategic planning elements. The study recommends using strategic planning to set clear financial performance targets and for relevant stakeholders to introduce policies that help equip SME owners/managers with the optimal mix of business management skills.

Keywords: Strategic Planning, Small and Medium Enterprises, Financial Performance, Windhoek, Namibia

1. Introduction and Background

The SMEs are hypothesised to play an imperative role in many countries, particularly those of developing economies, by providing jobs, contributing to a country's Gross Domestic Product (GDP), and developing entrepreneurial skills and Namibia is no exception. Namibia has witnessed remarkable growth in the establishment of SMEs in recent decades. Recent statistics show that there are about 18 000 formally registered SMEs in Namibia. In Namibia SMEs contribute a great deal to the national economy by creating employment, assisting with the realisation of national agendas (e.g., NDP5) as well as adding value to the country's GDP (Nghishekwa, 2019). Similarly, according to the "National Policy on Micro, Small and Medium Enterprises (MSMEs)" in Namibia (2016), besides contributing to the economy, SMEs also assist in the realisation of Namibia`s vision of becoming industrialised by 2030. Even though SMEs are essential to the Namibian economy, studies have shown that most SMEs in Namibia face difficulties during the first twenty-four months of their inception, and in many instances, before full establishment (Kambwale, Chisoro & Karodia, 2015). Similarly, in South Africa, five out of seven (71%) new SMEs fail within the first year of their operation (Cant, Erdis & Sephapo, 2014).

SMEs in Namibia operate in challenging economic environments (e.g., insufficient resources and intense competition) and are, therefore, defined by extreme volatility (Otieno, Namusonge & Mugambi, 2017). Many external and internal factors such as failure to develop strategic plans, poor business plans, absence of supporting institutions, lack of finance, inventory control, poor financial management, lack of experience, and poor planning impact business performance (David, 2007). It is, therefore, vital for SMEs to develop and implement strategic planning as this determines the future of businesses by assisting with the adaptation of companies to changing environments (Pushpakurami & Watanabe, 2009). Grant (2016) describes strategic planning as a process that involves the alignment of opportunities and demands of the external environment with the capabilities and internal design to achieve a competitive advantage.

Research from countries where SMEs are successful (mainly developed countries) shows that, like large enterprises, SMEs practice strategic planning and are, therefore, more successful than those in developing countries (Otieno, 2019). For example, in a study done in Germany, it was found that more than 70% of SMEs identified strategic planning in a business as vital in enhancing business performance. Mamula and Popovic-Pantic (2015) further support this, by suggesting that about 80% of managers who claim to have strategic planning are running successful businesses. Measuring the performance of a business is influenced by two basic requirements of how a business should be run namely financial performance and strategic objectives (Dobrovic, Lambovska, Gallo & Timkova, 2018). Financial performance deals with the traditional economic measures that can contribute to the sustainability of a business if they are appropriately managed. Whereas strategic objectives deal with the internal and external factors that companies need to balance to become sustainable, including the business' operational goals.

Strategic planning is a process whereby organisations develop a plan for achieving long-term organisational goals and, in essence, the organisation's game plan (David, 2007). Existing literature validates that SMEs' financial performance challenges can be mitigated with a clear and well-articulated strategic plan (Gomera, Chinyamurindi & Mishi, 2018). Hough, Thompson, Strickland III, and Gamble (2011), aver that the best quantitative evidence of its working strategy comes from its financial results. Financial performance is measured by looking at how well or poorly the business is performing financially and involves evaluating the overall financial position and condition of the company (Anthony, Hawkins & Merchant, 2011). The most important measures of financial performance are profit margins, return on investment (ROI), operating cash flow, and liquidity. There is no reliable information on the exact number of SMEs that ceased to operate in Namibia at any given point, however, from 2015 to 2016, a total number of 1 719 SMEs ceased to operate or remained dormant (Sheehama & Shihomeka, 2017). This is about 11% of the roughly 15 000 SMEs that were formally registered in 2016. However, as McIntyre (2020) reports, statistics from the U.S Bureau of Labour Statistics reveal that about 20% of SMEs fail in their first year, 30% within two years, and about 50% fail within five years globally. The information also shows that 85% of SMEs failed in Africa due to various constraints during their development phase.

Several studies on the impact of strategic planning on the performance of SMEs have been carried out mainly in developed countries. For example, Salman and Normalini (2020), Ibegbulem and Okorie (2018), Campbell, (2010), Sandada, Pooe and Dhurup (2014), Jayawarna and Dissanayake (2019) suggest that SMEs often fail due to the lack of long-term planning and strategic thinking. In addition, research shows that managers and small business owners often tend to view strategic planning as a practice mostly suitable for big businesses. However, strategic planning is as essential for small businesses as it is for big ones because it allows companies to be proactive and sets up a sense of direction, which is a crucial element for the sustainable financial performance of a business irrespective of its size.

This paper addresses the fundamental problem where most SMEs in Namibia experience financial performance challenges during the first twenty-four months of their inception, which leads to 75% of failed SMEs before their full establishment (Kambwale *et al*., 2015). Notwithstanding this reality, there are currently few studies that examine the relationship between strategic planning and the financial performance of SMEs in Namibia. Most studies focus more on the external factors that impact SMEs' performance than internal factors like strategic planning. The study addresses the current literature gap by concentrating on Namibia as a developing country. Therefore, it aims to empirically ascertain whether SMEs in Windhoek practice strategic planning and whether embracing strategic planning practices impacts their financial performance.

The rest of the paper is structured as follows. Section 2 presents the literature review, while the methodological approach is presented in section 3. Results and discussions are presented the section 4. Conclusions and policy implications are presented in the last section.

2. Literature Review

2.1. Theoretical Literature

There are several theories linking the notion of strategic planning to performance. Although many of these theories have been developed from the large businesses' perspective, it is possible to apply them to small businesses and assess how useful they would be to these business owners and/or managers. This section discusses some significant theories that comprehensively explain the relationship between strategic planning and an organisation's performance.

2.1.1. Resource-Based Theory

The Resources-Based view emerged in 1980 as a way of achieving competitive advantage. This theory was supported by Edith Penrose's work in the late 1950s. From the 1990s, the focus of strategy moved from the sources of profit in the external environment to the origins of profit within the business. This focus led to the internal resources and capabilities of the company being regarded as the main source of competitive advantage and the primary basis of formulating strategy (Grant, 2010). The Resource-Based view theory perceives that the organisation's resources are fundamental to its superior performance. This theory focuses on the notion that organisations should look internally for resources that will enhance their competitive advantage instead of searching for sources of competitive advantage in the external environment. Abosede *et al*. (2016), state that the Resource-Based Theory stems from the principle that the strength of the company's competitive advantage lies in its internal resources and not in its positioning in the external environment.

2.1.2 Survival-Based Theory

The concept of the Survival-Based Theory developed by Herbert Spencer emphasises that only the best and fittest competitors will succeed (Abdullah, 2010). The Survival-Based Theory focuses on the businesses need to always adapt to their competitive environment to survive (Omalaja & Eruola, 2011). These scholars clarify that this theory differs from the human Resource-Based Theory, which emphasises the importance of the human element in strategy development. Abdullah (2010) explains that the Survival-Based Theory view of strategic management assumes that for businesses to endure, they have to gather strategies that should be focused on running efficient operations and responding rapidly to the fluctuating competitive environments. Simply put, the Survival-Based Theory is the strategy that an organisation uses to avoid being eliminated by its competitors (Abosede *et al*., 2016).

2.1.3 The Core competence Theory

The Core Competence Theory is a strategy theory that stipulates actions that organisations can take to achieve a competitive advantage. In their article titled "The Core Competence of the Corporation," Prahalad and Hamel (1990) introduced the concept. They argued that it is essential to pursue a competitive advantage from the capability to stay competitive. Abesiga (2015), states that the Core Competency Theory enhances the Resource-Based view theory by connecting the business' competitive advantage and its resources and capabilities. It is based on the assumption that the tangible foundation of advantage is found in the ability of management to combine available technologies and skills into capabilities that empower businesses to acclimate to rapidly changing opportunities (Prahalad & Hamel, 1990).

2.1.4 The Dynamic Capabilities Theory

Teece et al introduced the phrase dynamic capabilities to refer to the "company's ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments" (Teece, Pisano & Shuen, 1997, p. 515). Furthermore, they define dynamic as the capacity to renew competencies to achieve equivalence with the changing business environment. Grant (2010) suggests that dynamic capabilities could be disaggregated into three dimensions namely: to sense and shape opportunities and threats, seize opportunities, and maintain competitiveness through enhancing, combining, and protecting the business' intangible and tangible assets. Teece *et al*. (1997) recognise three factors that will support to determine a business' distinctive competence and dynamic capabilities: processes, positions, and paths. They argue that a business's competitive advantage lies in its managerial and organisational procedures shaped by its asset position and paths. Abesiga (2015) states that there is increasing evidence that an organisation's dynamic capabilities can significantly affect its performance. Therefore, businesses should develop and redefine their resource base to create new areas of competitive advantage.

In this paper theoretical framework is based on the Survival-Based Theory and the Resource-Based Theory. As noted by Majama and Magang (2017), the resource-based theory suggests that the resources and capabilities of an organisation are its basis of direction and the starting point of strategy formulation. This theory is based on the notion that businesses that use their resources to create inimitable strategies have a competitive advantage. Similarly, the survival-based view explains that businesses need to develop strategies to respond to dynamic environments to survive. These theories are relevant to this study as they deal with strategic planning in determining organisational performance, and they also apply to small businesses and large corporations.

2.2. Empirical Literature

A substantial number of studies have been done to assess the impact of strategic planning on the performance of small businesses. Robinson and Pearce (1984) did one of the pioneers and widely cited publications on this topic titled: "Research Thrust in Small Firm Strategic Planning". Their research addressed strategic planning in small businesses, and their report was divided into four different thrusts. These thrusts include "to confirm the presence or absence of strategic planning practices empirically", "provide empirical evidence of the value of strategic planning", "examine the appropriateness of specific features of the planning process", and "examine the content of strategy in small firms".

Robinson and Pearce (1984) observe that literature was given limited attention during the 1950s and 1960s to the value of planning in small firms, becoming more prescriptive and empirical during the 1970s and 1980s. However, they cite different papers published between the 1950s and 1980s, providing evidence that strategic planning is of value to small firms. From the four thrusts on which Robinson and Pearce (1984) based their study, they reached the following conclusions: On the first thrust, the decision is that small businesses do not plan, and they recommended future research to answer these three broad questions: How is planning operationalised in studies of small firm planning? Is the application of planning the main ingredient that separates the growing business from the small, static business, and what are the key factors that discourage or prevent planning?

On the second thrust, they noted that several studies had supported a favourable perceived or objectively measurable impact of strategic planning on small firms' performance. On the third thrust, they concluded that the planning process in small businesses deserves considerable attention and suggested the following additional issues that need attention: what does" informal" mean? How should "Outsiders "be utilized in the planning process? And what specific activities should comprise the planning process? And finally, on the last thrust, they concluded that the content of strategy in small firms merits specific attention to the following issues: What viable strategy options exist for small businesses? What essential capabilities must a firm possess to pursue different strategies, and how do and will factors like franchising and technology influence the strategies and tactics for smaller firms? They concluded that “the success of small businesses will depend on the quality of strategic decisions made by principals in such businesses. Research that helps improve the quality of strategic decisions in small firms could make major practical and theoretical contributions.”

In the study “The role of strategic planning in SMEs: literature review and implications”, Kraus, Reiche, and Reschke (2005), examine how and to what extent small and medium-sized enterprises apply strategic planning within their business activities. The paper specially addresses why SMEs seem to plan less than big companies and explores how and to what extent SMEs use strategic planning within the scope of their business activities. They conclude that there is a relationship between strategic planning and success in SMEs. They add that scientific literature proves that strategic planning methods and tools rely on increasing company size. Thus, SMEs seem to plan less than established larger enterprises. In “The Strategic Management of Small firms: Does the theory fit the practice, "Mazzarol (2003) examined the strategic management literature by considering its applications in the context of small businesses.

The paper examines which theories are relevant and not relevant to small businesses using a case study approach. Four cases were selected for the study, of which are manufacturers. He notes that “no consistent pattern was found among the four case study firms possessing formal vision or mission statements. However, each of the owner-managers was found to have struggled with the strategic intent of their firms”. The study provides some insight into the suitability of strategic management theories for small businesses. It concludes that even though some strategic management theories were primarily developed for bigger companies, strategic management theory appears to apply to small businesses experiencing growth and change.

In a report titled “Strategic Planning and Its Relationship with Business Performance Among Small and Medium Enterprises in South Africa”, Sandada, Pooe, and Dhurup (2014) found an association between strategic planning practices and business performance amongst SMEs in the Gauteng province of South Africa. Data was collected through structured questionnaires, and factor analysis, correlations, and regression techniques were used to extract the extent of strategic planning and its relationships with business performance. They noted that based on their research results, there was an inference that increased strategic planning practices led to high levels of business performance.

The positive association between strategic planning and SME performance should encourage SMEs to embrace the approach of strategic planning. Another study by Lobontiu (2002), which sought to evaluate the relevance of strategic management for small businesses, affirms that the SME context has and will continue to produce interesting theories, perceptions, and provocations, which will continue to refine and reform the notions of what is strategic and strategy process. The study observes that recently, small business owner-managers are becoming increasingly aware of the importance of strategic management. They are more interested in applying strategic management in the running of their businesses.

As highlighted above, there is quite a significant number of empirical research concerning the relationship between strategic planning and the performance of small and medium enterprises. However, there is little research done from a Namibian perspective as most studies done on Namibian SMEs focus on the external factors hindering the growth of SMEs. Amwele (2013) investigated the factors affecting the performance of SMEs in the retail sector in Windhoek, Namibia, and found that resources and finance, external environment, competition and corruption are the most aspects that unfavourably affect the performance of SMEs in the Namibian retail sector. The study considered external factors such as the environment. Still, it did not address the internal strategic planning elements against the financial performance of studied SMEs in this study. The sample for this study was 40 SMEs. Similarly, Kambwale *et al*. (2015) analysed the factors that contribute to the failure of Small and Medium Enterprises (SMEs) in Windhoek.

The objectives of their study were to determine the causes of SME failures and examine ways to overcome SME failures. They concluded that a lack of management skills, financial support, and a lack of business training was the major cause of failure among SMEs in Windhoek. Their sample size was 100 SMEs. In his thesis titled “Critical factors that influence the success and failure of SMEs in Namibia in the Khomas Region, April (2005) analysed the critical factors that influence the success and failure of Small Medium Enterprises (SMEs) in Namibia in the Khomas Region. He pointed out that the owners of successful and unsuccessful businesses believe that poor financial control and credit problems are the most prominent reasons businesses fail. He collected data from a sample of 40 respondents.

As indicated above, none of these studies explicitly aimed at understanding the link between strategic planning and financial performance in SMEs. Therefore this study attempts to fill some of that gap in the literature. One of the significant differences between this study and the ones mentioned above is the sample size. The sample sizes from the studies above range from 40 to 100 SMEs, while this study collected data from 237 SMEs operating in Windhoek, which provided some meaningful representation of the population.

3. Research Methodology

3.1 Research Design

The paper adopted a mixed-method research approach using a cross-sectional research design. This method was ideal because it provides comprehensive insights into the relationship between strategic planning and the financial performance of SMEs within an appropriate and acceptable time frame. Qualitative and quantitative data were collected and combined to address the research question and hypotheses.

The data was collected from registered SMEs operating in Windhoek, Namibia. Windhoek was selected because it has the highest number of SMEs concentration in Namibia. Of the 28 296 formally registered SMEs in Namibia as of 23 February 2022 as provided by officials from the Business and Intellectual Property Authority (BIPA), a total of 13 501 are operating in Windhoek. This number represents 48% of SMEs in the country. There is currently no clear distinction made in the database between micro and SMEs, but it was estimated that 60% of the total number would be SMEs, and the remaining 40% would be Micro enterprises. Therefore, the population for this study was 8 100 SMEs. The research population was restricted to all Windhoek registered SMEs as defined by the National Policy on Micro, Small, and Medium Enterprises in Namibia (2016).

This paper employed a mixed-method sampling technique using random and non-random sampling. A systematic random sampling method and a convenience sampling method were used. The choice of using convenience sampling combined with systematic probability sampling is supported by Daniel (2012). He specifies that the accessibility of a population should be considered when making sampling choices because it will impact the ability of the researcher to implement a sample design successfully. This study adopted a list sampling technique by selecting every second shop/stall in a business complex. In addition, the Krejcie and Morgan (1970) table for sample size determination was used, wherein a total sample of 367 SMEs was chosen.

3.2 Data analysis

The cross-tabulation approach is used to address the qualitative aspect of the paper whereas the Ordinary Least Squares (OLS) estimation technique was used to address the quantitative objective. This is the most suitable technique because it captures the magnitude and significance of the underlying relationship. Based on Makinde, Babatunde and Ajike (2015), the estimated model is expressed as:

$$Financial\ performance = \beta_0 + \beta_1 X_1 + \beta_2 D_1 + \varepsilon \quad (1)$$

Where $\beta_0 - \beta_2$ are parameters to be estimated, D_1 is a dummy variable equal to one if a firm engages in strategic planning (i.e., vision and mission formulation, environmental analysis, setting objectives, monitoring, and evaluation respectively) and zero otherwise as adapted from Aboramadan and Borgonovi (2016) and Ouakouak (2017). While X_1 is a control variable denoting the number of years a business has been in operation. Financial performance is measured by the performance of Sales, Profit Margin, and ROI. This yields three equations that are estimated using the same independent variables as in equation 1 above to capture all three financial performance indicators. Strategic planning is deemed to enhance financial performance if at least one of the parameters β_2 is positive and statistically significant.

4. Results and discussions

4.1. Response rate & demographic information

A total of 397 SMEs were approached and requested to complete the online or paper-based questionnaires. Of the 367 SMEs, 242 completed and returned the questionnaires but only 237 were correctly completed and deemed usable. Therefore, the study achieved a response rate of 65%. The results align with Fincham (2008); Nulty (2008), who cites Ricardson (2005) by stating that a response rate of 60% and above is desirable. The results revealed that the majority (14.3%) of SMEs operating in Windhoek were in the retail sector, followed by ICT at 12.2%, trading at 10.1%, and 8% in the hospitality sector. The ownership structure indicates that most SMEs were Close Corporations, representing 46.8%, 35.9% were family-owned or sole Owners, and 12.7% were in partnership. Moreover, the majority (13.9%) of the SMEs had been in operation for three years.

4.2 The Effect of Strategic Planning on the Financial Performance of SMEs

The study's first objective sought to determine the effect of strategic planning on the financial performance of SMEs in Windhoek, Namibia. Results of the three models as per equation 1 are presented next.

The effect of Strategic Planning on Sales Performance for SMEs in Windhoek

Table 1 shows the magnitude and significance of the coefficients. The variables show standardised Coefficients (beta column) of 0.146 and - 0.217 respectively. This means that holding all other variables constant, SMEs that practice strategic planning are associated with high sales performance by 0.53 units when compared to those that do not. Conversely, a unit increase in the number of years that the business has been in operation exhibits an inverse relationship. Therefore, it can be concluded that strategic planning has a positive effect on sales performance as a financial performance indicator.

Table 1: Coefficients: Sales performance

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	**(Constant)**	**2.635**	**0.403**		**6.535**	**0.000**
	Is Strategic Planning a significant part of your business	0.528	0.231	0.146	2.288	0.023
	Years of Operation	-0.077	0.022	-0.217	-3.412	0.001
a. Dependent Variable: Sales Performance over the last 3 years						

Effects of Strategic Planning on Profit Margin Performance

The profit margin performance estimates are consistent with the sales performance results. Table 2 indicates the coefficients (beta column) of 0.454, and - 0.033 respectively. SMEs that practice strategic planning are associated with more profit margins by 0.45 units when compared to the benchmark category (those that do not practice strategic planning

Table 2: Coefficients: Profit Margin Performance

Coefficients[a]						
Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	**(Constant)**	**1.637**	**0.195**		**8.402**	**0.000**
	Is Strategic Planning a significant part of your business	0.454	0.112	0.255	4.068	0.000
	Years of Operation	-0.033	0.011	-0.193	-3.086	0.002
a. Dependent Variable: Profit Margin Performance over the last 3 years						

Effect of Strategic Planning on Return on Investment (ROI) Performance

The hypothesis that strategic planning plays a significant role in enhancing the financial performance of SMEs is robust even when ROI (third financial performance indicator) is employed. Table 3 illustrates the supporting evidence of the strategic planning-led financial performance hypothesis for Namibia SMEs.

Table 3: Coefficients ROI Performance

Coefficients[a]						
Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	**(Constant)**	**1.766**	**0.185**		**9.542**	**0.000**
	Is Strategic Planning a significant part of your business	0.365	0.106	0.218	3.444	0.001
	Years of Operation	-0.027	0.010	-0.167	-2.629	0.009
a. Dependent Variable: ROI Performance over the last 3 years						

The findings are consistent with Tarifi (2021) who concurs that strategic planning is fundamental in ensuring the growth of an organisation. Similarly Babafemi (2015), van Scheers and Makhitha (2016) are of view that planning leads to improved financial performance and that the effectiveness of the planning process can be measured according to the level of financial performance. Furthermore, Taiwo and Idunnu (2007) found that businesses that exercise strategic planning perform better than those that do not. This was documented by Schoneburg-Schultz and Schultz (2006) who argues that the performance and progress of Namibian SMEs are influenced by many different factors, with the key ones being; management abilities, entrepreneurial skills, and financial situation.

4.3 The extent of Strategic Planning Practices by SMEs

The second objective sought to determine to what extent SMEs in Windhoek engage in strategic planning practices. To address this objective, the respondents were asked about the significance of strategic planning in their businesses. They were also asked how long they had been performing strategic planning and if they had written long-term goals, the main objective for engaging in strategic planning, planning for business interruptions, and making provision for succession plans.

According to the results, 59% indicated that strategic planning was essential in their entities, while 41% stated that it is not a crucial element in their businesses. Twenty-four percent of the respondents indicated that they were not engaging in strategic planning, and 23% had been performing strategic planning for 1 to 2 years. Twenty-one percent of the respondents had been performing strategic planning for 3 to 5 years, 17% were doing it for more than five years, and 15% for less than a year.

According to Reboud and Mazzarol (2008), strategic planning should respond to customer needs and must be done to ensure the future growth of the business. The study found that many SMEs (53%) did not have written long-term and short-term goals, which is one of the fundamental elements of strategic planning. On the question of trying to understand the main objective for strategic planning, the study revealed that SMEs were doing it to grow and increase customers or keep growing until their business became a big company. Both of these reasons got 34% of the responses, respectively. Similarly, 24% indicated that their main reason for doing strategic planning was to make a profit and keep doing business, with 8% saying that their primary reason was to make enough profit to care for their families and personal expenses. Succession planning is one of the critical elements of business continuity and a vital part of strategic planning. As asserted by Simidele (2015), the effectiveness of strategic planning is associated with achieving formulated objectives, creating better outcomes, and improving organisational performance due to the use of the strategic planning process in the business. The study results show that 57% of SMEs do not have succession planning. The responses are consistent with the answers of 54% of respondents who indicated that they would experience an interruption in business if anyone left.

4.4 Types of strategic planning models used by SMEs who engage in strategic planning

The third objective of this study sought to determine the type of strategic planning models used by SMEs in Windhoek. According to Figure 1 most (38%) SMEs used the Issue-Based Strategic Planning model, while 27% did not use any strategic planning models. A total of 23% used SWOT analysis, and 6% used the Balanced Scorecard model with 4% using PEST analysis and 2% using Porter's Five Forces. According to these findings, it is concluded that SMEs in Windhoek mainly use the Issue-Based Strategic Planning Model.

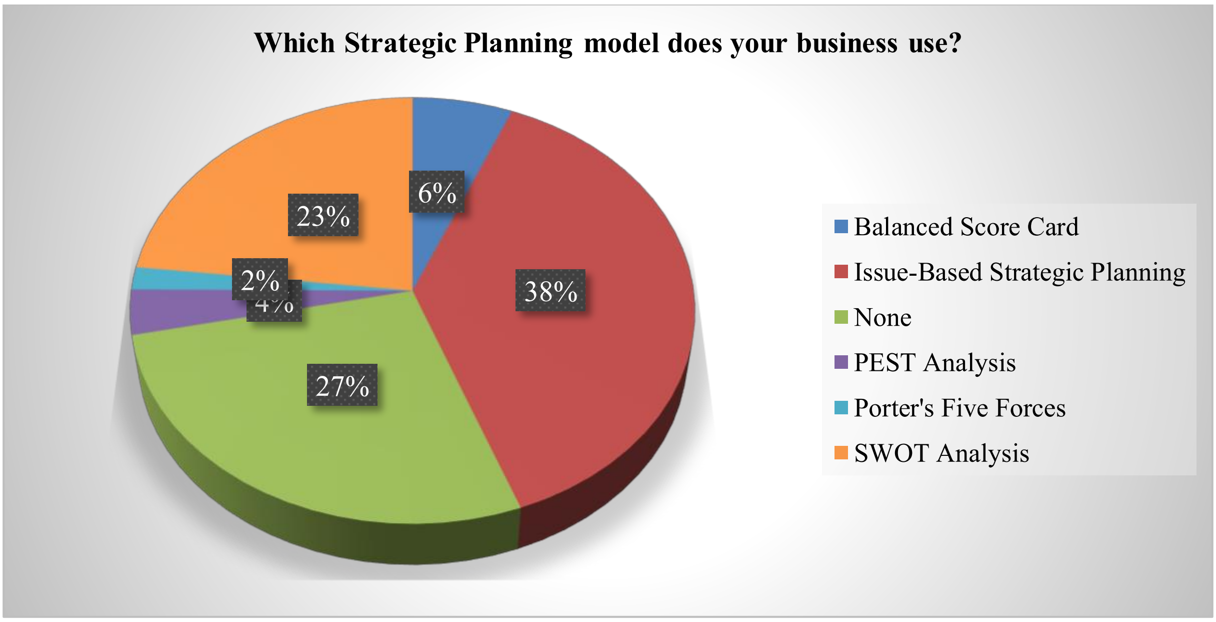

Figure 1: Strategic Planning Models used by SMEs

The Issue-Based Strategic Planning Model is based on the premise that planning is done on a need basis. According to the literature, this is suitable for small businesses because it works best for organisations with limited resources. This view is in line with the results from this study where the majority of the SMEs that participated in the survey mentioned issue-based strategic planning as the preferred choice of strategic planning. Issue-Based Strategic Planning typically starts by evaluating issues facing the organisation and then developing strategies and action plans to address those issues (Saxena, 2009). Suklev and Debarliev (2012) state that the effectiveness of strategic planning is associated with achieving formulated objectives, and there are no one-size-fits-all strategies for businesses. But organisations should choose a suitable system that aligns with their mission and vision.

5. Conclusions and Policy Implications

The paper aimed to contribute to the existing literature by investigating whether strategic planning impacts the financial performance of SMEs in Windhoek, Namibia. Three specific objectives were formulated to support the aim namely: to ascertain whether strategic planning affected the financial performance of SMEs, to determine SMEs' level of involvement in the strategic planning process and to identify the type of strategic planning that SMEs commonly used. The findings support the hypothesis that strategic planning has a positive effect on the financial performance of SMEs. The results are in line with the reviewed literature that confirms that implementing strategic planning impacts the financial performance of SMEs. According to Lo and Sugiarto (2021), strategies and strategic planning both aimed to improve corporate performance by putting an organisations on the right track and guiding its managers' decisions and actions.

The second objective sought to determine SMEs’ involvement in the strategic planning process. Although strategic planning was a significant part of most SMEs' businesses in Windhoek, the gap between those that viewed strategic planning as a substantial part of their business and those that didn’t was narrow. Fifty-nine percent indicated that strategic planning was significant to them compared to 41% who stated that it was not. The SMEs that engaged in strategic planning indicated that their main objective for doing strategic planning was to grow their business, increase customers, and keep growing their business until it became big companies. Most SMEs indicated that there would be severe interruption if one person left and did not have succession plans in place. Therefore, the study inferred a limited level of strategic planning in Windhoek SMEs with some strategic planning elements in place and others are missing. The notable element missing that can be concluded from the findings of the study was that SMEs did not have written long and short-term goals.

Thirdly the paper sought to identify the type of strategic planning model commonly used by SMEs in Windhoek. The SMEs in Windhoek predominantly used the Issue-based Strategic Planning Model for strategic planning purposes. According to the literature, this is most suitable for small businesses because it worked best for organisations with limited resources.

In both established and developing economies, small and medium-sized firms (SMEs) represent a crucial source of employment, poverty alleviation, income creation, innovation, and technical development Salman and Normalini (2020). The establishment and sustainability of new SMEs are critical to a country's broad-based development. This paper's findings imply that a fit between an organisation and its environment can be established through strategic planning. Generally, the paper has vital implications for SMEs, funding institutions, the Namibian Government, and policymakers. Even though previous studies have highlighted the benefit of strategic planning in enhancing the financial performance of SMEs, the study showed that there were some elements of strategic planning that the SMEs in Windhoek were not utilising. These missing elements could be helpful to them in improving their strategic planning processes and ultimately financial performance. An element like succession planning is not complicated; however, most SMEs in Windhoek indicated that they did not have succession plans. A dynamic business environment demands businesses have the relevant management skills to have a better understanding of the business environment to develop suitable strategies. The study recommends that managers and owners of small businesses should equip themselves with the necessary management skills that will enable them to run their businesses profitably. One of the interesting issues observed during the research process was that most SMEs did not have up-to-date accounting records that gave a complete view of their financial position. The study recommends that SMEs use professional bookkeepers to assist them in having proper financial records. This will enable them to make informed decisions about their business operations.

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Nonlinear Impact of Financial Leverage on Profits: Case of Listed Companies in Vietnam

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Abstract
The aim of the article is to show the nonlinear impact of financial leverage on the profitability of companies listed on the Vietnamese stock market. Thereby, the author determines the threshold of each leverage with the goal of maximizing profit. The research sample includes 8,459 observations from 769 listed companies in Vietnam, period 2012-2022. The GLS estimation results confirm that financial leverage has a nonlinear effect on profitability in the form of an inverted U. On the basis of the estimated coefficients of the nonlinear function, the author uses the derivative method and determines the financial leverage threshold represented by a debt coefficient of 58.6% for ROA and 62.9% for ROE. At this threshold ROA peaks at 0.132 and ROE peaks at 0.163. In addition, the author also finds explanations for profitability by other factors such as firm size, level of tangible fixed asset investment and firm's liquidity. The research results provide useful information for financial managers at companies and other entities that can be referenced to make relevant decisions. In addition, the author gives some recommendations for listed companies, investors, business leaders and policy makers in choosing a reasonable capital structure for enterprises.

Keywords: Financial Leverage, Profit, ROA, ROE, Impact

1. Introduction

Financial leverage formed in the business comes from financial decisions using borrowed capital. Accordingly, firms using debt and preferred equity will form financial leverage (Anderson & Reeb, 2003; Van Horne & Wachowicz, 2008). From the perspective of financial management, businesses will decide to choose the level of financial leverage based on assessing the impact of these levers on profits. Using financial leverage is like a double-edged sword, therefore, the construction of capital structure has a great influence on firm value (Chang, 2003; Van Horne & Wachowicz, 2008).

Assessing the impact of financial leverage on profitability, the same conclusion is confirmed by the empirical research of Mavromatti et al. (2021), Silambarasan & Azhagaiah (2015), Chowdhury et al. (2010), Habib (2014), Kumar (2014), Patel (2014), Shahzad et al. (2016), Tayyaba (2013); in contrast, experimental evidence for the opposite effect was found by Wieczorek-Kosmala et al. (2021), Chen (2020), Zeitun et al. (2015); Dawar (2014), Agburuga & Ibanichuka (2016), Pavan Kumar (2017), Sen & Ranjan (2018); Villalonga & Amit (2006). Thus, the empirical evidence indicates a possible positive or negative relationship of financial leverage on profitability, which is a linear function, that is, the slope of the return is constant for all different financial leverage. In fact, each different level of debt ratio will affect profitability positively or negatively with different estimated coefficients. Therefore, the study of the linear function is not enough to conclude on the effect of capital structure and firm value.

Theoretically and experimentally, studies have demonstrated the existence of a nonlinear relationship between financial leverage and profitability or firm value as Nieh et al. (2008); Yang et al. (2010); Berzkalne (2015). Accordingly, profits increase when using financial leverage, but if borrowed capital is abused, business results will decrease. Accordingly, the author poses two research questions: (i) Is there a nonlinear effect of financial leverage on profitability? (ii) If there is a nonlinear effect, what is the threshold for using leverage to maximize firm profits?

To answer the above two questions, the author chooses to approach listed companies in Vietnam. The research results are expected to provide useful reference information for financial managers and other entities when making investment decisions. This article is structured in 6 content sections. In addition to the introduction, the following sections include: Theoretical basis and research overview presented in Section 2; Section 3 presents the research model; Section 4 describes the data and research methods; Section 5 presents research results and discussions; Section 6 presents conclusions and recommendations.

2. Theoretical basis and research overview

2.1. Theoretical basis

2.1.1. Agency Cost Theory

Berle & Means (1932) mentioned agency costs in the modern firm model. This theory was developed by Jensen & Meckling (1976). Accordingly, agency costs increase due to conflicts of interest between shareholders and managers, and between shareholders and creditors. This shows that managers will for personal interests instead of maximizing the value of the business, so they tend to choose investment projects with low risk, low return and a low debt ratio to reduce the risk of bankruptcy. To resolve conflicts through reducing agency costs, Harris and Raviv (1991) demonstrated debt as a mechanism to monitor and encourage board performance because of the positive relationship between the ratio debt and financial difficulties of the company. The company is at risk of bankruptcy if financial difficulties increase. This fact motivates managers to improve performance if they do not want to lose their jobs or leave a bad reputation. Thus, through minimizing agency costs between shareholders and managers, this theory favors the use of debt.

2.1.2. Durand’s Classical Theory

Durand (1952) was the first to put forward the theory of the capital structure of the firm. Debt has a "cheaper" cost of capital than equity, he said. Therefore, if the enterprise uses a lot of debt, it will reduce the average cost of capital and increase the value of the enterprise. Furthermore, as the debt-to-equity ratio increases, the return on equity will increase because the cost of equity is higher than debt. However, if the enterprise increases the ratio of debt to total capital, the cost of debt will also increase due to the increased risk of bankruptcy. Therefore, the impact of capital structure on firm value depends on the balance between the benefits of using debt and equity. Therefore, enterprises need to build a reasonable capital structure to minimize the average cost of capital and maximize the value of the enterprise. This study does not draw conclusions about what is the optimal capital structure for enterprises.

2.1.3. Modigliani and Miller's Theory

Modigliani and Miller (1958) concluded that firm value does not depend on its debt ratio. This study is set in a perfect market, with no competition, no taxes, no risk, and constant interest rates. This is contrary to the fact so, Modigliani and Miller carried out a follow-up study in 1963, they presented new evidence that the cost of capital affects capital structure and therefore affects the value of the firm. Using debt will incur interest expense and this expense is partially deductible when calculating corporate income tax. Enterprises save on corporate income tax costs by taking advantage of tax shields, leading to maximization of business value. The theory of Modigliani and Miller laid the foundation for the birth of later theories of capital structure.

2.2. Research overview and hypothesis

Financial leverage is formed when firms choose fixed-cost capital sources, this choice is expected to increase profits (Van Horne & Wachowicz, 2008). According to the M&M theory of Modigliani & Miller (1958), profit for shareholders is expected to increase when the firm decides to increase the level of financial leverage formed from debt, which is a compensation for accepting accept the added risk of this decision.
The proposed Dupont model is used to analyze the profitability of capital expressed through the rate of return on equity, whereby financial leverage explains the same direction for profitability. However, it is proposed to apply Durand's (1952) net operating profit theory and M&M theory to analyze return on equity, indicating that profitability is available to the owners of the company, affected by financial leverage in the same or opposite direction depending on the relationship between the return on assets and the cost of debt. If businesses can achieve a return on assets that exceed the cost of debt, the decision to choose debt financing will contribute to increased profitability for owners and vice versa.

2.2.1. Financial leverage has a positive effect on profitability

Mavromatti et al. (2021) approached financial data of 68 aquaculture companies in Greece for the period 2010-2015 and concluded that financial leverage is positively related to profitability. This implies that the higher the financial leverage, the higher the profit. In addition, the study also shows that corporate profitability is positively affected by liquidity, working capital management, productivity and industry growth and negatively affected by financial leverage. A firm's performance is positively determined by its profitability and ability to pay its debt obligations and negatively by its capital intensity, operating leverage, and scale.

Silambarasan & Azhagaiah (2015) using data collected from 28 companies in the IT industry in India for the period 2010-2014, concluded that financial leverage has a positive impact on profitability. This relationship is also confirmed by the study of Shahzad et al. (2016) for the case of cement companies in Pakistan during 7 years, from 2009 to 2015, the authors prove, increasing the use of financial leverage formed from debt contributes to increased profits by taking advantage of tax shields. As a result, return on equity increases. Therefore, for companies in the energy sector with high financial leverage, it is recommended to increase the use of financial leverage to optimize benefits from debt.

Kumar (2014), studied leverage and its relationship between profitability in Bata India Limited. The results provide empirical evidence that the degree of financial leverage is positively correlated with return on investment (ROI).

Patel (2014) also concludes that an increase in the use of financial leverage will contribute to an increase in profitability and vice versa.

Tayyaba (2013) explores the effect of financial leverage on the profitability (EPS) of the oil and gas industry. The results demonstrate the positive relationship of financial leverage and earnings per share (EPS) in this sector.

2.2.2. Financial leverage has a negative impact on profitability

Many other empirical evidences also confirm that financial leverage has a negative effect on profitability. Specifically:

Wieczorek-Kosmala et al. (2021), investigating the determinants of profitability of unlisted energy companies from four Central European countries: Hungary, Poland, Slovakia and the Czech Republic, time 2015–2019. The research results support the inverse relationship of financial leverage to profitability, which is consistent with the assumptions of pecking order theory.

Chen (2020) analyzes the case of joint stock companies listed on the Shanghai and Shenzhen Stock Exchanges in China in the period 2010-2019, confirming the existence of a negative effect of financial leverage on the efficiency of the return on assets, in addition, this relationship is also positively affected by operating leverage, revenue growth rate. The results of this empirical study have certain significance in funding decisions and risk management in companies; Accordingly, the company using high level of financial leverage formed from debt will have a negative effect on profitability, because of the increase of financial risk and agency cost. Therefore, Chen's suggestion is that businesses should maintain a reasonable capital structure. Real estate companies are more likely to use financial leverage than companies in other industries.
Agburuga & Ibanichuka (2016), analyze financial, investment and operating leverage to predict future earnings. The results show that future income has a negative relationship with financial leverage and investment leverage and has a positive relationship with operating leverage. Therefore, this study provides evidence consistent with the trade-off theory.

2.2.3. Financial leverage has no significant impact on profitability

Pavan Kumar (2017), Sen & Ranjan (2018), analyze the impact of leverage on profitability and corporate performance of auto companies from 2006 to 2016. The results show leverage Operating, financial, and aggregate leverage do not play a major role in a company's investment decision making. Financial leverage has no significant impact on ROA.

Habib (2014), research in companies producing consumer products in Pakistan in the period 2002-2013. Data were analyzed using descriptive statistics, correlation and regression models; The dependent variables include Return on Equity (ROE), Return on Assets (ROA) and Net Profit while the independent variable is the financial leverage ratio. Research results show that there is no significant impact of financial leverage on ROA and ROE. But there is a significant impact of leverage on net profit.

2.2.4. Financial leverage has a nonlinear effect on profitability

Nieh et al. (2008) used array data of 143 electronic companies listed in Taiwan for the period 1999- 2004. Profitability of enterprises is measured by ROE and EPS. The research team used Hansen threshold regression, the results showed that: The appropriate debt ratio for enterprises is from 12.37% to 51.57%, the optimal debt ratio is in the range of 12.37% to 28, 7% will improve the profitability of enterprises. Besides, the authors also put two control variables, growth rate and enterprise scale, into the model because they think that these two variables can affect business performance. However, with the sample of the author's study, no statistical evidence has been found to show the impact of these two control variables on the profitability of enterprises.

Yang et al. (2010) studied in China using a threshold regression model, a sample of 650 enterprises in the period 2001-2006 with profitability indicators measured by ROE, capital structure measured through debt index. The research results show that the profitability of enterprises will increase when the debt ratio is lower than 53.97%, when the debt ratio is lower than this level, the enterprises will increase their debt and increase only to 53.97%, which increase profitability. In addition, the research results also show that: the profitability of enterprises is still high but will begin to decrease gradually when the debt ratio is between 53.97% and 70.48%, the profitability of enterprises will decline sharply when the debt ratio is greater than 70.48%.

Berzkalne (2015) studies the non-linear relationship between capital structure and profitability of firms by using threshold regression analysis with a sample of 58 listed companies in the Baltic in the period 2005 - 2013. Research using debt ratio and total debt/total capital to represent capital structure and choose stock price as the best indicator to represent profitability of enterprises. The study concluded that there is a non-linear relationship between capital structure and profitability. For listed companies in the Baltic region with small market capitalization, an increase in leverage will increase the profitability of the business and reach the highest value if the debt ratio reaches 24.64%.

Thus, companies need to determine a reasonable limit on the extent to which debt is used to form financial leverage, thereby ensuring a balanced relationship between investment efficiency and debt cost and profit maximization. Accordingly, the author hypothesizes that companies have an appropriate threshold for using financial leverage to maximize profits, namely that profits will increase with the higher level of financial leverage but lower than the threshold and will reverse the relationship when financial leverage is too large compared to the threshold. This is a research problem that will be concluded whether it exists or not through hypothesis testing in this article.
H1: Financial leverage has an inverted U-shaped nonlinear effect on the profitability of listed companies in Vietnam

3. Research model

To test the proposed research hypothesis, the author sets up a research model for the second order nonlinear impact of financial leverage (Lia, Lia2) on profitability (ROA, ROE); In addition, the model also adds control variables (Size, Tang, Liq) that have a linear impact on profitability. Specifically, the regression equation is as follows:

$ROA = \beta_0 + \beta_1 Lia_{it} + \beta_2 Lia^2_{it} + \beta_3 Size_{it} + \beta_4 Tang_{it} + \beta_5 Liq_{it} + \varepsilon_{it}$ (1)

$ROE = \beta_0 + \beta_1 Lia_{it} + \beta_2 Lia^2_{it} + \beta_3 Size_{it} + \beta_4 Tang_{it} + \beta_5 Liq_{it} + \varepsilon_{it}$ (2)

In which:

β_0: Constant; β_1, β_2, β_3, β_4 is regression coefficients

it : The observed variable of company i at time t

i : 1, 2, … 769 enterprises

t : 2012, 2013, …2022 (total 11 years)

ε : error.

The dependent variable is represented by return on assets (ROA) and return on equity (ROE). The independent variable is financial leverage (Lia) as measured by debt to assets. In addition, the control variables in the research model include: enterprise size (Size) expressed through the base 10 logarithm of total assets, the level of tangible fixed asset investment (Tang) measured. It is measured by the proportion of tangible fixed assets in total assets, and a company's liquidity (Liq) is represented by its current ratio.

Table 1 presents the measurement and data collection sources of all variables in the research model.

Table 1: Formula for measuring variables

Variable code	Variable name	Determination formula	Source
ROA	Return on assets	Profit after tax/Average assets	Wieczorek-Kosmala et al. (2021), Chen (2020), Zeitun et al. (2015); Abor (2005)
ROE	Return on equity	Profit after tax/Average equity	Wieczorek-Kosmala et al. (2021), Chen (2020), Zeitun et al. (2015); Abor (2005)
Lia	Financial leverage	Total debt/Total assets	Dawar (2014), Agburuga & Ibanichuka (2016), Pavan Kumar (2017), Zeitun et al. (2015);
Size	Enterprise's size	Natural logarithm of total wealth	Zeitun et al. (2015); Pavan Kumar (2017), Sen & Ranjan (2018), Chen (2020).
Tang	Level of fixed asset investment	Fixed assets/Total assets	Pavan Kumar (2017), Zeitun et al. (2015); Sen & Ranjan (2018).
Liq	Liquidity ratio	Short-term assets / Short-term liabilities	Pavan Kumar (2017), Sen & Ranjan (2018).

Source: Author's summary

4. Research methodology

Applying the purposeful sampling method, the author determines the research sample includes 769 listed companies in Vietnam under the following conditions: (i) The company's shares are still in the listing status as of now. As of December 31, 2022, (ii) The companies have complete financial statements for the year 2012 to 2022, (iii) All financial statements have been audited and the audit reports for reasonable and truthful approval in accordance with the principle of materiality. The article uses secondary data from the financial statements of companies for a continuous period of 11 years, collected through the company's data system FiinPro.

To answer the first research question and test hypothesis H1, with the research data in the form of a balanced panel, the author uses the basic estimation methods, which are the pooled regression model (POLS), random effects models (REM) and fixed effects models (FEM); at the same time, Hausman test and Redundant Fixed Effects test to choose a more suitable model. In addition, the author also tests multicollinearity, autocorrelation and variance of variance; If these problems occur, the general least squares (GLS) model is used to overcome (Susmel, 2015).
To answer the second research question, based on the analysis results of the nonlinear impact of financial leverage on profitability, if this relationship is confirmed, the author will determine the threshold of leverage to maximize the profit using the derivative method. Specifically, according to the regression equation set up in Section 3 as follows:

(i) The derivative of ROA, ROE in terms of Lia is $\beta_1 + 2\beta_2$ Lia; Therefore, ROA, ROE is highest when Lia is $-\beta_1/2\beta_2$

5. Research results and discussion

5.1. Descriptive statistics results

The results of descriptive statistics for the variables are summarized in Table 2a. Accordingly, the average return on assets (ROA) is 5.30%, the lowest is -62.45%, the highest is 83.90%. Return on equity (ROE) has an average value of 10.32%. This shows that companies are guaranteed to be profitable after tax.

Financial leverage (Lia) is determined on the basis of liabilities to total assets, the average is 43.31% and ranges from as low as 0.01 (Stock TEG, 2014), the highest is 99.17% (Vietnam Airlines Company, stock code HVN, 2021). Thus, the fluctuation range of financial leverage is very large between companies.

In addition, table 2 also provides descriptive statistical information of the control variables, which is the variable (Size) of the asset with an average value of 10,940 billion VND, the level of fixed asset investment (Tang) and liquidity factor (Liq) have an average value of 21.40% and 2.42 rounds, respectively. This mean suggests that there is no multicollinearity among the independent variables.

Table 2a: Descriptive statistics of variables

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	8,459	0.053028	0.076065	-0.62458	0.839056
ROE	8,459	0.103189	0.18926	-7.50341	2.93092
Lia	8,459	0.433137	0.259052	0.0100	0.99167
TTS (billions VND)	7,843	10,940	85,400	6,100	2,120,527
Size	7,842	27.58962	1.854617	22.53163	35.29044
Tang	8,459	0.2140	0.2043	0.0000	0.9400
Liq	8,459	2.4245	3.2413	0.1716	64.2247

Source: Extracted from the author's data processing results

Table 2b shows the results of the variables by year. For the profit indicator measured by return on equity (ROE), the average value of the years from 2012 to 2021 ranges from 0.07 to 0.12. In which, in 2012 ROE was the lowest (0.07), in 2015 ROE was the highest (0.12). For the return on assets (ROA) indicator, the average value is 0.04 - 0.06, this result shows the stability of ROA over the years. In general, 2012 is where the ROA and ROE indexes have the lowest value. Because, this is the period when Vietnam's economy is affected by the global economic crisis. After that, the Government of Vietnam must implement synchronously strong solutions to stabilize the macro-economy and restructure the economy, giving priority to tightening monetary policy to control inflation. Therefore, from 2015 onwards, the economy in general has recovered, so ROA and ROE of enterprises tend to increase. By 2020-2021, the economy of Vietnam and the world is affected by the COVID-19 epidemic, so the indicators of business performance are low, especially in the service, transportation, and aviation industries.

Table 2b shows the fluctuations of the coefficients year over year for the period 2012-2022, showing that the debt/assets ratio (Lia) is quite stable over the years with a range of 0.41-0.45. In which, 2014 has the lowest Lia coefficient (0.02), in 2021 has the highest Lia coefficient (0.99).

Table 2b: Descriptive statistics of variables

Year	ROA			ROE			Lia		
	mean	max	min	mean	max	min	mean	max	min
2012	0.046	0.5964	-0.3172	0.0743	0.7134	-7.5034	0.41	0.78	0.0812
2013	0.0442	0.7426	-0.3697	0.0891	0.8946	-1.5215	0.41	0.69	0.0601
2014	0.054	0.6218	-0.3609	0.1139	1.5609	-1.2428	0.43	0.87	0.0210
2015	0.0618	0.8391	-0.2924	0.1221	1.4907	-0.9993	0.43	0.68	0.0510
2016	0.0585	0.536	-0.6246	0.1168	0.7767	-0.9532	0.43	0.90	0.0100
2017	0.0617	0.5465	-0.5172	0.1248	1.0616	-1.0743	0.44	0.96	0.8514
2018	0.06	0.8122	-0.3697	0.1169	1.6075	-1.6872	0.45	0.98	0.2365
2019	0.0528	0.4914	-0.3642	0.1085	2.9309	-0.559	0.45	0.59	0.2547
2020	0.046	0.4285	-0.227	0.0916	0.6357	-0.8855	0.45	0.76	0.1568
2021	0.0536	0.5561	-0.2557	0.0997	0.6462	-3.9133	0.45	0.99	0.1548
2022	0.0447	0.6126	-0.4355	0.0774	2.1607	-1.9023	0.42	0.89	0.2658

Source: Extracted from the author's data processing results

5.2. Correlation coefficient matrix

Table 3 presents the correlation coefficient matrix between the variables. At 1% significance level, financial leverage (Lia) is negatively correlated with ROA, the correlation coefficient is (-0.1542) but positive correlation with ROE, the correlation coefficient is 0.0171. In addition, the enterprise size variable (Size) is not correlated with ROA and ROA, while the remaining control variables (Tang) are positively correlated with the dependent variable, the variable (Liq) is negatively correlated.

Table 3: Correlation coefficient matrix

	ROA	Lia	Lia^2	Size	Tang	Liq
ROA	1					
Lia	-0.1542	1				
	0.0000					
Lia^2	-0.2363	0.0545	1			
	0.0000	0.0000				
Size	-0.0036	0.0194	0.0158	1		
	0.7529	0.0861	0.162			
Tang	0.2284	0.1057	0.0768	-0.0064	1	
	0.0200	0.0000	0.0000	0.5704		
Liq	-0.1606	0.4301	0.1092	0.021	0.195	1
	0.0000	0.0000	0.0000	0.0628	0.0000	
	ROE	Lia	Lia^2	Size	Tang	Liq
ROE	1					
Lia	0.0171	1				
	0.0000					
Lia^2	-0.0338	0.0545	1			
	0.0018	0.0000				
Size	-0.0054	0.0194	0.0158	1		
	0.6311	0.0861	0.162			
Tang	0.0676	0.1057	0.0768	-0.0064	1	
	0.0000	0.0000	0.0000	0.5704		
Liq	-0.2401	0.4301	0.1092	0.021	0.195	1
	0.0000	0.0000	0.0000	0.0628	0.0000	

Source: Extracted from the author's data processing results

Regarding the correlation between the explanatory variables shown in Table 3, the correlation coefficient received a positive value ranging from 0.0019 to 0.57049 and a negative value ranging from 0.0054 to 0.2400. These results suggest that multicollinearity is not a serious problem in the research model (Hair et al., 2006; Gujarati, 2008). In addition, the VIF coefficients are all very small, from the lowest level of 1.1257 to the highest of 2.3841, which confirms the absence of serious multicollinearity (Hair et al., 2006; Gujarati, 2008).

5.3. Regression results

Performing regression to prove the nonlinear impact of financial leverage on ROA and ROE of the enterprise is done as follows. With the selection derived from the simultaneous use of OLS, FEM and REM estimation methods, the Redundant Fixed Effects test results with a P-value less than 5% determine that FEM is more suitable than OLS, besides the results. Hausman test with P-value less than 5% determines that FEM is more suitable than REM. Thus, the author finds FEM more suitable than OLS and REM to estimate the nonlinear impact of financial leverage on profitability for the case of enterprises listed on Vietnam stock market in the period 2012- 2022.

According to Hair et al (2006), Susmel (2015), FEM is only interested in considering individual differences contributing to the model, so it concludes that the model has no autocorrelation problem. However, based on the FEM estimation results, the Modified Wald test is used and the P-value is less than 5%, indicating that the model has variable variance. To fix the problem of variable variance, the author chooses to use the GLS method and the results are presented in the last column of Tables 4 and 5.

In Table 4, the results of GLS estimation on the impact of financial leverage on ROA show that the coefficients of β of Lia and lia2 are 0.451 and -0.385, respectively, with statistical significance at 1%. This result indicates that financial leverage has a quadratic nonlinear effect on profitability in an inverted U-shape. Accordingly, the author determined the financial leverage threshold is 58.6%, then ROA is the highest (0.132). The detailed results are shown in Table 4 and Figure 1:

Table 4: The impact of financial leverage on ROA

	OLS	FEM	REM	GLS
Lia	0.199***	0.229***	0.210***	0.451***
	[18.52]	[16.41]	[16.64]	[18.14]
Lia^2	-0.299***	-0.301***	-0.295***	-0.385***
	[-22.63]	[-18.09]	[-19.47]	[-15.26]
Size	-0.0000236	-0.00155	-0.000491	-0.000685
	[-0.06]	[-1.34]	[-0.66]	[-0.78]
Tang	0.0136***	-0.00848***	0.000492	0.000761
	[21.90]	[-8.65]	[0.59]	[0.61]
Liq	-0.000826***	0.000454*	-0.0003	-0.0009
	[-2.87]	[1.72]	[-1.16]	[-1.28]
_cons	0.0286**	0.0828***	0.0507**	0.0673**
	[2.40]	[2.60]	[2.47]	[2.54]
N	7842	7842	7842	7842
R-sq	0.159	0.058		
Prob (F-statistic)	0.0000	0.0000	0.0000	0.0000
White's test	Prob>chi2=0.0000			
Wooldridge test	Prob>F= 0.0000			
Modified Wald test		0.0000		
Hausman test		913.43 0.0000		

t statistics in parentheses
** p<0.1, ** p<0.05, *** p<0.01*

Source: Summary of the author's data processing results

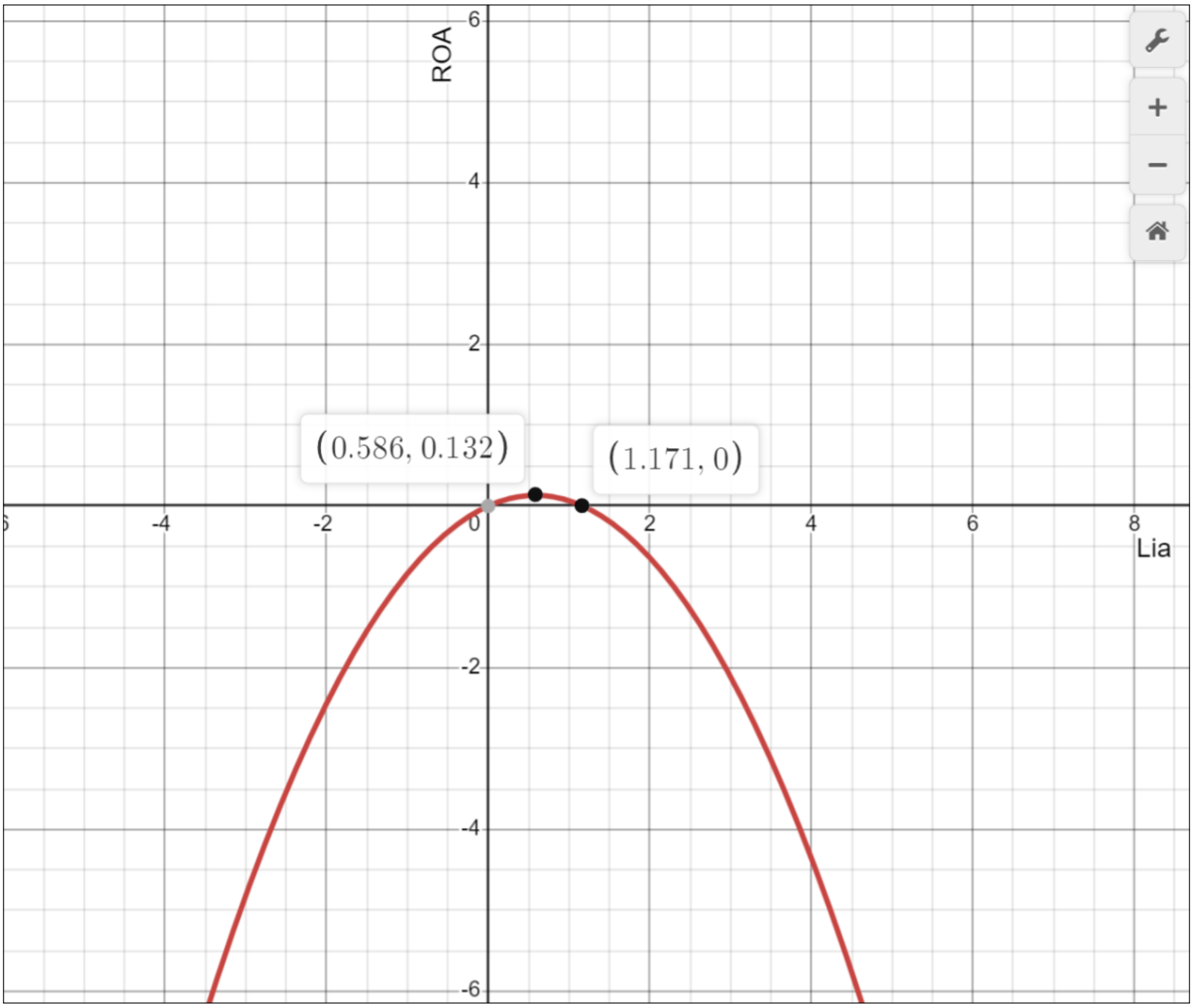

Figure 1: Nonlinear graph of the impact of financial leverage (Lia) on ROA
Source: Extracted from the author's data processing results

Figure 1 also shows that when financial leverage increases above 58.6% ROA tends to decrease, especially, when financial leverage reaches 100%, ROA will be 0.

The nonlinear effect of financial leverage on ROE is also confirmed in Table 5 below. Based on the GLS estimation results, it is also an inverted U-shaped nonlinear relationship. The β coefficients of Lia and lia2 are 0.518 and -0.412, respectively, with statistical significance at 1%. Accordingly, the author finds that the threshold for financial leverage represented by the debt-to-assets ratio (Lia) is 62.9%% for ROE to reach the highest level (0.163). The detailed results are shown in Table 5 and Figure 2:

Table 5: Impact of financial leverage on ROE

	OLS	FEM	REM	GLS
Lia	0.278***	0.570***	0.365***	0.518***
	[-9.98]	[-13.61]	[-10.96]	[-11.12]
Lia^2	-0.228***	-0.488***	-0.308***	-0.412***
	[-6.69]	[-9.77]	[-7.66]	[-8.76]
Size	-0.000233	-0.00162	-0.000262	-0.000128
	[-0.21]	[-0.46]	[-0.17]	[-0.35]
Tang	0.0148***	-0.0455***	-0.00297	-0.00381
	[-9.27]	[-15.45]	[-1.45]	[-2.37]
Liq	-0.0146***	-0.0124***	-0.0152***	-0.0212***

	[-19.59]	[-15.60]	[-20.24]	[-18.13]
_cons	0.0515*	0.0974	0.0572	0.0972
	[-1.67]	[-1.02]	[-1.3]	[-1.4]
N	7842	7842	7842	7842
R-sq	0.082	0.125		
Prob (F-statistic)	0.0000	0.0000	0.0000	0.0000
White's test	Prob>chi2=0.0000			
Wooldridge test	Prob>F= 0.0000			
Modified Wald test		0.0000		
Hausman test		573.97 0.0000		

t statistics in parentheses
** p<0.1, ** p<0.05, *** p<0.01*

Source: Summary of the author's data processing results

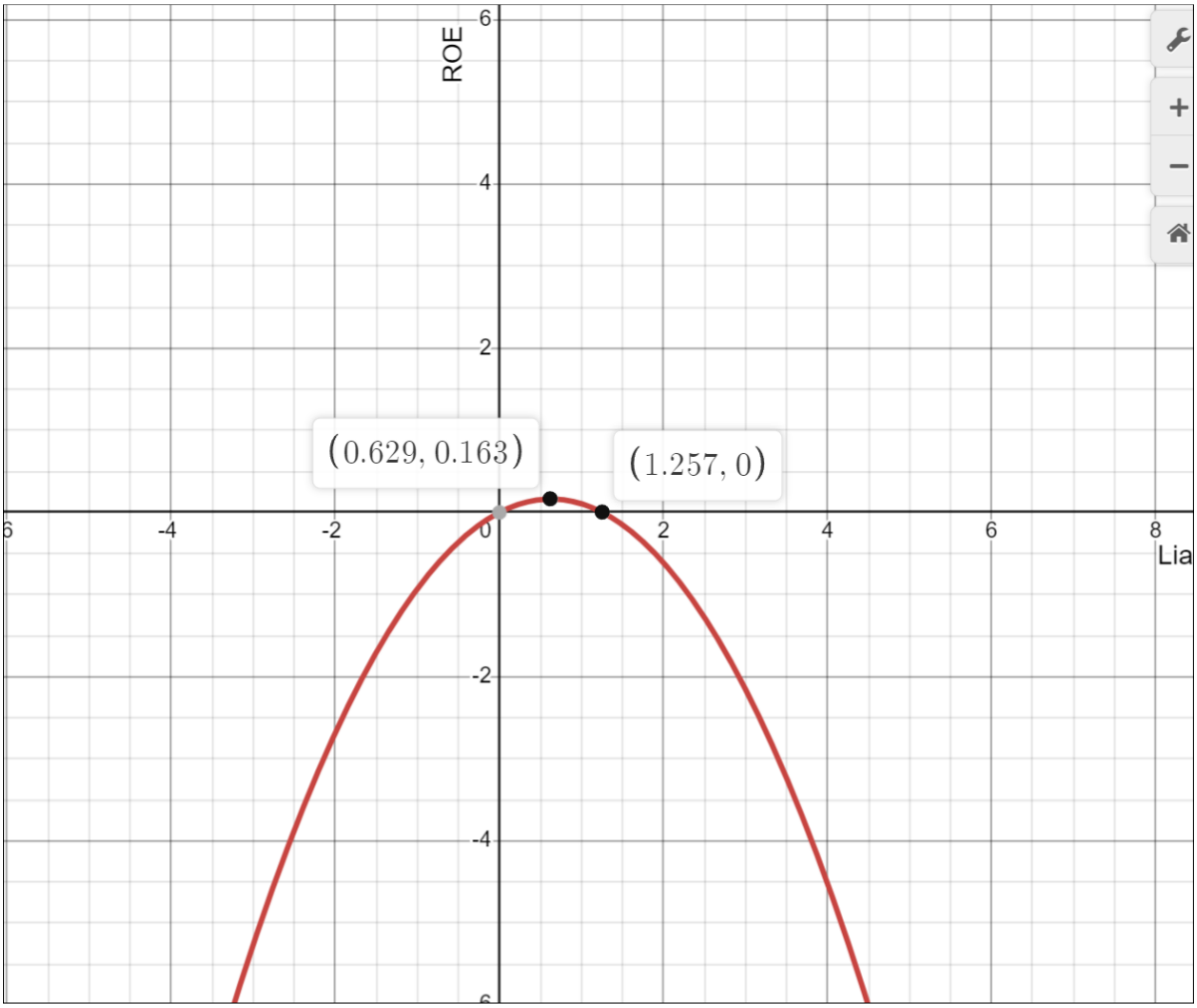

Figure 2: Nonlinear graph of the impact of financial leverage (Lia) on ROE

Source: Summary of the author's data processing results

5.4. Discussion

The results of the study found evidence of an inverted U-shaped nonlinear effect on ROA and ROE for the case of listed companies in Vietnam, which supports the research hypothesis H1. ROA is highest when the level of financial leverage expressed in debt ratio is 58.6%. ROE is highest when the level of financial leverage expressed in debt ratio is 62.9%. When these thresholds are not exceeded, financial leverage has the effect of increasing ROA and ROE of enterprises. Therefore, it has a positive impact on profits. The results of this empirical study support the experimental studies of Nieh et al. (2008); Yang et al. (2010); Berzkalne (2015) on second-order nonlinear effects, supporting the authors Silambarasan & Azhagaiah (2015), Shahzad et al. (2016), Tayyaba (2013), Habib (2014), Kumar (2014), Patel (2014) about the linear effect. Moreover, the nonlinear relationship according to the results of the study just mentioned supports the theory of trade-offs in capital structure, if the level of financial leverage formed from debt is low, the net benefit will be positive and contribute to increase profits and vice versa. In addition, the existence of an inverted U-shaped effect of financial leverage on profitability can also be explained by the relationship between the level of debt use and the cost of debt, thereby deciding whether or not to have effective use of debt. If the debt ratio increases but is still within the maximum limit so that companies can control the cost of debt well and ensure the effective use of debt, the profit will still increase. In contrast, excessive and increased debt utilization often leads to very substantial increases in interest rates where the income from additional investments may not be sufficient to cover the cost of debt and negative impact from debt use on profitability.
In addition to the impact of financial leverage on profits, the estimation results in Tables 4 and 5 also provide that the profits of companies listed on the Vietnamese stock market are also affected in the same direction with the company's liquidity (Liq).

6. Conclusion and recommendations

Profit is the basic and primary financial goal of companies, so it requires the company's managers to fully and reliably identify the relationship between profits and financial decisions. In the case of listed companies in Vietnam, the paper finds evidence of the existence of an inverted U-shaped nonlinear effect of financial leverage on profitability, and estimates the threshold at which profit is profit expressed in return on assets (ROA) and return on equity (ROE) reached the highest level for financial leverage represented by debt ratio (Lia) times 58, 6 and 62.9%. The research results suggest that companies need to determine a reasonable limit for the use of leverage in relation to the target profit, from which a reference to adjust the current leverage. Some recommendations for businesses are as follows:

If a business maintains a high debt ratio, the risk of the business is also high. Businesses will face financial distress when they are unable to pay their debts. This situation can cause some trouble for the business or the business may go bankrupt. In contrast, the issue of shares can help public companies attract a large amount of capital to expand the scope of business activities. However, the cost to issue common shares is high and the pressure to maintain the growth rate increases on enterprises. Enterprises also face other risks such as loss of control, company value decline if it does not meet investors expectations. Therefore, the selection of funding sources is an important issue. If financial leverage is used, a reasonable capital structure must be determined.

According to agency cost theory, debt is like a mechanism to monitor and encourage the performance of the board of directors because of the positive relationship between debt ratio and financial difficulties of the company. But considering the conflict between shareholders and creditors, debt has the effect of increasing agency costs. As debt levels rise, creditors tend to demand a higher interest rate on loans to compensate for the risks they may face. Each capital raising tool is issued, businesses have to spend certain costs. For debt instruments, the business needs to pay interest, for equity instruments, the business needs to meet investors' expectations through the level of dividends paid or the growth of the business in the future. Therefore, the policy on capital structure needs to harmonize the interests of shareholders, the Board of Directors, the executive board and creditors.

The article has provided more rigorous empirical evidence on the use of financial leverage system in companies, through which financial managers can refer to make appropriate decisions. Other actors have an information channel to compare and derive the leverage efficiency of companies. Although the article has made certain contributions as mentioned above, the explanations for the existence of nonlinear effects of each lever need to be further explained by factors such as revenue growth, investment efficiency, operating leverage, for indicators of enterprise profitability, future research can be extended to indicators such as return on sales (ROS), return on invested capital (ROI), earnings per share (EPS), market value to book value of stock (Tobin'Q).

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Fraudulent Financial Reporting and Fraud Pentagon: Case Study on Indonesia Stock Exchange

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Abstract
This study aimed to determine the fraud pentagon elements that significantly predict fraudulent financial reporting (FFR) in public companies listed on the Indonesian Stock Exchange in the consumer sector in 2018-2020. The study population comprised 176 public companies in the consumer cyclical and non-cyclical sectors listed on the Indonesia Stock Exchange determined by purposive sampling. Therefore, this study was conducted on 78 public companies in the consumer cyclical and non-cyclical sectors. Accordingly, the data was collected from a sample of 59 FFR and 19 non-FFR companies classified using the M-Score. The data collected were analyzed using multiple logistic regression. The results showed that three elements of fraud pentagon significantly predict financial fraud reporting on public companies listed on the Indonesia Stock Exchange. The three predicting elements are arrogance by the frequent number of CEOs' picture proxy, competence by undeclared policies on doubtful debts and accounts receivable, and rationalization by accounting policy proxy changes. Additionally, the changes in accounting policies proxy were the most significant predictor.

Keywords: Fraud Pentagon, Fraudulent Financial Reporting, Indonesia Stock Exchange

1. Introduction

Fraud is a crime frequently perpetrated by lower to upper-level employees, as well as accountants in companies (Dellaportas, 2013). Many reported FFR cases had eroded public trust in the accounting and auditing profession (Mohamed & Handley-Schachelor, 2014).

The Association of Certified Fraud Examiners Indonesia Chapter # 111 (ACFEIC) (2020) reported that 239 fraud cases in Indonesia caused a loss of IDR873,430,000,000 in 2019, with an average loss per fraud case of IDR7,248,879,668. Meanwhile, 38.5% of the cases resulted in a loss of IDR1,000,000,000 and above. The 2020 ACFEIC survey showed that financial report fraud has fewer cases than corruption and state or company asset misuse. However, this causes the largest average loss for the institution or companies for each case.

Studies on accounting fraud mainly focus on auditing and internal context control in fraud prevention and detection (Payne & Ramsay, 2005; Dellaportas, 2013). The financial report summarizes operational activities and describes the companies' financial condition prepared by management. The report is intended for shareholders, investors, and creditors. Moreover, the financial report is the management's accountability and efficiency in managing the resources entrusted to them (Mohamed Yusof, 2016). Management generally wants the companies' performance to be seen as proper by the financial report users. Therefore, this often promotes management to manipulate and commit deliberate fraudulent actions by removing data or changing numbers in the report. This is referred to as fraudulent financial reporting (FFR) (Spathis, 2002; Beneish et al., 2012; Huang et al., 2014). According to Dalnial et al. (2014b), FFR occurs in every company and becomes the spotlight in the public's and regulators' eyes. This is because FFR is the most detrimental to organizations and could be implemented by individuals in all professions. It usually occurs by falsifying the financial report to gain some advantage (Dalnial et al., 2014a). According to Beasley et al. (2010), FFR has significant consequences for companies and public trust in the capital market and other stakeholders. Consequently, this raises concerns about the financial reporting process's credibility and questions the role of auditors and regulators.

This study aimed to examine FFR in public companies listed on the Indonesia Stock Exchange (IDX) in 2018-2020 in the consumer sector. The analysis used the Fraud Pentagon approach proposed by Marks Jonathan (2012) with its five elements, including Arrogance, Competence, Opportunity, Rationalization, and Pressure, as fraud predictors. The study intended to determine the fraud pentagon elements that significantly predict fraudulent financial reporting in public companies listed on the consumer sector IDX in 2018-2020.

2. Literature Review and Hypotheses Development

2.1 Agency Theory

Agency theory provides a rich theoretical framework to understand processes within companies from the perspective of principals and agents (Boučková, 2015). The theory deals with explicit and implicit arrangements in information asymmetry between principal agents. It is also a rational choice of the interdependent principals and agents, though with different goals (Verstegen, 2001).

Jensen & Meckling (2019) stated that an agency relationship is a contract where agents must work on the principals' behalf. In this case, principals delegate decision-making authority to the agents. This contractual relationship maximizes utility for both parties only when the agents do not always act in the principals' interest. The explanation by Jensen & Meckling (2019) denotes that an agent may carry out the FFR.

2.2 Fraudulent Financial Reporting

Accounting scandals committed by public companies listed on the stock exchange have raised investor concerns about governance (Dunn, 2004). Fraudulent financial reporting involves exaggerating assets, sales, and profits or understating liabilities, expenses, or losses (Spathis, 2002). The increase in financial reporting fraud in public companies listed on the stock exchange raises concerns among investors, auditors, creditors, and other stakeholders (Razali & Arshad, 2014). According to previous studies, companies conducting FFR are motivated by poor financial performance, the desire to meet analyst estimates, compensation and incentive structures, and external funding (Zhang et al., 2022). Furthermore, studies showed that the need for external funding positively relates to the FFR reported (Erickson et al., 2000; Burns & Kedia, 2006). According to Beneish et al. (2012), FFR intentionally omits or misrepresents money or information that should be disclosed in the financial report.

2.3 Fraud and Fraud Pentagon

ACFEIC (2020) defined fraud as the misuse of positions for personal gain through organizational resources or assets. According to Albrecht et al. (2018), fraud includes all the ways human ingenuity could design to gain an advantage over others with false representations.

Marks Jonathan (2012) stated that the Fraud Pentagon is the predictor with five elements, including Arrogance, Competence, Opportunity, Rationalization, and Pressure. Each element was explained by Marks Jonathan (2012) as follows: Arrogance is the superiority or greed attitude of individuals believing they are not subject to internal control. Competence is the employees' ability to override internal controls, develop sophisticated fraud strategies, control social situations, and invite others to commit fraud for their benefit. Furthermore, an opportunity is a weak internal control that allows someone to commit fraud. Rationalization is justification for theft or fraud acts, while pressure is a motive to commit and conceal fraud. The five elements were used as variables in this study.

2.4 Hypotheses Development

2.4.1 Arrogance is an FFR Significant Predictor

The fraud pentagon theory by Marks Jonathan (2012) explains arrogance as an attitude of superiority shown by individuals in companies. It considers that the individuals are big egos, indicating they are non-subject to internal controls within the companies. This attitude could only be shown by the Chief Executive Officer (CEO), whose big egos resemble celebrities more than business people. In this study, the arrogance variable was proxied by the frequent number of CEOs' pictures in the companies' annual financial reports. Mohamed Yusof (2016) stated that numerous CEOs' pictures could significantly predict their arrogance.

A previous study in Malaysian public companies found that the frequent number of CEOs' pictures was the FFR significant predictor (Mohamed Yusof, 2016). The same result was reported by Chyntia Tessa & Harto (2016), Apriliana & Agustina (2017), and Siddiq et al. (2017) for Indonesian public companies. Based on this explanation, the first hypothesis was proposed as follows:

H_1: Frequent number of CEO pictures is FFR significant predictor in public companies in Indonesia.

2.4.2 Competence is an FFR Significant Predictor

Most studies relate competence to the financial variables' manipulation in the financial report, such as sales, receivables, and allowance for doubtful accounts receivable (Mohamed Yusof, 2016). In this study, competence was first proxied by undeclared policies on doubtful debts and accounts receivable in the annual financial report, as applied by Mohamed Yusof (2016). Hoberg & Lewis (2017) found that fraudulent management hides major issues, explains less about the sources of companies' performance, and reveals more of its positive impact.

Mohamed Yusof (2016) stated that undeclared policies on doubtful debts and accounts receivable predict FFR. Based on this explanation, the second hypothesis was proposed as follows:

$H_{2.1}$: Undeclared policies on doubtful debts and accounts receivable significantly predict the FFR in public companies in Indonesia.

CEOs are appointed to exercise management decision-making to maximize shareholder value. In this regard, underperforming shareholders consider whether to retain or dismiss underperforming CEOs. This encourages CEOs to report better results (Habib & Hossain, 2013). An individual's organizational position or function could provide the ability to create fraud. Moreover, this individual is smart enough to understand and utilize internal control weaknesses and use their position, function, or authority. A study found that 46% of fraud cases were committed by managers or executives (Wolfe & Hermanson, 2004).

Wolfe & Hermanson (2004) stated that applying routine changes to CEOs minimizes opportunities for fraud based on long-term knowledge of their functions and controls. Therefore, this study used the change of directors as the second proxy for the competence variable. Siddiq et al. (2017) reported in Indonesian public companies that a change of directors significantly and negatively predicts the FFR. Based on this explanation, the second hypothesis was proposed as follows:

$H_{2.2}$: The change of directors significantly and negatively predicts the FFR in public companies in Indonesia.

2.4.3 Opportunity Significantly Predicts the FFR

Rae & Subramaniam (2008) stated that opportunity is an internal control system's weakness exploited by employees, allowing fraud to occur. According to C. Albrecht et al. (2010), the opportunities for conducting FFR include a weak board of directors, inadequate internal controls, and the ability to obscure fraud in complex transactions. Drew & Drew (2010) found that companies with weak internal controls want to see whether employees exploit these weaknesses to commit fraud. Companies should hire financial experts with the knowledge and skills to analyze complex financial transactions. Therefore, this study proxied the first opportunity variable with the quality of external auditors.

Alleyne et al. (2013) and Ravisankar et al. (2011) stated that professional auditors should follow the ethics code to detect and report errors such as fraud due to their strategic position in conducting audits. In this regard, the Public Accounting Firm (PAF) is considered able to improve the companies' financial report quality to minimize the FFR possibility (DeAngelo, 1981). Large PAFs have internal policies and consistently implement them to achieve audit quality (Francis et al., 2013). In Indonesian public company, Apriliana & Agustina (2017) reported that the opportunity variable with a proxy for the external auditor quality significantly and negatively predicted the FFR. Therefore, the third hypothesis was proposed as follows:

$H_{3.1}$: The quality of external auditors significantly and negatively predicts the FFR in Indonesian public companies. Mohamed Yusof (2016) measured opportunity from an organizational perspective using a proxy for the board directors composition comprising executive and non-executive directors. The imbalance is the weakness in internal control, allowing management to practice FFR. The many non-executive directors in the board directors composition have a low level of FFR (Zhizhong et al., 2011). In line with this, Mohamed Yusof (2016) stated that the board directors' composition significantly predicts the FFR.

The proxy used in this study is the board commissioners' composition, as stipulated in the Financial Services Authority Regulation Number 33/POJK.04/2014 concerning Directors and Board Commissioners of Issuers or Public Companies. Based on this explanation, the third hypothesis was proposed as follows:

$H_{3.2}$: The high number of independent commissioners on the board of commissioners significantly negatively predicts the FFR in public companies in Indonesia.

2.4.4 Rationalization Significantly Predicts the FFR

The fourth fraud pentagon theory element is rationalization, implying the justification for theft or fraud in companies (Marks Jonathan, 2012). Shelton (2014) stated that rationalization is how people justify fraud. According to Ravisankar et al. (2011), the choice of rationalization depends on the individual and the conditions they face.

Syahria (2019) found that someone first seeks rationalization before committing fraud. Change in auditors is one way to rationalize because it eliminates traces of fraud found by previous auditors. This promotes companies to replace independent auditors or public accounting firms (PAF) to cover up fraud (Syahria, 2019). Therefore, this study first proxied rationalization through the change in auditors. Previous studies on public companies in Indonesia found that changes in auditors significantly predicted the FFR (Siddiq et al., 2017; Syahria, 2019). Based on this explanation, the fourth hypothesis was proposed as follows:

$H_{4.1}$: Change in auditor significantly predicts the FFR in Indonesian public companies.

Rationalization is a fraud risk factor that leads to the FFR (Mohamed Yusof, 2016). It justifies fraudulent behavior resulting from a lack of personal integrity or other moral reasons (Rae & Subramaniam, 2008). Mohamed Yosuf (2016) measured rationalization from an organizational perspective and showed that companies change accounting policies based on accounting standards. However, companies could justify fraud while disguising FFR actions through various accounting policies. Chen et al. (2021) stated that company executives grow overconfident with time and adopt more aggressive accounting practices, increasing FFR.

Based on the explanation, the second proxy for the rationalization variables are the changes in accounting policies. Regarding Malaysian public companies, Mohamed Yosuf (2016) stated that changes in accounting policies significantly predicted the FFR. Therefore, the second hypothesis was proposed as follows:

$H_{4.2}$ Changes in accounting policies significantly predict the FFR in Indonesian public companies.

2.4.5 Pressure Significantly Predicts the FFR

The fifth element of the fraud pentagon theory is pressure, usually arising from personal unshareable issues. The inability to share problems motivates others to commit fraud (Dellaportas, 2013). According to Vona (2012), personal and company factors influence individuals' pressure. Personal factors could be caused by lifestyles exceeding income. In contrast, company factors result from offering companies' shares to executives and implementing performance-based salary schemes. Dandira (2011) stated that financial analysts, news media, and internet blogs pay more attention to executive compensations in companies' performance. Therefore, company factors with salary schemes could motivate executives to carry out FFR (Mohamed Yusof, 2016).

Companies that commit fraud often change their growth performance to present a positive image to shareholders. This happens even when the actual performance mismatches the stated financial report (C. Albrecht et al., 2010). Growth was linked with fraud by Lou & Wang (2009), Mohamed Yusof (2016), Apriliana & Agustina (2017), Siddiq et al. (2017), Aprilia (2017), and Syahria (2019).

Apriliana & Agustina (2017), Siddiq et al. (2017), Aprilia (2017), and Syahria (2019) in the Indonesian public found that the pressure differences with the proxy for asset growth significantly predict the FFR. In this study, the pressure variable was proxied by ROA growth, the same proxy used by Mohamed Yusof (2016). Therefore, the fifth hypothesis was proposed as follows:

H_5: ROA growth significantly predicts FFR in Indonesian public companies.

3. Methods

3.1 Operationalization and Variable Measurement

This study used FFR as the Dependent Variable (DV) to classify public companies in the FFR category using the M-Score formula (Herawati, 2015). The M-Score formula was quoted from Aghghaleh et al. (2016):

$$\text{M-Score} = -4.84 + 0.92*\text{DSRI} + 0.528*\text{GMI} + 0.404*\text{AQI} + 0.892*\text{SGI} + 0.115*\text{DEPI} - 0.172*\text{SGAI} + 4.679*\text{TATA} - 0.327*\text{LVGI}$$

Note:
DSRI = Days' Sales in Receivable Index
GMI = Gross Margin Index
AQI = Asset Quality Index
SGI = Sales Growth Index
DEPI = Depreciation Index
SGAI = Sales, General, and Administrative Expenses Index
TATA = Total Accruals to Total Assets Index
LVGI = Leverage Index

Companies whose M-Score < -2.22 do not carry out FFR in the accounting period. In contrast, those with an M-Score > -2.22 carry out the FFR in the accounting period.

The Independent Variables (IV) are the five fraud pentagon elements with their proxies for a complete operationalization and measurement shown in Table 1:

Table 1: Variable Operationalization and Measurement

Variable	Proxy Variable	Formula	Measurement	Scale
FFR (DV)	M-*Score*	M-Score = -4.84 + 0.92* DSRI + 0.528*GMI + 0.404* AQI + 0.892*SGI + 0.115*DEPI – 0.172*SGAI + 4.679*TATA – 0.327*LVGI	Dummy variable = 1 if the public companies' M-Score > -2.22 otherwise = 0	Nominal
Arrogance (IV)	*Frequent number of CEOs' pictures* (CEOPIC)	-	Number of CEO pictures in the Annual Report	Interval
Competence (IV)	*Undeclared policies on doubtful debts and accounts receivable* (UNDPOL)	-	Dummy variable = 1 if it does not announce the doubtful accounts and accounts receivable policy, otherwise = 0	Nominal
	Change of directors (COD)	-	Dummy variable = 1 if there is a change of directors during the observation period, otherwise = 0	Nominal
Opportunity (IV)	*Quality of external auditor* (QOEA)	-	Dummy variable = 1 if not using the audit services of the BIG 4 Public Accounting Firm, otherwise = 0	Nominal
	Composition of the board of commissioners (COBOC)	-	Dummy variable = 1 if the composition of independent commissioners is 30%, otherwise = 0	Nominal
Rationalization (IV)	*Change in Auditor* (CIA)	-	Dummy variable = 1 if there is a replacement of the Public Accounting Firm during the observation period, otherwise = 0	Nominal
	Changes in accounting policies (CACCP)	-	Dummy variable = 1 if there is a change in accounting policy during the observation period, otherwise = 0	Nominal
Pressure (IV)	*Growth ROA* (GROA)	$\frac{ROA_t - ROA_{t-1}}{ROA_{t-1}}$	ROA growth percentage	Ratio

3.2 Population and Sample

The study population comprised 176 public companies in the consumer cyclical and non-cyclical sectors listed on the Indonesia Stock Exchange determined by purposive sampling. The study excluded 11 companies because the financial reports were not presented in IDR. Subsequently, 63 companies were excluded because the annual financial reports were unavailable consecutively during the 2018- 2020 period. The last 24 companies were issued because the annual financial report did not provide complete data to calculate the M-Score value. Therefore, this study was conducted on 78 public companies in the consumer cyclical and non-cyclical sectors. The samples were classified into companies implementing FFR and those not, using the M-Score formula. The results showed 59 sample companies implemented FFR, while 19 did not.

3.3 Data Analysis

Each variable proxy was examined using data in the annual financial report form for three years. The data were sourced from the Indonesia Stock Exchange at Jenderal Sudirman Kav Street, No. 52-53, South Jakarta, 12190, Indonesia. The dependent variable was a categorical non-metric or binary variable with two categories. The independent variables comprised numerics with non-metric variables. Therefore, the most appropriate analytical tool is multiple logistic regression (Field, 2009; Hair Jr Joseph et al., 2009). This multiple logistic regression could be used to estimate the relationship between dependent categorical and predictor variables (Hair Jr Joseph et al., 2009). The multiple logistic regression equation is as follows:

$$\text{FFR} = \alpha_0 + \beta_1\, CEOPIC_i + \beta_2\, UNDPOL_i + \beta_3\, COD_i + \beta_4 QOEA_i + \beta_5\, COBOC_i + \beta_6 CIA_i + \beta_7\, CACCP_i + \beta_8\, GROA_i$$

Note:

FFR	= Fraudulent financial reporting
CEOPIC	= Frequent number of CEOs' picture
UNDPOL	= Undeclared policies on doubtful debts and accounts receivable
COD	= change of directors
QOEA	= Quality of external auditor
COBOC	= composition of the board of commissioners
CIA	= Change in Auditor
CACCP	= Changes in accounting policies
GROA	= Growth ROA

Classification prediction accuracy and pseudo R^2 values were used to determine the goodness-of-Fit-of the multiple logistic regression estimated model (Hair Jr Joseph et al., 2009). The classification prediction accuracy was determined by calculating the probability value (Agresti, 2018). The pseudo R^2 value used was Nagelkerke's because its coefficient value could reach a value of one (Field, 2009). Additionally, interpreting Nagelkerke's coefficient value is similar to interpreting the value of R^2 in multiple linear regression (Field, 2009; Hair Jr Joseph et al., 2009).

The Wald test used the formula developed by Field (2009) to determine the significant effect of each independent variable on the dependent variable. The test could also be performed by comparing the sig value with the specified α level. The multiple logistic regression coefficients are significant when the sig value is less than the specified α. Moreover, the independent variable with the most dominant effect on the dependent variable was determined using the Standardized Effects with the formula quoted from Agresti (2018). The variable with the most significant standardized effect value is the most influential. All data were processed using SPSS version 20 with a significant level of 95% for hypothesis testing.

4. Results

4.1 Descriptive Statistic

This study used three categorical variables, the first being competence proxied by UNDPOL and COD. The results showed that 37 (47.44%) of the 78 sample companies did not declare policies regarding doubtful debt and accounts receivable. Furthermore, 24 companies (30.77%) changed directors, as indicated in Table 2. The second variable is opportunity proxied by QOEA and COBOC. Regarding QOEA proxies, 48 companies (61.54%) did not use PAF BIG 4. Furthermore, three companies (3.85%) had COBOC ≤ 30%, while 75 companies (96.15%) had COBOC > 30%.

The third categorical variable is rationalization proxied by the CIA and CACCP. Nine companies (11.54%) changed auditors for CIA proxies, while 69 (88.46%) did not. Moreover, 55 companies (70.51%) changed their accounting policies, while 23 companies (29.49%) did not. Table 2 describes the frequency of categorical variables resulting from logistic regression.

Table 2: Categorical Variable Frequency

Variable	Proxy		Frequency	%
Competence	UNDPOL	Undeclared	37	47.44
		Declared	41	52.56
	COD	Change	24	30.77
		Not Change	54	69.23
Opportunity	QOEA	Not BIG 4	48	61.54
		BIG 4	30	38.46
	COBOC	≤ 30%	3	3.85
		> 30%	75	96.15
Rationalization	CIA	Change	9	11.54
		Not Change	69	88.46
	CACCP	Change	55	70.51
		Not Change	23	29.49

4.2 Logistic Regression Results

This study tested eight hypotheses regarding how fraud pentagon elements significantly predict FFR in the consumer sector IDX. The elements include arrogance with CEOPIC proxies, competence with UNDPOL, and COD proxies, the opportunity with QOEA and COBOC proxies, and rationalization with CIA and CACCP proxies. Moreover, GROA was used to proxy pressure, while hypothesis testing used multiple logistic regression. Tables 3 and 4 show the results of multiple logistic regression and Standardized Effects calculations results.

Table 3: Logistic Regression Results

Variable	Proxy	Coefficient	Wald	Sig	Description
Arrogance	CEOPIC	1.746	4.413	0.036	Significant
Competence	UNDPOL	3.692	4.168	0.041	Significant
	COD	-1.710	0.708	0.400	Not Significant
Opportunity	QOEA	0.567	0.156	0.693	Not Significant
	COBOC	-0.832	0.025	0.875	Not Significant
Rationalization	CIA	0.698	0.148	0.700	Not Significant
	CACCP	4.710	9.620	0.002	Significant
Pressure	GROA	0.276	1.619	0.203	Not Significant
Constant					
Nagelkerke R Square		= 0.844			
Predicted with correct classification					
Non FFR		= 84.2%			
FFR		= 98.3%			
Overall		= 94.9%			

Table 4: Calculation results of Standardized Effects

Variable	Proxy	Logistic Regression Coefficient	Standard Deviation	Standardized $(\widehat{\beta_j s_{x_{j^*}}})$	Effects

Arrogance	CEOPIC	1.746	1.214	2.119
Competence	UNDPOL	3.692	0.503	1.856
	COD	-1.710	0.465	-0.794
Opportunity	QOEA	0.567	0.490	0.278
	COBOC	-0.832	0.194	-0.161
Rationalization	CIA	0.698	0.322	0.224
	CACCP	4.710	0.459	2.162
Pressure	GROA	0.276	2.493	0.688

5. Discussion

5.1 Arrogance

The calculations showed that the arrogance variable proxied by CEOPIC has a logistic regression coefficient of 1.746, a Wald value of 4.413, and a sig value of 0.036, as indicated in Table 3. The sig value of 0.036 is smaller than the specified alpha significance level of 0.05 (sig 0.036 < α 0.05). This indicates that the arrogance variable with the CEOPIC proxy significantly predicts the FFR occurrence in public companies listed on the consumer sector IDX. It means that more photos of the CEO in the annual financial report indicate more FFR in these public companies. The results support Mohamed Yusof (2016) regarding public companies in Malaysia. Public companies in Indonesia show the same results, strengthening Chyntia Tessa & Harto (2016), Apriliana & Agustina (2017), and Siddiq et al. (2017).

5.2 Competence

Table 3 shows that the logistic regression coefficient of the UNDPOL proxy competence variable is 3.692, with a Wald value of 4.168 and a sig of 0.041. The sig value of 0.041 is smaller than the alpha of 0.05 (sig 0.041 < α 0.05). It means that the UNDPOL proxy competence variable significantly predicts the FFR occurrence in public companies listed on the consumer sector IDX. This result supports Mohamed Yusof (2016). Furthermore, the significance value for the COD proxy is 0.400, as shown in Table 3, which exceeds alpha 0.05 (sig 0.400 > α 0.05). This means that the COD proxy does not predict the FFR occurrence in public companies listed on the IDX in the consumer sector. However, the results for the COD proxies contradict Siddiq et al. (2017).

5.3 Opportunity

Opportunity variables with QOEA and COBOC proxies have sig values of 0.693 and 0.875, respectively, as shown in Table 3. This sig value exceeds the alpha level of 0.05, equaling a sig of 0.693 and 0.875 > α 0.05. These results contradict Apriliana & Agustina (2017). It indicates that the opportunity variable with two proxies, QOEA and COBOC, does not predict FFR in public companies listed on the IDX in the consumer sector.

5.4 Rationalization

Rationalization was proxied by the CIA and CACCP. For the CIA proxy, the sig value was 0.700, as shown in Table 3, exceeding the alpha level of 0.05 or sig 0.700 > α 0.05. This means the CIA proxy does not predict the FFR in public companies listed on the IDX in the consumer sector. The CACCP proxy has a logistic regression coefficient of 4.710, a Wald value of 9.620, and a sig value of 0.002. This sig value is lower than the alpha level of 0.05 (sig 0.002 < α 0.05). This result signifies that the CACCP proxy significantly predicts FFR occurrence, strengthening Mohamed Yusof (2016).

5.5 Pressure

The pressure variable was proxied by GROA. Table 3 shows that the sig value for the GROA proxy from the calculation results is 0.203. This sig value exceeds alpha 0.05 (sig 0.203 > α 0.05), showing that the GROA proxy does not predict FFR, contradicting Mohamed Yusof (2016).

5.6 Standardized Effects

The consumer sector is determined by significant standardized effects regarding the variables predicting FFR in public companies listed on the IDX. The rationalization variable with the CACCP proxy has a standardized effect of 2.162. Also, it is the largest standardized effect value of all proxies, as illustrated in Table 4. This denotes that the proxy for accounting policy changes significantly predicts the FFR in public companies listed on the IDX in the consumer sector. It is followed by the variable arrogance proxied by the frequent number of CEOs' pictures. The next following variable is competence proxied by undeclared policies on doubtful debts and accounts receivable.

6. Conclusion, Limitation, Future Research

This study aimed to examine fraud pentagon elements that significantly predict FFR in public companies listed on the consumer sector IDX. The results showed that arrogance, competence, and rationalization proxied CEOPIC, UNDPOL, and CACCP to predict FFR. Moreover, the CACCP proxy was a significant predictor compared to other proxies studied. These results are supported by the goodness of fit of the estimated model with a correct classification rate for Non-FFR companies of 84.2%, FFR companies of 98.3%, and an overall score of 94.9% (Table 3). The findings support Dalnial et al. (2014a) and Dalnial et al. (2014b) that the classification is correct when around 73% of the sample predictions are correct for FFR and non-FFR companies. Moreover, they are reinforced by the Nagelkerke R Square value obtained at 0.844. This implies that the study compatibility of the multiple logistic regression model is 84.4%.

This study took samples only from public companies listed on the IDX in the consumer sector. Therefore, it did not fully describe the public companies listed on the IDX. Future studies could expand the sample coverage to the consumer and other sectors. The sectors to be studied include those where the annual financial reports are calculated based on Gross Margin Index (GMI). Furthermore, the studies could use the M-score to classify FFR and non-FFR companies.

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Household Transfer to Family in Indonesia: The Parental Role Model

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Abstract
In this paper, we study the impact of parental transfer on the behavior of their next generation's transfer using corrected data from Indonesian Family Life Surveys (household size), and an inter generations pairing method based on the demonstration effect theory. Our findings support the existence of parental role models, particularly transfers given to family members living outside households (parents, siblings or children). Specifically, the transfer decision of adults living independently from their origin household is positively affected by their membership in the origin household. This parental role model exists after controlling endogeneity problems contained in the role model estimation framework. This finding empirically confirms the vital role of parents in preserving altruism in society.

Keywords: Family Transfer, Role Model Effect, Endogeneity

1. Introduction

In developing countries, private transfers are functional to poverty alleviation together with limited state budgets. A half century ago, Boulding et al., (1972) have proved that a voluntary income distribution pattern increases social welfare better than a perfectly competitive market. Cox et al., (1990) also found that social capital had become a form of social safety net like employment insurance, health insurance, or cash transfer programs provided by the government. Recently, Nikolov et al., (2020) emphasized that governments' poverty reduction programs should be social capital friendly because the crowding effect in developing countries are various such as 0%-25% of private transfers in Vietnam (Van den Berg et al., 2011) or even 88% in Mexico (Mejía-Guevara, 2015). In addition, even though the poverty alleviation budget has been increasing like in Indonesia, it has not been followed by a steep reduction in poverty, indicating ineffective programs (Nasution, 2016). Governments should adjust public transfers to private transfers for optimum social welfare by understanding the community's social participation and using that information to evaluate social programs.

However, the relationship of households transfer to family members (parents, siblings, or children) between an origin household and its immediate generation is empirically less studied than other topics related to private transfer. The most prominent reason is the limited private transfer data. Indonesia also has had this problem resulting in underreported household participation in zakat, infaq, and alms (types of household transfers based on the Quran) from its potential during the last decade based on the National Amil Zakat Board Annual Report in 2020. This report admitted that households tend to donate directly to recipients or through unofficial institutions. In contrast, an international non-government organization called Charity Foundation International placed Indonesia as the most generous nation in the world in 2017 as resumed from the private transfer conducted by Indonesians.

Efforts to understand individuals' factors to transfer resources to other family members have been made by researchers (see, e.g. Deb et al., 2010). They believe these factors are essential because transfer to family is a proven alternative to social safety nets in developing countries like Indonesia. It is theoretically categorized as one of the purest altruisms compared with other types of private transfer (transfer to strangers and community participation) that tend to return for the donors in the future. However, the focus is on preserving private transfers with the presence of public transfers like cash transfers from the government (the study on the crowding-out effect of government cash transfers on private transfers). The relationship between transfers to family of two generations is not only quite neglected but also vital. The empirical nature of intergenerational transmissions of social values within this transfer is significant in designing friendly public policies to existing social values.

In this paper, we present updated evidence on two aspects of household transfer to family members. First, we clarify the role of family in building this transfer behavior to immediate generations. This clarification is based on the several transmission mechanisms such as parents-initiated or children-initiated transmission (Cox et al., 1998; Jellal et al., 2000), income and wealth (Grawe et. al., 2002), or shared tastes and preferences. This study uses updated datasets from Indonesian Family Life Survey (IFLS) containing corrections on the calculation of household size (number of household members) as one of the aspects affecting transfers to family. Second, as an effort to clarify this role, we find that unobservable factors are important in determining the results of the analysis. Specifically, the assumption of endogeneity used in tackling these factors gives different results of estimation. In their study, Deb et al. (2010) provided the implication of this assumption in role model estimation. The endogeneity of origin household transfer provides statistically significant estimation parameters while the opposite occurs (if exogeneity is applied in the estimation).

One comprehensive datasets to analyze this problem is the Indonesia Family Lifetime Survey (IFLS). The survey is panel data on various information regarding households (including household transfers) from 1993 to 2014. Deb et al. (2010) conducted the most relevant research using the 1997 IFLS. The study found that parental transfer positively affects children's transfer, selecting only sibling households (excluding parents and children households from the family) as the recipients. They found that the transfer of origin households to siblings positively influences the transfer of their split-offs to their siblings by inserting the amount of parental household transfer as an affecting variable in the split-off transfer using the same IFLS wave (the second/1997) data.

In contrast, the theory of role models mentioned that the transmission of the benefits of giving transfers to the next generation occurs when the next generation observes the origin. Therefore, using the same year data for origin households and their split-off in a role model theory has a potential drawback in presenting the learning process. Alternatively, applying multiple IFLS waves in the analysis of role model theory could find different results. Cox et al., (2005) also have emphasized in the demonstration effect theory that the prerequisite for intergenerational transmission is that the learning process must occur from childhood. Parents realize their influence on their children's behavior.

Therefore, this study revises the findings on household transfer in Indonesia by using a different research method that benefits five waves of IFLS. This research reviews the transfer relationship between parents and children in households, particularly for families as recipients. This study uses updated datasets from IFLS 5 that suggest a correction on the calculation of household size (number of household members) as one of the aspects affecting transfers to family. However, this study anticipates many determinants of children's prosocial preferences and behavior such as information media, technology, and even heredity. Therefore, this research carefully concludes this causal relationship.

Our results on this type of private transfer suggest the important role model of the original household on the immediate generation with respect to transfer to family. Children observe and follow their parents' transfer to family positively. The more transfer to family conducted by origin households in the past induces more transfer to family made by children in the future. The novel pairing method between parents and children used in this study produced more logical results even though the assumption of exogeneity was used.

The paper is organized as follows: in Section 2, we provide the conceptual framework of role model estimation using IFLS data. In Section 3, we describe the data and model of estimation including selected variables, econometric issues regarding unobservable variables and the solutions. We describe the results and discussion in Section 4. Section 5 concludes and recommends further research.

2. Conceptual Framework

The recipients of household transfers can be family, strangers, and the community. This study focuses on the first recipient because data on the last two recipients are rare. Related to motives, Frankenberg et al., (2002) and Park (2003) found several backgrounds for household transfer to family. The first motive is impure altruism; donors (either as parents or adult children) expect returns when experiencing shocks in the future. Another motive is the exchange of money in which the recipients repay the transfer by doing donor household errands. Third, the motive is reciprocation by the child to parents for the child's education. Purer altruism exists in the transfer to siblings. Furthermore, Witoelar (2013) used IFLS 1, 2, 3, and first difference and two-stage least squares (2SLS) methods to find a consumption risk-sharing practice between the donor and relative households. Donor households generate additional utility by maintaining households' consumption. Concerning labor supply, Cameron et al., (2008) used IFLS 1 and the maximum likelihood estimation method in estimating financial and time assistance from family members who are still in the same house. The study found that these assistance could not reduce parents' time allocation in the workforce.

Deb et al. (2010) simultaneously analyzed transfers to relatives and communities as a pioneer and found two main conclusions. First, the role model of parental household transfer to their split-offs exists. The more an origin household makes a transfer to family, the more a split-off household makes a transfer to family. Second, the correlation between unobserved heterogeneities of transfer to relatives and the community indicates that those heterogeneities are complementary. They paired the parent household and their split-off using the IFLS 1993 (origin only) and IFLS 1997 (origin and split-off). Then they used only the 1997 wave to test the role model effect. Chiteji et al., (1999) emphasized that children's learning process from their parents (limited to asset ownership) should take adequate time. Using only one cross-section of data could not reveal the impact of the learning process. This is the main reason for this study, to give adequate time for the learning process reflected in the data used.

Conceptually, there are several mechanisms of transmission of prosocial behavior between generations. First, children observe the prosocial behavior of their parents from childhood until they form a new household. The observation can happen intentionally or unintentionally. Second, parents intentionally influence children's giving behavior (Cox et al., 1998). The third mechanism looks at income and assets as the determinant of household transfers. Parents' income and wealth tend to be passed down to their children, and so does the behavior of giving to other households (Grawe et al., 2002). Finally, this transmission mechanism can occur from internal and external factors of parents - children who both shape the character of parents - children in donating. An example is the similarity of hobbies, preferences, and other supporting factors.

Transmission can succeed and fail depending on many factors. A successful one is when a child's behavior reflects the values from parents and vice versa. Environmental factors, scientific advances, shocks, and even disruptions can influence the transmission positively or negatively. Researchers must control them in estimations of parental transfer impact on children's transfer. Transmission can also occur intentionally or unintentionally. Children can observe parental behavior and naturally imitate it in the future without parental encouragement. They realize the benefits of following the behavior of their parents. On the other hand, parents may not explicitly or unconsciously have transmitted values to their children. This study focuses on the transmission result without considering intentional or unintentional factors in the process.

An important point to underline is that the child begins receiving the transmission with the endowment of social capital. Then, the transmission of social values from parents combined with external factors occurs during childhood, adolescence, and adulthood until the child forms a new household. The theoretical basis of the role model can be described in the equation model as follows:

$$Aware_{net} = \propto parents + environment - Aware_0 \quad (1)$$

The left side of the linear equation model (1) is the net level of child awareness on the benefit of giving transfer as the result of the influence of parents and environmental factors, minus the initial level of child awareness (characteristic of the child or endowment). The symbol α measures children's ability to absorb parental transmissions and describes the characteristics of the child. This accumulation of awareness affects the behavior of the child in the future.

Equation (1) can be applied in household transfers. Parents make transfers to relatives within a period observable by children. Parents have motivation in making the transfer, either pure or impure altruism. The child observes this behavior over time and gains awareness of its benefits. Simultaneously, external factors influence this learning process until children leave their parents to form a new household. If children are fully aware of the benefits of household transfers, their future household transfer behavior is affected by the role model of their parents. In contrast, if children gain no awareness of the benefits or values of household transfers, their parents' role models have no impact on their future household transfer behavior.

This condition can be described in the equation function as follows:

$$Transfer = function(Aware_{net},\ character) \quad (2)$$

where:

$$\frac{\partial Transfer}{\partial Aware_{net}} > 0 \qquad and \qquad \frac{\partial Transfer}{\partial Aware_{net}} >< 0$$

The transfer behavior of children's households is affected by information obtained from parents and their characteristics. The transmission of benefits information of household transfers from parents positively affects the transfer behavior of children. Characteristics of children also theoretically and empirically influence household transfer either positively (income, education, age, sex, residence) or negatively (i.e. household size, per capita expenditure).

3. Data, Method and Estimation

The data used in this research is taken from Books 1, 2, and 3 of IFLS 1 (1993) – 5 (2014) (see Frankenberg et al., 1995; Frankenberg et al., 2000; Strauss et al., 2004; Strauss et al., 2009; and Strauss et al., 2016). The data of split-off households in IFLS 1 (878) and IFLS 2 (307) were excluded from the analysis because the numbers were smaller than IFLS 3 (2,646), IFLS 4 (4,033), and IFLS 5 (4,003). Thus, this study uses pairing households of split-off households that occurred from IFLS 3 (2000) until IFLS 5 (2014). The focus is on pairs of parents and children who form a new family or split off. Together with death and moving, sample selection used in IFLS could cost samples lost enormously. However, tracking the target respondents who move residence has minimized the attrition threat (see Thomas et al., 2012). Children's households also have overtaken the number of missing samples resulting in the number of household samples increasing in each wave.

The selection of parent-child pairs in this study is assumed random. A parent-child pair exists only if a child leaves the original household. Children have free rights and are not limited to specific socioeconomic and demographic conditions. For example, two individuals (children) with identical characteristics except for domicile (one lives in a rural area and the other in an urban area) have no difference when deciding to marry/leave their original household. This applies to age, gender, level of education, religion, and income.

The estimation in this study modifies the transfer equation by Deb et al. (2010) with two transfer equations mentioned in (3) and (4). The left-hand and right-hand variables are the corresponding means for each pairing criterion (2000, 2007, and 2014). The rule for matching origin and split-off to their IFLS waves is when the split-off leaves the origin household. If a child left the origin in 2000, the data used for the origin is from IFLS 1993-1997 and the data used for the child is from IFLS 2000-2014. If a child left the origin in 2007, the data used for the origin is from IFLS 1997-2000 and the data used for the child is from IFLS 2007-2014. Finally, if a child left the origin in 2014, the data used for the origin is from IFLS 1993-2007 and the data used for the child is only from IFLS 2014.

$$\widehat{Tf}_p = \gamma \widehat{Z_p} + \widehat{u_p} + \widehat{\varepsilon_p} \quad (3)$$

$$\widehat{Tf}_{p1} = \gamma \widehat{Z_{p1}} + \rho \widehat{Tf}_p + \widehat{u_{p1}} + \widehat{\varepsilon_{p1}} \quad (4)$$

Equations (3) and (4) are the parents and children's transfer to family equation, respectively. The symbol $\widehat{Tf}_p$ and $\widehat{Tf}_{p1}$ are means of transfer to families by parents and children, respectively. The symbols $\widehat{Z_p}$ and $\widehat{Z_{p1}}$ are characteristics of parents and children, respectively. Symbols u and ε are components of the error term, in which u are unobservable variables other than Z that influence Tf. The symbol u represents the heterogeneity in each equation. Variable u is assumed uncorrelated with ε. The symbol ε is a composite error term with zero expectations. The symbol γ in (3) and (4) is the coefficient of each characteristic of parents or children. Symbol γ indicates the effect of these characteristics on their transfers to families. The impact of parents' transfer on children's transfer is estimated by inserting Tf_p into (4). Symbol ρ indicates whether there is an effect or not, and if so, how does it affect. Variables u are assumed not to change over time so that the average value does not affect the estimate. The variable ε was initially to have a zero so that the mean also does not affect the estimation if the dependent and independent variables use the mean.

Endogeneity might exist in (3) and (4) because of measurement errors of the independent variables, relevant independent variables exclusion, a reciprocal causality between the independent and dependent variables, and the inclusion of dependent variables of (3) into (4) as additional independent variables. Concerning measurement errors, data cleaning and transformation of monetary values are steps to balance the data. For example, this study excludes household transfers in terms of goods because their value validity is low. Other than that, IFLS has been a reference for various international researches signaling the quality of the data. For the second reason, expenditure, age, years of education, sex, residence, household size, and marital status are the most relevant and available data that affect household transfers. Concerning reciprocal causality between transfers and expenditure, this research assumes that the latter affects transfers, and the opposite does not apply. Also, the transfer of a child does not affect the transfer decision of the parent household. A correlation between parental transfer and other independent variables can exist after inserting the dependent variable of (3) into (4) (as an independent variable). The error term in equation (4) cannot be zero. Thus, this research uses the instrumental variable approach. Following Deb et al. (2000), this study selects the independent variables in (3) to instrument parental transfers in (4). Age, gender, education level, domicile location, religion, household burden, and expenditure (all in the parental generation) empirically and theoretically affect parent transfers but are uncorrelated with the error term of the equation for child transfers.

Next, the non-trivial zeros of household transfers (censored from below) indicate Tobit estimation as the suitable method for estimating (3) and (4), particularly the ivTobit (instrument variable Tobit). The value for each variable is the average according to the split-off cut-off. This research also estimates transfer equations using the exogeneity of parental transfers assumption as a comparison for the endogeneity assumption. This study uses STATA in the model estimation, the cleaning, and balancing of the data and presents the results in tables and interpretation by comparing them with other relevant research results.

There are other potential variables in IFLS to approach the transfer variable of the household. Following Witoelar (2013), business assets and community facilities can be instrument variables for household transfers. However, using business assets produces insignificant estimation for children transfer because measurement errors of assets are potentially high in IFLS. Concerning community facilities, there is a significant reduction in parent-child pairs when banks and post offices are in the equation. Thus, this research excludes both as instrument variables.

The solution for sample selection bias is using IFLS data from five waves of 21 years. The usage of five waves minimizes the decision of a child's household not to live at home with their parent's household, for example, because they already have children, get work, and want to live independently from their parents. Also, this provides sufficient time to capture the dynamics of the decision to transfer to parents' households and children's households. Given a longer observation duration, the number of parent-child pairs increases significantly. Around 767 pairs resulted from Deb et al. (2010), but this study generated up to 4,033 pairs.

The dependent variable is the transfer to the family made by households. A family is limited to parents, siblings, and children from both sides of the husband and wife living outside the house. The independent variables are age, sex, religion, residence, years of schooling, per capita consumption, and household size. The number of transfers from parents is an additional independent variable for the transfer equation for children. The unit of analysis is at the household level. Time transfer and goods/services transfer are excluded from the analysis because the proportion of parents and children who gave or received time assistance to relatives was minute and may have measurement error. Children tend not to give their time to their parents. Children exchange the education investment from their parents with money. The proportion of households who make time transfers to relatives is smaller than those who make money transfers (Elizabeth F. et al., 2002).

4. Results and Discussion

Based on Table 1, the values of socio-economic variables and amount of transfer to a family from children households are better off than their parents. First, the household members of children are always smaller than parents since 2000 with a difference of about two people. This smaller household size might be the credit for split-off households to allocate more money for transfer to family. The sex of the head of both generations is dominantly male. Concerning age, split-off families are at least 10-20 years younger than parent households. Split-offs' heads are below 40 years old and decrease until the early 30s in 2014. Their origin households' heads are always near their 50s. More young couples form a family during this period. Origin households are always near their 50s. Split-offs tend to be unmarried than origin households. They might leave their origins because of school, work, and divorce/separation. For religion, the domination of Islam in split-off and origin households existed from 2000 until 2014. For the location, origin households tend to live in rural areas, unlike their offspring who tend to live in rural areas. This preference for living indicates massive urbanization during this period. Children are also better educated than their parents by nine to ten years of schooling compared to only nearly six years of schooling for their parents. Ten years of school is equivalent to the second grade of senior high school, unlike their parents who have only graduated from elementary school. To income (approached with expenditure), children are better off from 2000 until 2014, while their parents are worsening. This expenditure is in line with the transfer to families of split-off households than origin households. In short, children are much better off than their parents.

Table 1: Summary Statistics

Variables	Split in 2000		Split in 2007		Split in 2014	
	Obs.	Mean	Obs.	Mean	Obs.	Mean
Split Off						
Household Members	2,646	3.64 (1.59)	4,033	3.30 (1.46)	4,003	3.02 (1.66)
Sex (1=male)	2,646	0.85 (0.36)	4,033	0.79 (0.40)	4,003	0.83 (0.37)
		39.52		36.06		32.77

Age (years old)	2,646	(11.51)	4,033	(10.96)	4,003	(11.92)
Marital Status (1=married)	2,646	0.81 (0.39)	4,033	0.73 (0.45)	4,003	0.75 (0.43)
Religion (1=Islam)	2,646	0.89 (0.32)	4,033	0.89 (0.31)	4,003	0.89 (0.31)
Location (1=urban)	2,646	0.61 (0.49)	4,033	0.58 (0.49)	4,003	0.66 (0.47)
Years of Education	2,646	8.92 (4.23)	4,033	9.64 (3.97)	4,003	10.01 (3.81)
Per capita Expenditure (Rupiah)	1,698	6,706,124 (5,445,878)	3,273	9,399,091 (9,083,975)	4,003	13,000,000 (14,200,000)
Transfer to Family (Rupiah)	1,698	1,726,635 (4,450,443)	3,273	2,582,952 (5,802,017)	4,003	3,827,281 (10,900,000)
Origin						
Household Members	2,646	5.84 (2.22)	4,033	5.73 (1.83)	4,003	5.43 (1.74)
Sex (1=male)	2,646	0.81 (0.39)	4,033	0.88 (0.33)	4,003	0.84 (0.37)
Age (years old)	2,646	49.60 (11.72)	4,033	47.70 (10.64)	4,003	47.51 (10.06)
Marital Status (1=married)	2,646	0.89 (0.31)	4,033	0.88 (0.33)	4,003	0.85 (0.35)
Religion (1=Islam)	2,646	0.89 (0.31)	4,033	0.89 (0.31)	4,003	0.88 (0.32)
Location (1=urban)	2,646	0.49 (0.50)	4,033	0.46 (0.50)	4,003	0.40 (0.49)
Years of Education	2,646	5.77 (4.20)	4,033	5.87 (4.03)	4,003	5.90 (3.83)
Per capita Expenditure (Rupiah)	2,602	5,223,880 (5,207,348)	3,919	1,613,217 (1,524,799)	3,845	2,406,420 (1,748,480)
Transfer to Family (Rupiah)	2,602	683,957 (5,358,650)	3,919	217,535 (648,203)	3,845	584,568 (7,988,667)

Note: Standard error in parentheses
*Inflated to 2019 price.

Pairing rules result in three analyses of role models. The first analysis is for the pair of parent-children splitting in 2000, the second is in 2007, and the third is in 2014. The focus is on the results difference between endogeneity and exogeneity assumptions. The role model of parental transfer to family assuming exogeneity of parent's transfer to family in the children's transfer to the family is in Table 2 for the first pair rules (2000). This assumption is relaxed and put in the last column of each splitting year. The tables consist of parameter values for each variable and their significance.

The coefficients of Ln_Transfer To Family (Origin) in the estimation of Ln_Transfer To Family (Split Off) mean that the transfer to family by parents positively and significantly affects the transfer to family by children in the endogeneity assumption. On the contrary, they are always statistically insignificant and weaker when treated as exogenous. In 2000, a ten percent increase in the transfer to family by parents in the past would increase the transfer to family by children by eleven percent. It does not apply if transfer to family by parents is assumed exogenous. In 2007, a ten percent increase in transfer to family by parents in the past would increase the transfer to family by children by six percent. It also does not apply if transfer to family by parents is assumed exogenous. A unique finding in 2014, the assumption of exogeneity resulted in a positive and statistically significant coefficient of the variable. However, the coefficient is smaller than in endogeneity.

Education background and per capita expenditure are relatively more influential for origin households than for split-off households. Both are the only significant factors (positively) for transfer to family by origin households in 2000, followed by marital status (being married) and religion (Islam) in 2007 and 2014. For split-off families, gender of the head significantly affects their transfer to family. A male head of household transfers more than a female head of household. Variable age (with a decreasing rate) and place of residence become significant in affecting transfer to family in 2014. Marital status (married) begins to affect transfer to family in 2007 and 2014. Religion (Islam) affects only in 2007 and place of residence (urban) in 2014. Like their ancestors, education and per capita expenditure positively affect their transfer to family for all pairings.

In sum, the role model of parents to their children exists in the transfer to family. These results strengthen previous findings on the strong relationship between parents and children in Indonesia in transfer to family. However, this study uses a more complex family membership status from parents, siblings, and children than the study of Partha Deb et al. (2010) that used only siblings. The composition of a family in Indonesia that tends to be very mixed or inclusive with close and distant families is probably the reason for these behaviors. This finding indicates that split-offs put similar values for each type of family membership status in terms of giving transfers.

5. Conclusion

There are three main conclusions about household transfer in Indonesia. First, the assumption of endogeneity of the parental transfer variable in the child's transfer equation and the observation time for children provides different results. These results empirically confirm a positive role model of parents towards their children in terms of transfer to family. This research recommends further research with the assumption of endogeneity of the parental household transfer and the time lag for observing children in determining parent-child pairs in a country identical to Indonesia to strengthen the importance of applying this research method to role model theory or related to this theory.

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Table 2: Results

Independent Variables	Transfer To Family								
	2000			2007			2014		
	Origin	Split Off		Origin	Split Off		Origin	Split Off	
		Exo genous	Endogenous		Exogenous	Endogenous		Exogenous	Endogenous
Sex (1=male)	0.23	0.32*	0.36**	0.57**	0.26***	0.27***	(0.01)	0.38***	0.39***
	(1.96)	(2.53)	(2.76)	(2.72)	(4.10)	(4.26)	(-0.05)	(5.01)	(5.11)
Age (years old)	(0.00)	0.02	0.02	(0.04)	0.02	0.02	(0.04)	0.06***	0.06***
	(-0.07)	(0.84)	(0.84)	(-1.40)	(1.30)	(1.40)	(-1.75)	(4.88)	(4.99)
Age (Squared)	(0.00)	(0.00)	(0.00)	0.00	-0.00*	-0.00*	0.00	-0.00***	-0.00***
	(-0.12)	(-1.65)	(-1.64)	(0.48)	(-2.21)	(-2.31)	(0.94)	(-4.93)	(-5.05)
Marital Status (1=married)	0.21	0.12	0.14	0.43*	0.32***	0.31***	0.88***	0.37***	0.36***
	(1.31)	(0.85)	(0.97)	(2.03)	(4.74)	(4.65)	(5.88)	(4.60)	(4.37)
Religion (1 = Islam)	0.14	0.20	0.17	0.57***	0.30***	0.29***	0.91***	0.08	0.04
	(1.17)	(1.75)	(1.45)	(4.54)	(3.88)	(3.64)	(9.08)	(0.91)	(0.50)
Urban (1=urban)	(0.00)	(0.01)	(0.02)	(0.13)	(0.01)	0.00	0.01	0.23***	0.23***
	(-0.00)	(-0.08)	(-0.24)	(-1.54)	(-0.17)	-	(0.20)	(4.34)	(4.25)
Years of Schooling	0.10***	0.04***	0.04***	0.08***	0.06***	0.06***	0.09***	0.04***	0.04***
	(9.38)	(4.78)	(3.32)	(7.47)	(8.60)	(7.85)	(9.51)	(6.07)	(5.44)
LnPercapita Expenditure	0.92***	0.90***	0.87***	0.96***	0.84***	0.81***	1.00***	0.67***	0.66***
	(15.42)	(15.14)	(14.06)	(14.80)	(20.74)	(19.16)	(16.58)	(19.20)	(18.35)
LnTransfer To Family (Origin)		0.02	0.11**		0.00	0.06*		0.03*	0.06*
		(1.30)	(2.67)		(0.30)	(2.01)		(2.24)	(1.97)
Constant	-3.53***	(1.79)	-2.23*	-3.15**	(0.78)	(0.98)	-3.63***	01.05	0.84
	(-3.70)	(-1.73)	(-2.10)	(-2.86)	(-1.11)	(-1.37)	(-3.50)	(1.82)	(1.39)
N	2,156	1,380	1,380	3,640	2,880	2,880	3,700	3,098	3,098

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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The Indispensability of Celebrity on Consumer's Purchasing Behaviour in the Brewery Industry in Cameroon

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Abstract
The modern marketing environment has introduced a new paradigm for advertising referred to as celebrity endorsements. These forms of advertising influence consumers' pre-purchase attitudes and draw attention to a product. This study consequently sought to assess the effect of celebrity endorsement on customers' buying behaviour in the soft drink industry. Specifically the study purport to investigate the effect of (a) celebrity match (b) celebrity attractiveness (c) celebrity credibility and (d) celebrity previous endorsement on consumer buying behaviour. To accomplish these objectives, data was sourced from customers of brewery's products using simple random sampling technique. Data were analysed using descriptive statistics, correlative research design and inferential statistics. The research findings revealed that celebrity endorsement has a positive and significant effect on consumer's buying behaviour in the soft drink industry as indicated by the adjusted R-squared of 0.798. This suggest that 79.8% variation in consumer buying behaviour is explained by celebrity match, celebrity attractiveness, celebrity Credibility and Celebrity previous endorsement at 1% level of significance. Since celebrity endorsement has a significant role on consumer's buying behaviour in the soft drink industry, we recommend that advertisers should match the celebrity credibility, celebrity attractiveness and celebrity previous endorsement by choosing, and shaping the celebrity to match with the target market expectations.

Keywords: Celebrity Endorsement, Consumer Buying Behaviour, Celebrity Match and Celebrity Previous Endorsement

1. Introduction

New events and innovations with particular qualities and characteristics have entered human life since the invention of the internet. People's lives have undergone tremendous change as a result of e-commerce, mobile commerce, and modern social media and mobile marketing. Celebrity endorsements have long been a common marketing tactic; they are now acknowledged as a significant and pervasive phenomenon of contemporary marketing as well as a practical marketing communication approach according to Schimmelpfennig (2019).

Modern society has a tendency to ignore all advertisements, whether they appear on television, in magazines, or in newspapers. Despite that, it's impossible to dismiss the appeal of a celebrity. In order to keep clients interested in the brand, the use of a celebrity in an advertisement is one of the finest tactics. Celebrities have a stronger influence on people because of how attractive they are and how talented they are. McCracken (1989) asserts that, more than any other group in society; young people are impacted by celebrities. When young individuals are exposed to celebrities in the media, they frequently establish secondary attachments to them, which are crucial for the formation of an adult identity as they transition into adulthood (Boon & Lomore, 2001). Since they serve as a model for young people as they develop their beliefs, attitudes, and behavior, marketers have discovered that celebrities may be a potent tool to influence and respond to young consumers' behavior. Consequently, the majority of celebrity-endorsed advertisements in all their forms mostly appeal to the younger demographic (Run *et al.,* 2010).

It is notable that not all the celebrities prove to be successful endorsers, this makes the selection process quite difficult. Hence, advertisers must carefully select celebrities they use so that in the event where any micro aspect goes wrong in celebrity endorsement selection process, the celebrity endorsed advertisement campaign will not be effective. According to Ahmed at al. (2012) advertisers need to take more caution and understand the market before choosing a celebrity that will endorse their products.

Several businesses in England have been claiming to be "by appointment to the Queen" for hundreds of years in order to indicate that they are supported by the British royal family. When a well-known person recommends a product, consumers are frequently lured in by the notion that by buying the product, they are also endorsing the product and the famous person (Lascu & Zinkhan, 1999).

In Africa, and precisely in Nigeria, celebrity endorsement has become a common exercise for advertisers and product owners. Ekeh (2019) suggested a sharp switch in Nigeria from sales promotion strategy to celebrity endorsements by businesses, he asserted that the fight to control the Nigerian market has grown tougher with over time, and brand owners are deploying various marketing strategies in a bid to dominate the market. Understanding how customers will react to various strategies employed to achieve their goal is one of the problems that organizations face in the business world today. Consequently, marketers are now interested in researching consumer behavior. The main objective of celebrity endorsement is to influence consumers' purchasing decisions; however, this power over a brand is usually altered or amplified by consumers' recollections. Associative connections to the brand name in the minds of consumers help to create memories of it. These brand perceptions impact decisions about consideration, assessment, and ultimately purchases. Thus, if celebrity endorsement is a means to an end, does it really influence consumers' purchase decisions about a product? Many research studies have been conducted at the international level to answer this question about consumers' attitudes toward products as a result of celebrities used in advertising such products. To this end, this study attempts to make several contributions to the body of actionable knowledge on the effect of endorsement on consumers' behavior in the brewery industry in Cameroon. In this light the major objective of the study is to examine the effect of celebrity endorsement on consumer buying behavior in brewery industry in Cameroon. Specifically the study seeks to: (a) analyse the effect of celebrity match on consumer behaviour (b) Assess the effect of celebrity attractiveness on consumer behaviour (c) Investigate effect of celebrity Credibility on consumer behaviour and (d)Examine the effect of celebrity previous endorsement and consumer behaviour.

2. Literature Review

As concerns the conceptual clarification, Khatri (2006) holds that "celebrities" are people who enjoy public recognition and possess such attributes as attractiveness and trustworthiness. Celebrities are well-known and well-liked individuals who have excelled in their respective fields of endeavor and thus command respect, acceptance, popularity, and followership in society. According to Jo Onewo *et al.* (2013), celebrities are distinguished from ordinary people by a number of qualities. Popularity, great social or cultural recognition, attention-getting ability, and fame within their own faculties are some of these qualities. Marketers often use celebrity endorsements as a successful tactic. From a psychological perspective, it responds to consumer needs. Consequently, it affects his behavior and decision-making in relation to the promoted good or brand (Khatri, 2006).

According to Erdogan & Baker (2000) a celebrity's endorsement adds glitz to a product and raises the possibility that, in a crowded market, a well-known face will boost appeal and name recognition. Businesses invest a lot of money on celebrities to promote their goods or sponsored messages on traditional and electronic media in the hopes that this will encourage favorable views toward the brand and, in turn, increase sales and profits by raising consumers' preference for the brand.

Kotler and Keller (2007) defines consumer behavior as the study of people, groups, or organisations and the methods they employ to choose, secure, utilise, and discard goods, experiences, or ideas in order to meet wants, as well as the effects these methods have on the consumer and society. The study of how, what, when, and why people buy is another definition of consumer behaviour. It describes the purchasing process that everyone who is willing to purchase, including households, groups, or organisations, goes through (Kotler, 2011). Some of the most common stimuli are personal factors, cultural factors and social factors. In addition, the consumer's personal factors such as perception, motivation, learning and memory comprise an influence on how the consumer responds to the marketing stimuli (Kotler and Keller, 2007).

As concern empirical literature, few studies have been carried out with the aimed being to investigate the effect of celebrity endorsement on customer buying behavior. Interested in the effect of celebrity endorsement on purchase intention, Widarto and Anindita (2018) reveal that celebrity endorsement has a positive impact on purchase intention, and the three dimensions namely trustworthiness, attractiveness, and expertise play an important role on forming celebrity endorsement variable. Moreover, trustworthiness of the celebrity is the biggest contributor on celebrity endorsement variable which is followed by attractiveness and expertise dimensions.

Wenny and Sabrina (2016) examined comparing the use of famous endorser and lay endorser in predicting consumer intention to buy in the Indonesian context. This research compared the use of famous endorser and lay endorser in advertisements in predicting consumer intention in buying a consumer goods product. A total of two hundred and ninety (290) undergraduate students participated in this study. The data was then analyzed using structural equation modeling. The results show that the use of famous endorser in product advertisement is more effective than the use of lay endorser.

In the same light, Novita (2020), examined the impact of celebrity endorsements on consumers' purchase intention in Indian . The population of the study included three hundred and thirty-six (336) Indian respondents who are exposed to celebrity endorsements for various brands. The study considers three attributes of celebrity endorsements as suggested by Ohanian (1990) attractiveness, trustworthiness and expertise. However, the beta coefficients reveal a low degree of correlation between celebrity endorsements and purchase intention. Further, attractiveness and trustworthiness are found to have a significant impact on the purchase intention, while expertise did not have a significant impact on purchase intention.

3. Methodology of the Study

The research adopted is a causal research design. Causal research design is conducted to identify the extent and nature of cause-and-effect relationships between Celebrity endorsement and consumer's behaviour. The variables under study were corporate Celebrity endorsement which is the independent variable with its specific components being celebrity match, celebrity attractiveness, celebrity credibility and celebrity previous endorsement. The dependent variable is consumer's behaviour. The data for the study was obtained through questionnaires administered to customers of brewery's products. They included customers of Brassieres Du Cameroun, UCB, Guinness Cameroon, and Source Du Paye. In this study, a representative sample was drawn following Miller and Brewer (2003) formula of calculating sample size. In order to obtain the sample size we used the formula below:

$$n = \frac{N}{1 + N(a)^2} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where "N" is the sample frame, "n" the sample size and "a", the margin of error, which in our case is 5%.
Therefore, $n = \frac{172}{1+76(0.05)^2}$=120

The econometric model is specified as follow:

$$\text{CB} = \alpha_0 + \alpha_1\text{CE} + \alpha_2\text{CA} + \alpha_3\text{CM} + \alpha_4\text{CC} + +\varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots .. (2)$$

Where α_0 represent the constant term, $\alpha_1, \alpha_2, \alpha_3$ and α_4 are the parameters to be estimated, ε is the error term. CE represent Celebrity endorsement; CA Celebrity attractiveness; CM Celebrity match and CC Celebrity credibility. The dependent variable which is Consumers behaviour is represented by CB. The a priori expectation of the above model is that $\alpha_0 \neq 0$, $\alpha_1 \geq 0$, $\alpha_2 \geq 0$, $\alpha_3 \geq 0$ and $\alpha_4 \geq 0$.

The ordinary least Square technique was used since the dependent variable was continuous and captured thought a generated index used to capture respondents purchasing behaviour. The Cronbach's alpha test was used to investigate the reliability of the instrument. The resultant Cronbach alpha reliability coefficient of 0.72 indicate an acceptable level of internal consistency.

4. Presentation of Results

4.1. Summary of Descriptive Statistics

Table 1: Summary Statistics

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
Celebrity Match	98	1.00	5.00	3.3469	1.46507	.224	.244	1.398	.483
Celebrity Attractiveness	98	1.00	5.00	2.0714	1.14198	1.002	.244	.146	.483
Celebrity Credibility	98	1.00	5.00	2.5306	.94383	.323	.244	.076	.483
Celebrity Previous Endorsement	98	1.00	5.00	1.3878	.89250	2.878	.244	8.219	.483
Consumer Behaviour	98	1.00	5.00	2.1224	1.20365	1.100	.244	.312	.483

Source: Constructed by authors Using Primary Data

Table 1 presents the summary statistics of the variables in the study. From the result, all the variables have a minimum value of at least 1 and a maximum value of 5. The standard deviations of the variables are relatively small, less than half of their mean, indicating that the values of these variables are clustered around the mean. The normality of the distributions is confirmed by looking at their Skewness and Kurtosis as they have Skewness less than one and Kurtosis less than three.

4.2. Presentation of Correlation Results

Table 2: Presentation of Correlation Results

	Celebrity Match	**Celebrity Attractiveness**	**Celebrity Credibility**	**Celebrity Previous Endorsement**	**Consumer Behaviour**
Celebrity Match	1				
Celebrity Attractiveness	.071	1			
Celebrity Credibility	.219*	.334**	1		
Celebrity Previous Endorsement	.280**	.426**	.402**	1	
Consumer Behaviour	.151	.390**	.333**	.474**	1

Source: Constructed by authors Using Primary Data

From the result on table 2, celebrity match is positively correlated with celebrity attractiveness, celebrity credibility and consumer behaviour. Celebrity attractiveness is also positively correlated with celebrity credibility, celebrity previous endorsement and consumer behaviour. Celebrity credibility is positively correlated with celebrity previous endorsement and consumer behaviour. Also, celebrity previous endorsement is correlated consumer behaviour. From the result, all pairs of variables exhibit weak and moderate positive correlations between them as the correlation coefficient between the pairs of variables is less than 0.5. The correlation results can act as a prelude to test for multicollinearity. If the coefficient between the independent variables is greater than 0.8, it shows potential multicollinearity. However, from the table above, all the coefficients are less than 0.8, hence there is no problem of multicollinearity. This is further supported with the Variance Inflation Factor results below.

4.3. Test of multicollinearity

Table 3: Variance Inflation Factor (VIF)

Variable	VIF	1/VIF
Celebrity Match	1.054	.949
Celebrity Attractiveness	1.452	.689
Celebrity Credibility	1.273	.784
Celebrity Previous Endorsement	1.248	.789
Consumer Behaviour	1.243	.805
Mean VIF	1.271	.

Source: Constructed by authors Using Primary Data

Table 3 shows the VIF result which is used to measure the degree of multicollinearity. If the VIF of a coefficient of a variable exceeds 2.50, then that variable is highly collinear, and multicollinearity becomes a problem (Gujarati, 2004). The VIF test for multicollinearity showed no evidence for the existence of multicollinearity since the mean VIF was 1.243 which is less than 2.50.

4.4. Verification of Hypotheses

At this stage, we are going to look at which hypothesis is to be rejected and which one is to be accepted.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.895[a]	.801	.798	.14387

a) Predictors: (Constant), Celebrity Match, Celebrity Attractiveness, Celebrity Credibility, Celebrity Previous Endorsement

Table 4 show the R-squared which measures the joint contribution of the independent variables to the dependent variable. The adjusted R-squared is 0.798. This means that 79.8% variation in consumer behaviour is explained by the independent variables in this model. The also show that the remaining 20.2% is explained by other variables not included in our model. With at least 78% contribution, we can conclude that our variables fit the model. R is the correlation coefficient which show the joint relationship between all the variables included in the model.

4.5. ANOVA Results

Table 5: ANOVA Results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	59.841	32	1.870	90.343	.000[b]
	Residual	.559	27	.021		
	Total	60.400	59			
a. Dependent Variable: Consumer Behaviour						
b. Predictors: (Constant), Celebrity Match, Celebrity Attractiveness, Celebrity Credibility, Celebrity Previous Endorsement						

Source: Constructed by authors Using Primary Data

The Fisher's F test is used to determine the risk of rejecting the null hypothesis when it is true. From table 5, we can observe that the p-value of the F-statistics (0.000) is less than 1%, this implies the independent variables in the model (Celebrity Match, Celebrity Attractiveness, Celebrity Credibility, Celebrity Previous Endorsement) are statistically significant globally at 1% level of significance. This therefore shows that celebrity endorsement has significant effects on consumer behaviour in Soft Drink Industry in Bamenda.

4.6. Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.455	.427		1.064	.290
	Celebrity Match	.126	.074	.150	1.719	.089
	Celebrity Attractiveness	.596	.093	.558	6.375	.000
	Celebrity Credibility	.283	.170	.210	1.663	.100
	Celebrity Previous Endorsement	.104	.028	.101	3.703	.001
	Gender	.270	.105	.237	2.559	.012
	Age	.192	.128	.161	1.505	.136
	Education	-.167	.124	-.131	-1.342	.183
a. Dependent Variable: Consumer Behaviour						

Source: Constructed by authors Using Primary Data

This study seeks to examine the effects of celebrity endorsement on the consumer behaviour of Soft Drink Industry in Bamenda. From the results, the coefficient of celebrity match is positive, meaning the celebrity match positively affects consumer buying behaviour, indicating that celebrity match will lead to an increase in consumer behaviour. Specifically, from the result, an increase in celebrity match by 1 standard point, will lead to a 0.126 units increase in the consumer buying behaviour. This result is statistically significant at 10% level of significance since the p-value of 0.089.

The results also show that celebrity attractiveness have a positive effect on consumer behaviour in Soft Drink Industry in Bamenda. This means that a point increase in efficiency ratio, increases consumer behaviour by 0.596 units. This result is statistically significant at 1% level of significance since the p-value is 0.000. This study results corroborates with Nelson and Deborah (2017). The results also show that celebrity credibility has a positive effect on consumer behaviour as its coefficient is positive. Indicating that, an increase in celebrity credibility increases consumer buying behaviour. Specifically, a point increase in celebrity credibility will increase consumer behaviour by about 0.283units. The results contradicts ZorBari-Nwitambu and Kalu (2017) who stated that consumer will tend to have a positive disposition towards a celebrity who is good at what they does, thereby commanding more attraction and followership.

The results also indicate that celebrity previous endorsement positively affects consumer behaviour in Soft Drink Industry in Bamenda. This implies that, increase in celebrity previous endorsement analysis increases consumer behaviour as shown by its coefficient of 0.104. Specifically, a point increase in celebrity previous endorsement analysis will increase consumer behaviour by about 0.104 units. This result is statistically significant at 1% level of significance since the p-value of 0.001. The result contradict those of Fadeyi (2020) who found that there is no evidence proving that the usage of celebrity endorsement will achieve stronger brand loyalty in comparison to a non-use of celebrity endorsement. Nevertheless, they are in corroborate of those of Lawal (2021).

5. Conclusion and Policy Recommendation

It is believed that, advertisers and advertising agencies go to great lengths to use celebrities to endorse a variety of products in the hopes that the public image of these celebrities will trickle down to the endorsed products and lead to their adoption by target consumers. This hypothesis is supported by the present study. According to results from this study, endorsements from famous people have a favourable and considerable impact on consumers' purchasing decisions. The study demonstrates that celebrity endorsement has a greater impact on customer attitudes and intention to buy. In this regard, we came to the conclusion that Bamenda-based soft drink distributors should carefully choose the celebrity who will appear in their commercial advertisements. The study recommend that, the general public stands out as the most persuasive force when marketing to a mixed audience that includes both middle-class and low-income individuals.

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Social Capital Resource Attributes Affecting Performance in Deposit-taking Savings and Credit Co-operatives in Kenya

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Abstract
The paper reports the findings of research on the role of social capital resource attributes on the performance of deposit-taking savings and credit co-operative societies in a developing country context. The research was premised on the logic of the resource-based view that postulates that resources are the basis of performance variances across firms in the same industry. In addition, the study constructs are supported by the institutional theory and the social capital theory. Three attributes of social capital resources, specifically networking, reputation, and culture, were used to operationalize the construct. Data was obtained from representatives of functional areas involved in strategic decision-making in 38 deposit-taking SACCOs in Nairobi, Kenya. Data was collected using a 5-point Likert scale questionnaire whose computed Cronbach's alpha score showed that the instrument was reliable and internally consistent at above α=0.9. The study recorded a response rate of 71%. The study found that the three attributes of social capital are embedded in the deposit-taking SACCOs to a high extent and contribute towards improved performance of the deposit-taking SACCOs by explaining 51.3% of the variation of performance. The findings contribute towards explaining the strategic management process through which the components of social capital contribute towards the performance of the sampled organizations and raise several implications on relevant strategic management practices suitable to create and sustain social capital resources for enhanced organizational performance.

Keywords: Performance, Social Capital, Networking, Reputation, Culture, Deposit-taking Savings and Credit Co-operatives, Heterogeneous Resources, Firm Specific, VRIN

1. Introduction

The pursuit, attainment, and sustainability of good firm performance are essential themes in strategic management (Ma, 2015). A firm's success is pegged on its ability to perform well compared to other players in the same industry. A well-performing firm can realise long-term profits that will generate opportunities to ensure well-remunerated employees, higher returns on investments, and access to the most recent technology assuring their customers of unbeatable quality and high-value products (Taouab & Issor, 2019).

Barney et al. (2011) posited that firms operate in the same industry, but their performance varies due to differences in their resource complement. The resource-based view suggests that variability in a firm's performance is attributable to heterogeneity in distinctive bundles of organizational resources (Barney, 1991; Peteraf, 1993). A firm is a unit operating towards achieving a targeted goal with the help of a collection of resources and laid-out processes and structures that drive the firm's growth and performance (Urbano, Alvarez & Turro, 2013). Firms possess different types of resources, some of which are strongly associated with the performance of the firm (Lee & Whitford, 2012). A firm's success is thought to come from the uniqueness of resources developed by firms over time (Rifat, 2017). Such unique resources are not purchased in the factor market but are developed over time in the firm through interaction of people and combination of other resources.

The resource-based view postulates that a firm's competitiveness and exemplary performance in an industry are a product of heterogeneous resources that can neither be imitated nor substituted by rivals (Barney et al., 2011). Heterogeneity is thought to contribute to resources rich in desirable characteristics whose origin is so ingrained in the firm networks, structures and culture that it cannot be attributable to any single resource but rather to a web-like complexity that is difficult to decipher (Barney, 2014). Processes, structures, reputation, networks and cultures developed over the years by the people working from time to time for the firm form heterogeneous resources which constitute the firm’s social capital. Such resources have the characteristics of causal ambiguity, social complexity and historical complexity making them valuable, rare, inimitable and non-substitutable (VRIN). Capabilities built through the process of causal ambiguity are not transferrable to other firms because the process of gaining such capabilities is not documented (Rifat, 2017).

The study focused on the social capital aspect of resources to attempt to explain its contribution to variation in performance in a context of a financial service provider. The financial service sector was a deposit-taking SACCO subsector that mobilises savings from members and offers financial and bank-related services to the members in the same manner as licensed commercial banks do, and their performance is considered critical in contributing to the achievement of Kenyan national goals. The context selected was Kenya, and the researchers selected those deposit-taking SACCOs operating in the capital city, Nairobi and its environs as this region hosted the largest percentage of the registered deposit-taking SACCOs as well as the highest volume of transactions undertaken in the sector.

Most deposit-taking SACCOs compete with technologically advanced financial organizations. To better their performance, the deposit-taking SACCOs are venturing into new markets and improving their product offering coupled with competitive pricing, enabling them to achieve a cost leadership position (Sossion, 2015). The deposit-taking SACCOs also offer many products and therefore increase the product ratio per customer to satisfy customer needs (Kipkosgey & Njeru, 2014). The integral role played by deposit-taking SACCOS in the provision of financial services is apparent (Kiragu, 2012).

The performance of deposit-taking SACCOs slackened in the year 2020 with a drop of 3.2% in growth rate from 13.4% in 2019 to 10.2% in 2020 and a drop in the dividend payment rate on savings from 8.7% in 2019 to 7.3% in 2020 (SASRA, 2022). Besides this, deposit-taking SACCOs must compete with financial institutions such as banks that employ better economies of scale. Due to these challenges, deposit-taking SACCOs experience performance challenges as evidenced by dwindling market share, reduced share volumes, low levels of productivity, and reduced profitability (Sagwa & Kembu, 2016). There has been a decline in the total cumulative number of deposit-taking SACCOs licensed by SASRA to carry out business from 181 in 2015 to 167 in 2020 due to reasons touching on the inability to meet the strict guidelines set out (SASRA, 2020). SASRA (2018) linked the poor performance of deposit-taking SACCOs to inefficient processes and a weak product development mechanism. Therefore, the deposit-taking SACCOs’ sector's poor performance calls for an empirical explanation to demonstrate how their social capital resources, including networking, reputation, and culture, account for their level of competitiveness and subsequent performance.

Although there have been significant efforts towards relating the diverse types of resources with the construct of performance, few studies have been done in the deposit-taking SACCOs sector (Ma, 2015; Taouab & Issor, 2019; Rifat, 2017). In view of the state of findings from previous studies indicating that researchers vary in their views concerning which resources are responsible for positive firm performance as well as lack of research in the deposit-taking SACCO sector, this study sought to investigate the effect of social capital resources on firm performance of deposit-taking SACCOs in Nairobi City County, Kenya.

The objective of the study is to establish the effect of social capital resources on the performance of deposit-taking SACCOs. The study had three specific objectives which were to establish the effect of networking, reputation and culture on the performance of deposit-taking SACCOs in Kenya. The study has contributed to the growth of the body of knowledge in strategic management theory. Specifically the study links firm specific actions such as broadening networks, growing trust and developing innovative cultures to the development of valuable, rare, inimitable and non-substitutable resources that form part of the firms social capital.

2. Literature Review

The literature review section covers the theoretical review, the conceptual and empirical review sections.

2.1 *Theoretical Review*

The study is anchored on the resource-based view, the institutional theory and the social capital theory. The resource-based view explains a strong linkage between a firm's performance and its resource base. The institutional theory on the other hand links firm specific processes and culture to development of heterogeneous resources that provide a competitive advantage and improved performance for firms. The social capital theory is relevant to the study as it explains how firms create social capital through linkages, culture and lasting relationships with stakeholders.

The resource-based view links resources to competitive advantage and performance, and the earlier conceptual work was done by Penrose (1959), Wenerfelt (1984), and Barney (1991). The development of a firm allows for an evolutionary accumulation of knowledge through learning and experience through the interaction of resources, increasing the firm's absorptive capacity (Penrose, 1959). Barney (1991) developed the VRIN framework, which fronts the view that resources need to possess specific characteristics, which are value, rareness, and inimitability and must also be characterised by the absence of other resources in the industry that can be used as substitutes. In a further development of the theory, Barney (1997) reorganised the VRIN framework by combining resource inimitability and non-substitutability and adding resource organisation to form the VRIO framework. The RBV explains how a firm brings together its resources and combines and deploys them strategically to create a source of competitive advantage and effectively improve firm performance (Yang & Conrad, 2011). Leiblein (2011) asserts that historical developments in the firm influence various ways in which varying firms gain access to resources and how the resources are interacted, explaining the variation in performances between competing firms.

Firms may develop competitive advantage from resource heterogeneity and resource immobility which may lead to superior performance for the firms if valuable resources remain immobile and are not replicated by competing firms (Barney *et al*., 2011). Resource heterogeneity may be achieved through causal ambiguity and historical happenings in the organisation. A positive culture in an organisation often contributes to excellent performance in top-performing organisations. Culture is not easily transferable to other firms, and valuable culture-based resources are difficult to imitate. Interconnected resources that are complementary to each other offer links too complicated for competing firms to replicate and offer a source of sustainable competitiveness that leads to improved firm performance (Locket, Thomson & Morgenstem, 2009). The complexity with which the resources are connected is a factor of people and processes in the firm. Individuals with valuable skills in the firm can continuously establish and perfect links within firm processes. These links and processes contribute to the inimitability of the resources and the resultant good performance of the firm. Effectively these resources are intangible and are referred to as social capital for the firm and they include the firm's reputation, structures and culture built over time in the firm and cannot be sold (Robinson, 2008).

The origin of the institutional theory can be traced back to March and Simon (1958); Cohen, March and Olsen (1972); Tolbert and Zucker (1996); DiMaggio and Powell (1983). According to DiMaggio and Powell (1991), the term institution refers to formal rules, agreements and non-written assumptions that organisations often conform to and which are derived from structures as recommended by regulators, requirements by government agents, guidance from professional bodies that exert pressure on members seeking to be identified with them. There exist values and norms which define what is preferred or what proper and acceptable behaviour is, and these values and norms are what often set firms in the same industry apart and often form part of a firm's competitive advantage (Kabue & Kilika, 2016).

Baumol, Litan and Schramm (2008) recognise that while the importance of resources in a firm's success cannot be overemphasised, other issues such as cultural beliefs and practices, traditions and historical events also affect the firm's growth. Campbell (2007) observes that institutional theory shapes workers' beliefs in an organisation, which moulds them to behave socially responsibly. Every industry and culture is governed by rules and belief systems that organisations must conform to. Firms that do not conform to set norms are setting themselves up for failure (Dobbin et al., 2007).

Over time, organisations adapt to institutionalised activities which are enduring, socially acceptable, and resistant to change, and these activities do not rely on rewards or monitoring for their persistence (Thoenig, 2011). Activities such as firm processes and management approaches are endorsed by the firm's prevailing culture (Baumol *et al.,* 2008). Successful processes and structures are created when people interact, creating idiosyncratic, complex, and valuable resources. These processes and structures are slow in decay as they are passed on to successive generations of team members, thus forming a competitive advantage for the firm (Fahy, 2000). Institutions encourage good performance through innovative products and processes by rewarding an innovative culture (Miller, 2007). Institutional theory explains the process through which organizations form valuable and rare intangible firm specific social capital resources making the resources inimitable by competing firms

Social capital theory holds that social relationships lead to accumulation of human capital. Social networks are valuable networks based on respect and good will that are formed when people interact. According to Claridge (2018) social capital are resources embedded, available and derived through networks available to individuals or social groups. Individuals build social capital by investing their time and other resources in attending networking events, joining community groups, volunteering their time in the community among many other things. Through such actions, individuals are able to build networks, trust and reciprocity. Social capital is intangible and is dependent on other people or social units to be drawn upon. Strong connections and high level of trust result into a higher level of interconnectedness between individuals or social units (Akram et al., 2016). High levels of trust results in a good reputation for the firm while high levels of interconnectedness mean the firm is able to acquire needed resources with ease.

Cultural aspects of social capital change more slowly as the social unit evolves. Cultural social capital benefits are collective and benefit members of the groups involved. By building cultural social capital, organizations enable their employees to call upon the social capital in times of need (Alguezaui & Filieri, 2010). Social capital built with suppliers enables smooth operations between the firms involved. Issues such as trust which result in the reputation of the firm are based on past relations of the firm with its customers or suppliers. Relational social capital is built through a history of interactions between individuals or social groups (Lefebvre et al., 2016). Trust and reputation are built gradually over events that are rooted in history and influence other people’s perception of the firm. Social capital theory explains how firms form intangible resources such as networking, reputation and culture through relations and historical events in the lifetime of the organization.

2.2 Conceptual Review

The researchers reviewed conceptual and empirical literature on the variables of performance, social capital resources, networking, reputation and culture.

2.2.1 Performance

The pursuit, attainment and sustainability of good firm performance is an essential theme in strategic management (Ma, 2015). A firm's success is pegged on its ability to perform well compared to other players in the same industry. Firm performance is judged by shareholder returns and customer satisfaction (Santos & Brito, 2012). A well-performing firm can realise long-term profits that will generate opportunities to ensure well-remunerated employees, higher dividend payments to their shareholders, and access to the most recent technology assuring their customers of unbeatable quality and high-value products (Taouab & Issor, 2019). According to Alkaf, Yusliza, Saputra and Muhammad (2021), in order to achieve good performance, a firm needs to be both efficient and effective. The market-based view of strategy views firm performance as a determinant of industry factors and external market dynamics such as competition and industry structure (Wang & Ghose, 2011).

Barney et al. (2011) posited that although firms operate in the same industry, their performance differences may be explained by their resource complement. Firms possess different types of resources, some of which are strongly associated with the performance of the firm (Lee & Whitford, 2012). A firm's success is thought to come from the uniqueness of resources developed by firms over time and the development process may include causal ambiguity (Rifat, 2017). When resources improve performance through causal ambiguity, no employee can explain how this was achieved which explains why moving a skilled employee from one firm to another does not always result in improved performance for the new employer.

The researchers adopted both financial and non-financial measures for the study. Return on capital employed was used as a financial measure for the study. According to Kaplan and Norton (2008), ROCE measures how much each unit invested by the shareholders generates. For deposit-taking SACCOs, ROCE is the equivalent of dividends. A stakeholder-based approach was adopted by the researchers for non-financial measures and included market share and customer satisfaction.

2.2.2 Social Capital Resources

Social capital resources are the focus of the firm's unique way of processing customer's requests, the policies that govern these processes, the tools the firm chooses to do so and the actual relations of people enabling these services both within the firm and also with other players that influence the firm's performance in the firm's environment (Ainuddin, Beamish, Hulland & Rouse, 2007). Soko (2014) found that the use of social complexity, organisational culture and social network made it difficult for organisations to imitate a firm's source of competitive advantage and performance. Menike and Benihuloya (2020 found that social capital resources were positively linked to the performance of small and medium enterprises. A good and rich social capital base cuts across networking contacts that help develop winning ideas, provide cutting-edge information in a timely manner, and pursue openings and new business opportunities before competitors figure them out (Ismail *et al.*, 2012). Social capital influences the availability of resources from suppliers leading to better performance than competitors who do not have the same advantage (Wang & Wang, 2012). Clulow, Gerstman and Barry (2007) observed that firms that have developed a culture of honest customer dealings develop a pool of trusting clients who view the firm as reputable.

Interconnected resources that are complementary to each other offer links too complicated for competing firms to replicate and offer a source of sustainable competitiveness that leads to improved firm performance (Locket et al., 2009). The complexity with which the resources are connected is a factor of people and processes in the firm. Individuals with valuable skills in the firm can continuously establish and perfect networks that result in more valuable resources. Firms that establish a positive culture are able to form the right networks. As a result such firms develop efficient processes that offer value to customers. When customers consistently get value from a firm, the firm’s reputation grows. The study identified three attributes of social capital resources for investigation: networking, reputation and culture (Clulow et al., 2007; Locket et al., 2009; Barney et al., 2011).

2.2.2.1 Networking

Networking has been conceptualised as the effort to establish links among employees in the organization and between employees and key partners and stakeholders outside the organization. Networking through direct and indirect relationships results in embeddedness of business relationships (Ratajczak-Mrozek, 2015). Both internal and external networks developed within and outside the firm are important (Ciabuschi et sl., 2014; Fonfara et al., 2018). In forming business networks, the actors, resources and activities are connected across each business relationship (Ford et al., 2011). Aujirpongpan & Hareebin, (2020), noted that by employing networks, firms improve their innovation, competitive advantage and performance. Networking enables firms to access external resources (Gibson et al., 2014).

According to Mu et al. (2017), networking allows enterprises to not only create networks but also utilise network resources for product creation. A good and rich social capital base cut across networking contacts that help develop winning ideas, provide cutting-edge information in a timely manner, and pursue openings and new business opportunities before competitors figure them out (Ismail *et al.*, 2012). Such a social capital base enables firms to access resources such as affordable financial capital and favourable support and cooperation from those who have power and influence in making decisions that affect the industry. Networked firms can explore alternatives to resources that enable them to cut costs, improve efficiencies, and achieve better firm performance. Networking capability is a firm's ability to establish and exploit an inter-organizational network to access resources owned by other entities (Parida et al., 2017). Strong relations between a firm and its stakeholders, including suppliers and policy makers, give the firm a strong position that is likely to influence decisions in its favour.

Firms form heterogeneous resources with VRION characteristics through the interaction of people. Even though two firms own the same resources at inception, each can build a different complement of capabilities and increase its competitive advantage through the interaction of people inside and outside the organization (Barney, Ketchen & Wright, 2021). For instance, one firm could use network relationships between its employees and stakeholders outside the firm to shorten a product or service turnaround time. Social capital resources are embedded in relationships between people working for the firm and influential persons outside the organisation who have substantial control of either resources or decisions affecting how firms in that particular industry are run. Social capital influences the availability of resources from suppliers leading to better performance than competitors who do not have the same advantage (Wang & Wang, 2012). Relationships, even of a personal nature, involving employees and officials of organisations in the same ecosystem or supply chain, are valuable to businesses. Such relationships provide a channel that enables firms to receive valuable information not available to competitors (Ha, 2021). Such information enables firms to be more prepared for emerging trends ahead of other players in the industry. Consequently, firms that have established such relations can be the first movers in new technologies, products or services. The attributes of networking integrated included pursuing strategic networks, establishing synergies among employees in pursuit of efficient processes and establishing working links with key partners. The research proposes that based on these operational indicators of networking, the construct of networking will have an effect on performance of the sampled deposit-taking SACCOs which leads to hypothesis one which is stated as:

Hypothesis 1: Networking as a component of social capital resource will have a significant positive effect on performance of the sampled deposit-taking SACCOs.

2.2.2.2 Reputation

The concept of firm reputation is viewed as the firm’s ability to offer value to customers through efficient processes and valuable products and services. Firms do not make good names overnight, but consistently good service results in repeat customers and a reputable brand. Customers want to do business with firms that can resolve their problems promptly, especially for sensitive sectors such as the financial sector. Ultimately such organisations have a high customer responsive rate enabling them to create strong brands. Clulow, Gerstman and Barry (2007) observed that firms that have developed a culture of honest customer dealings develop a pool of trusting clients who view the firm as reputable. Reputation creates value for the firm by decreasing customer uncertainty and improving customer satisfaction, and as a result, a broad customer base is formed, and market effectiveness is achieved (Lee & Roh, 2012).

Good corporate reputation increases the value of the firm's intellectual property and leads to improved firm performance. Firms with a good reputations are able to cut costs (Lee & Roh, 2012). This can be attributed to lower employee recruitment and retention costs and lower marketing costs. Lee and Roh (2012) examined the concept of corporate reputation in relation to the performance of firms in the United States of America and established a positive performance outcome for firms with an excellent corporate reputation. Ritthaisong, Johri and Speece (2012) interrogated a number of resources which were considered to be valuable to rice milling firms in Thailand and the firms' reputation and networks were found to have a positive influence on the performance of the firm. The attributes of reputation included in the study were integration of the behaviours that build a reputable brand in everyday tasks and a clear mission statement. The study therefore proposes that these attributes of reputation will positively contribute to performance of the sampled deposit-taking SACCOs. This leads to hypothesis two of the study which is stated as:

Hypothesis 2: Reputation as a component of social capital will have a significant positive effect on performance of the sampled deposit-taking SACCOS.

2.2.2.3 Culture

An organization's underlying philosophy or values which sets the firm apart from others is a product of its culture (Robbins & Judge, 2012). If an organization's culture adds value, is rare and cannot be mimicked perfectly (VRIO), it can be a source of competitive advantage and improved performance for the firm (DeLuca et al., 2018). Solid corporate cultures contribute to the performance of the firm due to their behavioural reliability (Singh et al., 2018). Corporate culture is the product of the firm's internal aspects (Wong et al., 2012). Organizational culture is not very flexible it is hard to accumulate and is not easily imitable by the competitors and is therefore not easily transferred (Chaudhuri, 2016).

Culture as an attribute of social capital has been viewed from the lens of its contribution towards innovation. It takes a culture of innovation in an organisation to develop rare resources. It is worth noting that a culture of innovation takes the lifetime of the organisation to create. Cultures are the product of many factors such as causal ambiguity, historical happenings and social complexity, which are firm specific (Apsalom, 2018). Therefore, an innovative culture could form the basis of a competitive advantage for the firm and contribute to the improved performance of the firm (Ali, Sirkova & Ferencova, 2016). Rival firms can easily imitate a valuable single resource. However, firms often form a sustainable advantage by combining several valuable resources (Cardeal & Antonio, 2012). The different resources may not be unique on their own; however, when used together, they form a unique resource that contributes to the firm's competitive advantage. Such resources are embedded in other resources and are difficult for competitors to copy (Baridula & Mekuri-Ndimele, 2021). When a firm's advantage comes from a whole that is formed from different valuable parts, it is difficult for competitors to copy.

Clulow et al. (2007) observed that organisational culture and history create tacitness and causal ambiguity and went ahead to explain what tacitness and causal ambiguity mean for a firm. The authors explained that tacitness exists where critical resources are so embedded in the organisation's culture that they cannot be isolated. This embeddedness results in causal ambiguity, a situation in which it is not known which resources are responsible for positive outcomes. Therefore, a firm with a strong history and culture is likely to possess resources which are both tacit and have causal ambiguity, making it difficult for rivals to imitate, thus resulting in good performance. The attributes of culture integrated in the study included employee understanding and implementation of the firm's mission and mirroring the firm's mission in employee behaviour. The Study suggests that these attributes of culture when executed to build social capital among the deposit-taking SACCOs will contribute positively to attainment of their desired goals. Therefore, hypothesis three of the study is stated as:

Hypothesis 3: The attributes of culture deployed to build social capital resources among the deposit-taking SACCOs will have significant positive effect on their performance.

3. Research Methodology

3.1 Research Design

The study employed the positivist philosophy which allowed the researchers to combine logical deduction with precise empirical observations (Sekaran & Bougie, 2016). The explanatory and descriptive research designs were adopted. Quantitative data was analysed objectively, and study hypotheses were tested empirically in line with Maxwell and Mitapalli's (2010) description of how explanatory studies should be conducted. Saunders *et al*.

(2007) posit that an explanatory research design seeks to establish if what is being observed can be explained by an existing theory, and the current study investigated the effect of networking, reputation and culture on firm performance as explained in the resource-based view, institutional theory and social capital theory. Using the descriptive research design, the researchers could capture the study populations' characteristics and test hypotheses, as posited by Mugenda and Mugenda (2012).

3.2 Population and Sampling Procedure

The target population for this study was the list of all 34 Deposit-taking SACCOs in Nairobi City County licensed to do business by SASRA in the year 2020. Since the whole population of Deposit-taking SACCOs in Nairobi City County was 38, a census was carried out for the study. Four of the Deposit-taking SACCOs participated in the pilot study and the other 34 participated in the study. Purposive sampling was used to select four respondents from each organization. In research, particular persons or certain units can be selected deliberately for a specific purpose for the critical information that only they can provide for the study, which any other choice may not provide (Teddlie & Yu, 2007). The front office service activity managers, information and communication technology managers, human resources managers and finance managers were selected as respondents in this study since they are experts on the subject matter and were believed to possess sufficient knowledge to provide the required information.

3.3 Research Data

Primary data was collected using structured questionnaires. The questionnaire was a 5 point likert scale. The drop-and-pick method was used to distribute and pick the questionnaires from the respondents. The validity and reliability of the research instrument were assessed before administering it in the main survey. The questionnaire explored the respondent's views on the variables of the study. Social capital resources were operationalized as networking, reputation and culture. Networking was operationalized as pursuing strategic networks, establishing synergies among employees to form valuable resources and establishing links with key partners in the research instrument. Reputation was operationalized as integration of the behaviours that build a reputable brand in everyday tasks and a clear mission statement in the research instrument. Culture was operationalized as employee understanding and implementation of organization's mission and mirroring the mission in staff behaviour in the research instrument.

Data was analysed using the Statistical Package for the Social Sciences (SPSS Version 26). Data were represented in the form of tables and charts. Descriptive statistics such as frequencies, percentages, mean and standard deviation were used to describe the characteristics of study variables. Inferential statistics were carried out using multiple linear regression to establish the relationship between the variables under study and test the hypotheses. The tests for the significance of the hypotheses were done by comparing the p-value of F statistics with a significance value of 0.05, and if the p-value was less or equal to 0.05, it was concluded that the model was statistically significant. Adjusted R^2 was computed to measure the amount of variation in the dependent variable (firm performance) that the independent variables could explain.

The study ensured internal, external, content, construct and face validity through literature review and consultation with subject experts. Cronbach's alpha ($\alpha \geq 0.7$) was used to check on reliability. The study conducted diagnostic tests on the data collected before conducting regression analysis. The diagnostic tests conducted were normality, linearity, multicollinearity, homoscedasticity, and factor analysis. The results of the diagnostic test results are indicated on Table 1. Before conducting regression analysis, the basic assumptions of linear regression must be adhered to (Teddlie & Yu, 2007). The results on table 1 indicate that all the results for the diagnostic tests fell within the threshold required for data to be analysed using regression analysis. The normality test demonstrated that data was normally distributed. The correlation test indicated that the dependent variables and the independent variable were strongly associated.

Table 1: Diagnostic Test Results

Assumption	**Test**	**Result**	**Comments**
Factor Analysis	Factor loading	All scores were above 0.40	Retained
Normality	P-P Plot Shapiro-Wilki Test	The scatter dots fell within the line of best fit p-values greater than 0.05 for all variables	Data was normally distributed Data was normally distributed
Linearity	Pearson Correlation	For all the independent variables $r \neq 0$ and were significant at p-values < 0.05	Independent variables were related to the dependent variable
Multicollinearity	VIF and Tolerance	All the independent variables had a VIF $<$ 10 and a tolerance $\geq$ 0.01	No multiocollinearity
Heteroscedasticity	Levene Test	All the independent variables had a p-value > 0.05	No heteroscedasticity

The linearity test indicated that there was a linear relationship between the independent variables and the dependent variable. The multicollinearity and heteroscedasticity tests were negative. Since all the test results fell within the required thresholds, multiple linear regression was conducted for the study.

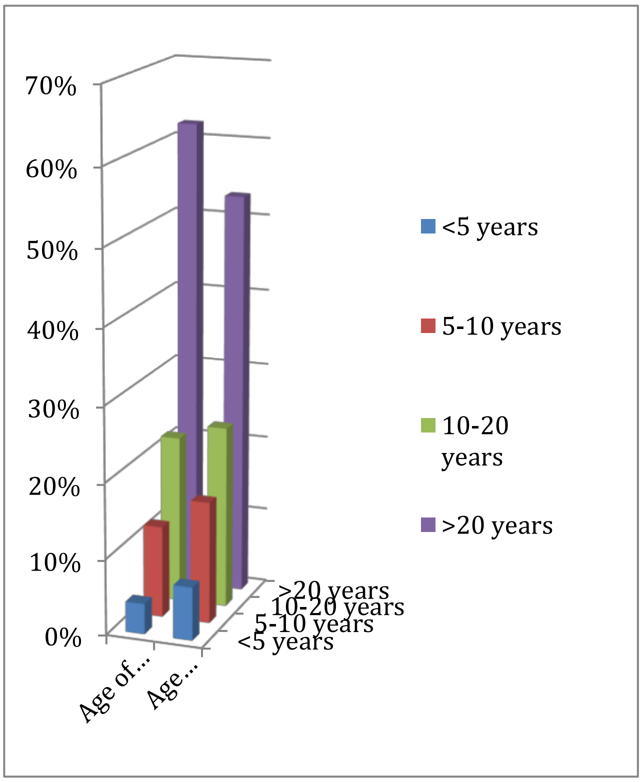
4. Results

A census of 34 deposit-taking SACCOs in Nairobi Kenya was carried out. Purposive sampling was used to select senior management employees as respondents in each of the deposit-taking SACCOs. The response rate for the study was 71%. Data was analysed using multiple linear regression analysis.

4.1 Demographic Information of the deposit-taking SACCOs

The study carried out an analysis of the demographic characteristics of the Deposit-taking SACCOs under study. The demographics included age of the deposit-taking SACCOs, registration period and the number of employees for each deposit-taking SACCO. This information was relevant because organizational age and number of employees are related to performance. In addition, the ability to renew annual trading licenses for many years is linked to sustained performance. The study sought to find out the age of each DT-SACCO and the duration each SACCO had been licensed to do deposit-taking business. The study findings are presented in figure 1.

Age of Deposit-taking Sacco and Duration a Deposit-taking Trading License has been Held	**Number of Staff Employed by the Deposit-taking SACCO**



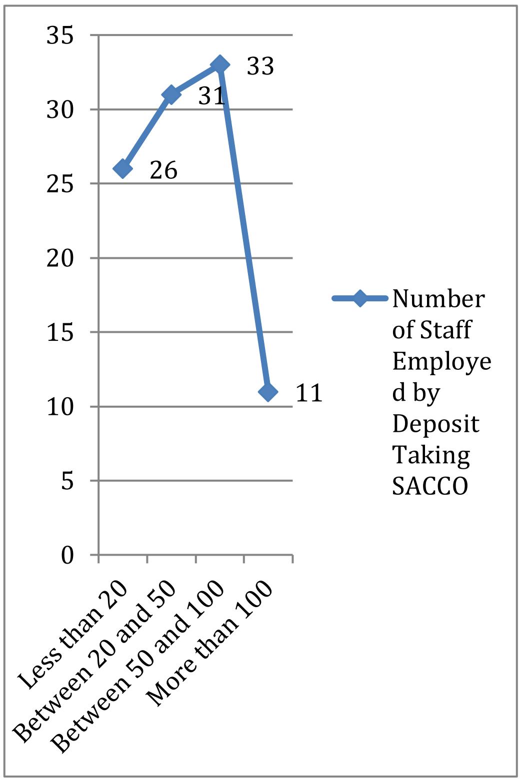


Figure 1: Age of Deposit-taking SACCO, the duration each had held a deposit-taking license and the number of employees in each deposit-taking SACCO

The results in figure 1 indicate that 4% of the SACCOs were under 5 years of age, 12% were between 5 and 10 years, 21.7% were between 10 and 20 years, and 62.3 % were above 20 years. The composition of the SACCOs in this study indicates a diverse age of Deposit-taking SACCOs and therefore ranges of different capacities and resources that affect performance.

The results also indicate that 7.1% of the SACCOs had been licensed to do deposit-taking business between 0-5 years ago, 15.8% had been licensed to do deposit-taking business between 5-10 years ago, 23.7% had been licensed to do deposit taking business between 10 and 20 years ago, and 53.4% had been licensed to do deposit taking business more than 20 years ago. The data indicates that the deposit-taking SACCOs were licensed at different times, and there was, therefore, diversity in the data collected. It is also an indication that the deposit-taking SACCOs had sustained good performance which was a requirement for them to obtain annual trading licences from the regulator SACCO Society Regulatory Authority.
The results indicate that 25.7% of the SACCOs had less than 20 employees, 30.7% had between 20 and 50 employees, a majority (32.7%) had between 50 and 100 employees, and 10.9% had more than 100 employees. These findings indicate that most deposit-taking SACCOs have more than 20 employees. This is a demonstration that deposit-taking SACCOs have invested in the human resource to enable them build other resources and make decisions on resource acquisition.

4.2 Variable Descriptive Characteristics

The study focused on deposit-taking SACCO's ability to form networks, build a good reputation and create an innovative culture. The descriptive analysis of the data is displayed in Table 2. The data analysis as shown in Table 1 indicate that the score for networking was (mean = 3.66, SD = 1.085). This is an indication that the respondents viewed networking as a critical factor in performance of their firms. The score for reputation was (mean = 3.75, SD = 1.096), a demonstration that reputation was viewed as critical in contributing towards the positive performance of the firm. The score for culture was (mean = 3.78, SD = 1.059), an indication that culture was thought to contribute towards the positive performance of the firm.

Table 2: Descriptive Analysis of Social Capital Resources

	Variable	Mean	Std. Dev.	Correlations			
				1	2	3	4
1	Networking	3.66	1.085	1.00			
2	Reputation	3.75	1.096	.865**	1.00		
3	Culture	3.78	1.059	.782**	.679**	1.00	
4	Performance	3.41	0.941	.851**	.826**	.714**	1.00

** Correlation is significant at the 0.01 level (2-tailed).

The variables were positively correlated and all the independent variables had a positive linear relationship with the dependent variable. A high Pearson Correlation Coefficient (r) value denotes a strong association between the two variables and a positive value is an indication of a positive linear relationship.

4.3 Research Hypotheses

Multiple linear regressions was carried out to establish the effect of networking, reputation and culture on the performance of deposit-taking SACCOs. The results are shown on Table 2.

Table 2: Social Capital Resources and Firm Performance

Parameter	Value	Observation	Conclusion
Adjusted R^2	**.513**	Social capital resources explain 51.3% of variation in performance	A moderately strong relationship is noted
F	**192.743**		The model is a good fit
p	**.004**	Model is statistically significant	
B Constant	**.298****	Significant positive effect of social capital resources on performance	
β Networking	**.346****	Significant positive effect of networking on performance	H_1 supported
β Reputation	**.379****	Significant positive effect of reputation on performance	H_2 supported
β Culture	**.222****	Significant positive effect of culture on performance	H_3 supported

** p<0.05

All the beta coefficients were statistically significant, with a p-value of less than 0.05. The results were; networking β = 0.346, p = 0.000; reputation β = 0.379, p = 0.000; culture β = 0.222, p = 0.000. The results indicate that the three hypotheses are supported. Thus the study concluded that the dimensions of social capital have a significant positive statistical effect on performance of deposit-taking SACCOs in Kenya. These findings were consistent with previous research findings by Ismail et al. (2012) and Wang & Wang (2012) who found that a good social capital base that cuts across networks provides opportunities that improve performance for the firm.

5. Discussion and Implications for Theory and Practice

The first objective of the study was to establish the effect of networking on the performance of deposit-taking SACCOs. The study findings indicate that (β = 0.346, p = 0.000). This means that a unit change in networking would lead to a 0.346 change in performance. The findings on H_1 are explained using a number of bases. First is the manner that the deposit-taking SACCOs have integrated the measures of networking in their practices. The deposit taking SACCOs had invested in networks between people in different departments and also with people outside the organizations. Networking activities with persons of influence outside the organizations enabled the deposit-taking SACCOs to acquire much needed resources such as financing and technology outside the organization. The descriptive mean for networking was (mean 3.66, SD=1.085) an indication that deposit-taking SACCOs invested in networking activities to a high extent. In addition, the firms learned about emerging trends and strategically positioned themselves ahead of competition. Through networking, firms are able to firm alliances that create essential synergies.

Second, the study relied on the postulates of the resource-based view proposition that states that successful processes and structures are created when people interact and, in the process, create idiosyncratic, complex and valuable resources (Barney, 2014). Processes created thus are socially complex because they are formed through resource embeddedness. This complexity could involve networking with employees from different departments within the organisation, or employees could use their networks outside the organisation to resolve an emerging challenge. Ha (2021) noted that such networks open channels that enable firms to receive valuable information that is not available to competitors. If, for instance, an employee establishes a contact outside the organisation that could help a customer verify their loan application documents faster, it might reduce loan processing turnaround time. The process might further be simplified by automating the document verification processes between the deposit-taking SACCO and the external source. In the case of deposit-taking SACCOs, the external source could be the customer's employer. Such social complexities involve different individuals who are brought together by the need to resolve emerging customer challenges.

Thirdly, the study drew from the logic of the institutional theory that states that firms perfect their processes over time through interactions with persons inside or outside the firm. The processes become part of the firm's way of doing business and a source of their competitive advantage (Thoenig, 2011). Competitors' attempts to imitate such a process may fail because they will not be able to socially replicate all the factors at play when such processes were formed. Social capital theory on the other hand, observes that firms intentionally invest in relations that are deemed necessary for the firm's survival. Such relationships can be built by individual members of the firm or by the firm as a social unit (Claridge, 2018). The relationships become part of the firm's social capital and can be called upon by the firm when in need. The firms build social capital by investing in membership in essential groups, supporting partner firms, and attending events held by key partners among other activities.

Based on the explanation provided on the findings on $H_{1,}$ the study raises two implications, namely, the process by which networking affects performance of the strategic actions firms need to initiate. With regard to the process, it is observed that the positive effect brought about by networking arises from partnerships that create efficient processes therefore generating capability type of conditions setting the stage for sustained performance. This then suggests that the management of organizations needs to focus on strategic actions that support employee and managers to network at micro and macro levels of organizational analysis and seek to emphasize the need to make us of the networks to develop resources internally and acquired VRIN enabled resource externally.

The second objective of the study was to establish the effect of reputation on the performance of deposit-taking SACCOs. The study findings indicate that ($\beta = 0.379$, $p = 0.000$). This means that a unit change in reputation would lead to a 0.379 change in performance. The findings on H_2 are explained using a number of bases. To begin with are the activities in which the deposit-taking SACCOs undertook in order to build their reputation. The deposit-taking SACCOs built their reputation by offering a consistent brand to their customers. Organizations create trust by meeting their obligations to customers, suppliers and other partners in time. The descriptive mean for reputation was (mean 3.75, SD=1.096) an indication that deposit-taking SACCOs invested in activities that aided in building their reputation to a high extent. Some have set service level agreements and other covenants that govern their service offering. The service offering agreement is set in the firm's mission statement and is achieved by integrating the mission statement in daily employee tasks.

The study results are also explained by the social capital theory premise which states that a firm's relationship with its partners is based on trust levels (Akram, et al. 2016). The relationship with partner's such as suppliers are governed by the supplier's trust that the firm will meet their payment obligations within the stipulated time. Firms that are consistent in meeting customer needs and keeping their work are respected and trusted. Consistency in meeting social obligations leads to reciprocity from partner firms. Trust and reciprocity result to high levels of reputation for the firm. Reputable firms have more new customers and their customer retention levels are also high. In addition, the results are explained by the institutional theory premise which states that there are norms that are set in every industry that govern the firm's in the industry (Baumol et al., 2008). Financial institutions are controlled by regulators and their licensing is based on such firm's conforming to regulatory guidelines. The firms therefore have to operate within institutionalized frameworks that make it possible for them to access resources available in the industry.

These findings on H_2 raise two implications for strategic management knowledge development and the practice of strategic management in organizations. Regarding the knowledge development, the findings offer insights on the manner that the reputation component of social capital affects performance through the integration of the organizational mission in to management practices that end up creating trust achieved through stakeholder satisfaction and compliance to regulatory requirements. On the part of the practice of strategic management, the study offers a justification for organizations to consider investments in relevant strategic management practices that help firms to earn and sustain reputation in the context of its operation.

The third objective of the study was to establish the effect of culture on the performance of deposit-taking SACCOs. The study findings indicate that ($\beta = 0.222$, $p = 0.000$). This means that a unit change in culture would lead to a 0.222 change in performance. The descriptive mean for culture was (mean 3.78, SD=1.059) an indication that deposit-taking SACCOs invested in activities that aided in growing an innovative culture to a high extent. The findings on H_3 are explained using a number of bases. First the deposit-taking SACCOs empowered their employees to develop a culture of innovation. Employees came up with new more efficient processes as solutions to customer problems.

The results are also explained by the institutional theory which states that, organizations are governed by unwritten rules that are formed over a long period of time. The unwritten rules of engagement determine firm processes and structures (Thoenig, 2011). These processes and structures are slow in decay as they are passed on to successive generations of team members, thus forming a culture of innovation. Effectively, the unique cultures give birth to heterogeneous processes that contribute to the inimitability of resources responsible for a firm's competitive advantage and improved performance.

The processes have causal ambiguity because their development is driven by an urgent need to generate positive stakeholder outcomes such as resolving emerging problems. Such processes are rarely documented in their formative stages (Fahy, 2000). If such processes succeed in the resolution of emerging problems, they are gradually institutionalised and become the norm in handling similar subsequent problems. Firms who actively form new processes that are more responsive to customer needs build a positive reputation retaining more customers in the process and ultimately improving their performance (Akram et al., 2016). On the other hand, since such processes are undocumented, they are inimitable. In addition, such processes are valuable and rare. They are valuable because they fulfil a customer need and rare because of their specificity in problem resolution. The new resources thus formed embody the characteristics of value, rarity and inimitability, which, according to the resource-based view, are necessary for a firm's improved performance (Barney, 2014). In consideration of these implications, deposit-taking SACCOs should invest in activities that promote a firm specific innovative culture that will aid them in developing more customer oriented solutions.

The current study contributes to knowledge by demonstrating how the resource-based view, the institutional theory and social capital theory explain how firms build heterogeneous resources through different actions. The research considered how specific critical factors, such as integrating employee behaviours in building reputable brands, contributed to the firm's performance. In addition, the study examined the effect of aligning everyday tasks to stakeholder expectations. It is through such processes that firms gradually build innate heterogeneous resources. By having employees mirror the firm's vision in their behaviours instead of memorising the firm's vision, the firm can build socially complex resources that cannot easily be explained and therefore become inimitable by other firms. Further, by aligning structures to achieve organisational vision, the firm can build valuable structures that improve the performance of the firm.

The study further addresses one of the fundamental critiques of the resource-based view, which states that the theory has limited prescriptive implications, as presented by Priem and Butler (2001). The current study addresses this by linking specific firm actions, such as mirroring the firm's vision in staff behaviour, linking specific actions to stakeholder outcomes, aligning structures to organisational vision, aligning mission to services and products and integrating behaviours that build reputable brands in everyday tasks. The study, therefore, provides managers with specific actions that they can take towards building heterogeneous resources for their firms in a bid to improve firm performance.

6. Conclusions of the Study

The first objective of the study sought to establish the effect of networking on performance of deposit-taking SACCOs. The study found a significant positive effect of networking resources on performance of deposit-taking SACCOs in Nairobi City County, Kenya. This effect emanated from ease of acquisition of resources that resulted from networks with partner organisations, regulatory bodies and suppliers. The study points that networking resources aided in development of new capabilities. Because of their social complexity and causal ambiguity, such capabilities result in resources that have VRIN qualities (valuable, rare, inimitable and non-substitutable). The study concludes that VRIN attributes of resources developed through networking contribute to the process by which organizations sustain desired performance.

The second objective of the study sought to establish the effect of reputation on the performance of deposit-taking SACCOs in Nairobi City County, Kenya. The study found a positive and significant effect of reputational resources on performance of deposit-taking SACCOs in Nairobi City County, Kenya. The positive effect was attributed to trust that emanates from honest dealings between the deposit-taking SACCOs, and its stakeholders over time. The study concludes that various initiatives by firms to build and sustain reputation contribute positively to performance of the organizations.

The third objective of the study sought to establish the effect of culture on the performance of deposit-taking SACCOs in Nairobi City County, Kenya. The study found a positive and significant effect of culture on performance of deposit-taking SACCOs in Nairobi City County, Kenya. The positive effect emanates from resources that are formed through institutionalisation of innovative problem solving behaviours aimed at getting solutions to customer needs. The study concludes that an organization’s attempts to build social capital through relevant cultural attributes contribute positively to its performance.

The conclusions of the study are not without limitations. The authors cite three limitations based on context, conceptualisation and methodology. In terms of context, the study was done in Nairobi region and excluded the deposit-taking SACCOs in the regions with different economic and demographic characteristics. The conceptualisation considered only three attributes of social capital while in terms of population; the study relied on managers within the deposit-taking SACCOs. Future research can mitigate on these limitations to achieve generalisability of the findings. Such efforts could consider more dimensions of social capital to be investigated in the entire deposit-taking SACCO family as well as the entire financial sector. In addition, the population could be expanded to include external stakeholders such as the external stakeholders and membership of the deposit-taking SACCOs who also constitute the clientele.

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An Empirical Assessment of the Welfare Impacts of the Rising Global Price of Food: The Case of Haiti

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Abstract
Global food price inflation has serious implication toward welfare and food and nutrition security in developing countries where most of the population are classified as low-income and are net-food importers. Haiti is one such nation which depend heavily on trade for food, making them extremely vulnerable to global food price increase. This study aims to investigate the welfare impact of rising global prices of imported food on Haitian consumers using annual data from 1980-2021. The LA-AIDS model was employed to estimate Hicksian price and income elasticities for the five major imported food categories, and compensating variation was used to assess the welfare impacts of rising global food prices on Haitian consumers. The study finds that all imported food categories were import price inelastic, except for meat which was price elastic. Cross-price elasticities indicated substitution and complementary relationships between various pairs of imported food categories. Income elasticities showed that demand for cereals and dairy was income inelastic, while demand for meat, vegetable oil, and sugar was income elastic. The welfare exercise revealed that price increases between 2006-2008, 2010-2013, and 2020-2021 resulted in welfare losses of around US$223.91 million, US$89.33 million, and US$458.50 million, respectively. It was also discovered that imported cereals and vegetable oil accounted for most of the lost welfare during the study periods. The results of this study provide valuable information for policymakers to develop policy intervention strategies that aims to safeguard the welfare of Haitian consumers.

Keywords: Food Imports, Compensating Variation, Welfare, Food Price Inflation, Haiti

1. Introduction

Over the last two decades, the Caribbean and Latin American region has become heavily reliant on international trade for food and capital goods (Pollard *et al.* 2008). The rising global price of food has become a growing concern for many developing nations due to the adverse impacts it has on food and nutrition security and the welfare of vulnerable populations. Rising global food prices threaten to exacerbate hunger, malnutrition, and poverty, and disrupts the economic and social stability of affected counties (Ben Hassen and El Bilali 2022, Fan *et al.* 2020, Darnton-Hill and Cogill 2010). Haiti is a small island nation situated in the Caribbean which is vulnerable to increasing global food prices (Mazzeo 2009, Himmelgreen and Romero-Daza 2009, Compton *et al.* 2010). Haiti is regarded as one of the most food-insecure nations in the world (Rasul *et al.* 2022). In 2016, it was estimated that around 30% of households were food-insecure (World Food Programme 2016), however, current estimates in 2022 indicates that around 43% of the population experience acute food-insecurity (FAO 2022b). The combination of a low level of domestic food production and a highly import-dependent food system positions Haiti as extremely vulnerable to global food price shocks and has posed a significant challenge to the country's food security and overall welfare.

Haiti's domestic food production and agricultural sector have been historically weak due to factors such as environmental degradation, deforestation, and political instability (Williams 2011, Goldstone 2018). These factors have limited the country's capacity to produce enough food to meet its growing population's needs, resulting in an overreliance on imported food products. Agriculture is the backbone of Haiti's economy, and the sector employs over two-thirds of the country's population, especially in rural areas. However, despite the sector's significant contribution to employment and the economy, agricultural productivity remains low, and the country continues to rely heavily on food imports to meet its food and nutritional needs.

The state of global food prices has a profound impact on Haiti's food and nutrition security and overall welfare. Rising food prices can exacerbate the country's already precarious food situation by increasing the cost of imported food products, making them less affordable for low-income households. The volatile nature of global food prices can also lead to price spikes, which can have severe implications for the country's food security, particularly during times of crisis, such as natural disasters or pandemics. In recent years, the global food price index has been on an upward trend, driven by factors such as climate change, trade policies, and the COVID-19 pandemic, which has disrupted global supply chains (Vidya and Prabheesh 2020, Vo and Tran 2021, Chakraborty 2023). The Food and Agriculture Organization (2022a) published data that highlights current trends in the global price of food. It was revealed that there was a significant increase in the world food price index from 72.6 points in 2006 to approximately 117.5 points in 2008, representing an uptick of around 61.9% (FAO 2022a). The global price of cereals, vegetable oils, dairy, and meat saw a significant surge during this period, with increases of 93.3%, 100.1%, 93.3%, and 17.3% respectively, as reported by the FAO (2022a). In the subsequent five-year period, from 2018 to 2022, the world food price index continued to exhibit an upward trend, rising from 95.9 points in 2018 to 145.8 points in 2022. This translates to a more than 55% surge in global food prices between 2018 and 2022.

The increase in food prices has far-reaching implications on food and nutrition security, as well as poverty levels in developing countries such as Haiti. To mitigate these effects, it is essential for governments and policymakers to institute policy interventions aimed at safeguarding consumer welfare. The impact of rising food prices on poor households is particularly significant, given that their food consumption level may already be at subsistence level, and the additional strain increases their vulnerability to food insecurity (Gregory and Coleman-Jensen 2013, Amolegbe *et al.* 2021). Furthermore, food price increases are also found to exacerbate poverty in various countries globally (Headey and Martin 2016, Warr and Yusuf 2014, Dhahri and Omri 2020)

Several studies have been conducted in various countries to evaluate the impacts of rising food prices on households, including Groom and Tak (2015) and De Janvry and Sadoulet (2009) for India, Attanasio *et al.* (2013) and Avalos (2016) for Mexico, Cudjoe *et al.* (2010) for Ghana, Khoiriyah *et al.* (2023) and Allo *et al.* (2018) for Indonesia, Ferreira *et al.* (2013) and Dimova (2015) for Brazil, Azzam and Rettab (2013) and Azzam and Rettab (2012) for the UAE, Aftab *et al.* (2015) and Idrees *et al.* (2012) for Pakistan, Aftab *et al.* (2017) for South Asian Countries, Tefera *et al.* (2012) and Shimeles and Woldemichael (2013) for Ethiopia, Layani *et al.* (2020) and

Farajzadeh and Esmaeili (2017) for Iran, Aghabeygi and Arfini (2020) for Italy, Van Wyk and Dlamini (2018) and Giwa and Choga (2020) for South Africa, and Adoho and Gansey (2019) for the Congo among many others. However, no study that explicitly focuses on the welfare impacts of rising global price of imported food on Haitian consumers has been done to date. This demonstrates the timely nature of this study.

Therefore, the purpose of this study is to investigate the welfare impacts of increasing global prices of imported food on Haitian consumers. The study utilizes annual import data for the period 1980-2021 and the linear approximate almost ideal demand system (LA-AIDS) model to derive price and income elasticities for five major imported food categories – cereals, meat, dairy, vegetable oil, and sugar. In order to evaluate consumer welfare, we employ the concept of compensating variation (CV), which measures the amount of income that would have to be transferred to a consumer in order to maintain their original level of utility in response to a price change. This study has important implications for policymakers, as it highlights the need for targeted interventions to mitigate the negative welfare effects of rising global food prices on vulnerable households in Haiti.

2. Materials and Method

2.1. Welfare Analysis

The welfare literature is proliferated with several indices for measuring the changes in welfare that result from different policies regimes (Slesnick 1998, Khoiriyah *et al.* 2023, Gohin 2005). One of the factors that can cause changes in welfare is fluctuations in economic conditions, such as changes in prices. When prices change, consumers may experience changes in their level of utility, which can be measured using various criteria such as Consumers Surplus (CS), Compensated Variation (CV), and Equivalent Variation (EV). According to Azzam and Rettab (2012), Tefera *et al.* (2012) and Aghabeygi and Arfini (2020), in the context of rising global price of food, CV is the minimum amount that consumers are willing to accept (WTA) in exchange for tolerating higher food prices. On the other hand, EV is the maximum amount that consumers are willing to pay (WTP) to avoid higher food prices. Furthermore, CV represents the amount of compensation that would need to be provided to consumers in order to maintain their initial level of utility despite the rise in food prices while EV represents the amount of money that consumers would be willing to pay to maintain their initial level of utility in the face of rising food prices.

In order to study the welfare impact of rising global prices of imported food on Haitian consumers, we will be using CV, as it has been utilized in previous studies by Azzam and Rettab (2012), Azzam and Rettab (2013), Tefera *et al.* (2012), Aghabeygi and Arfini (2020), Layani *et al.* (2020) and Roosen *et al.* (2022). The CV approach to assessing change in welfare brought about by changes in prices begins with the consumer problem of minimizing their expenditures on a set of *N* food commodities while maintaining a desired level of utility, denoted as U^0. Once the optimal Hicksian quantities are determined from this problem, they can be substituted into the expenditure equation to derive the minimized expenditure function. This approach has been outlined in detail by Azzam and Rettab (2012) as follows:

$$E = E(P_1, P_{2,\dots}P_3, U^0) = p_1 q_1^H(P_1, P_{2,\dots}P_3, U^0) + p_2 q_2^H(P_1, P_{2,\dots}P_3, U^0) + \cdots + p_N q_N^H(P_1, P_{2,\dots}P_3, U^0) \tag{1}$$

Where P_i for $I = 1,2,\dots,N$ is respected to N commodity prices, and the superscript *H* stands for Hicksian. Denoting the initial and the subsequent periods by superscripts ‘‘0’’ and ‘‘1’’, respectively, consumer WTA to tolerate higher prices is given by:

$$CV = E(p_1^1, p_{2,\dots,}^1 p_N^1, U^0) - E(p_1^0, p_{2,\dots,}^0 p_N^0, U^0) \tag{2}$$

Using equation (1), we can expand equation (2) as follows:

$$CV = p_1^1 q_1^H(p_1^1, p_{2,\dots,}^1 p_N^1, U^0) - p_1^0 q_1^0 + p_2^1 q_2^H(p_1^1, p_{2,\dots,}^1 p_N^1, U^0) - p_2^0 q_2^0 + \cdots + p_N^1 q_N^H(p_1^1, p_{2,\dots,}^1 p_N^1, U^0) - p_N^0 q_N^0 \tag{3}$$

Direct measurement of CV using equation (3) is not possible since the Hicksian demand function q_i^H for i = 1,2,…,N is dependent on the level of utility given by U^0, which is not observable. However, the respective changes in prices and Hicksian quantities can be defined as (Azzam and Rettab 2012):

$$dp_i = p_i^1 - p_1^0 \quad for\ i = 1,2,\dots,N$$
$$dq_i^H = q_i^H - q_i^0 \quad for\ i = 1,2,\dots,N \tag{4}$$

Substitution of equation (4) into equation (3), CV is approximated by:

$$CV = p_1^0 q_1^0 \left(\frac{dp_1}{p_1^0} + \frac{dq_1^H}{q_1^0} + \frac{dp_1}{p_1^0}\frac{dq_1^H}{q_1^0}\right) + p_2^0 q_2^0 \left(\frac{dp_2}{p_2^0} + \frac{dq_2^H}{q_2^0} + \frac{dp_2}{p_2^0}\frac{dq_2^H}{q_2^0}\right) + \cdots + p_N^0 q_N^0 \left(\frac{dp_N}{p_N^0} + \frac{dq_N^H}{q_N^0} + \frac{dp_N}{p_N^0}\frac{dq_N^H}{q_N^0}\right) \tag{5}$$

However, there is still one short-coming in equation (5) since the percentage change in Hicksian quantities is not directly observed. However, an approximation of the change can be derived via the total differential of the Hicksian demand functions as follow:

$$\begin{aligned} \frac{dq_1^H}{q_1^0} &= \epsilon_{11}^H \frac{dp_1}{p_1} + \epsilon_{12}^H \frac{dp_2}{p_2} + \cdots + \epsilon_{1N}^H \frac{dp_N}{p_N}, \\ \frac{dq_2^H}{q_2^0} &= \epsilon_{21}^H \frac{dp_1}{p_1} + \epsilon_{22}^H \frac{dp_2}{p_2} + \cdots + \epsilon_{2N}^H \frac{dp_N}{p_N}, \\ \frac{dq_N^H}{q_N^0} &= \epsilon_{N1}^H \frac{dp_1}{p_1} + \epsilon_{N2}^H \frac{dp_2}{p_2} + \cdots + \epsilon_{NN}^H \frac{dp_N}{p_N}. \end{aligned} \tag{6}$$

Where ϵ_{ij}^H is the Hicksian price elasticity for i = 1, 2, . . ., N and j = 1,2, . . ., N.

2.2. The LA-AIDS Model

The almost ideal demand system (AIDS) model proposed by Deaton and Muellbauer (1980), is one of the most popular demand system used in empirical studies. Barnett and Seck (2008) attribute its popularity to several desirable properties, including perfect aggregation over consumers, exact satisfaction of the axiom of choice, a consistent functional form that fits known data, ease of estimation, and the ability to impose and test for theoretical restrictions of homogeneity and symmetry. Alston and Chalfant (1993) and Eales and Unnevehr (1991) further note that these properties have contributed to the widespread use of the AIDS model in the empirical literature.

The AIDS model for each imported food ground in budget shares is given as follows:

$$w_i = \alpha_0 + \sum_j \gamma_{ij} log p_j + \beta_i \log\left(\frac{M}{P}\right) + \varepsilon_i \tag{7}$$

where w_i is the budget share of the *ith* imported food commodity obtained by dividing expenditure on the ith group by total expenditure on all groups, p_j is the price of the *jth* imported food commodity, M is the total expenditure on all imported food commodities, and ε_i is a white noise error term. α, γ and β are all parameters to be estimated. P is a price index which according to Deaton and Muellbauer (1980) is given as follows:

$$lnP = \alpha_0 + \sum_{i=1} \alpha_i ln p_i + \frac{1}{2}\sum_{i=1}\sum_{j=1} \gamma_{ij} ln\, p_i\, ln p_j \tag{8}$$

Equation (7) estimated with the price index given by equation (8) is commonly referred to as the traditional AIDS model. To ensure that the model is consistent with demand theory the parameters are restricted using the adding-up, homogeneity and symmetry restrictions given by:

Adding-Up:
$$\sum \alpha_i = 1\,;\ \sum \beta_i = 0\,;\ \sum_{i=1}^{n} \gamma_{ij} = 0 \tag{9}$$

Homogeneity:
$$\sum_{i=1}^{n} \gamma_{ij} = 0 \tag{10}$$

Symmetry:
$$\gamma_{ij} = \gamma_{ji} \tag{11}$$

The adding-up restriction is automatically satisfied by simply omitting one of the share equations during estimation then recovering the parameters post-estimation. Homogeneity and symmetry restrictions are imposed during estimation of the share equations.

Despite its widespread use, the traditional AIDS model can be challenging to estimate due to the non-linearity of the model parameters resulting from the use of the price index in equation (8). This issue has been noted by several researchers, including Taljaard *et al.* (2004) and Rathnayaka *et al.* (2019). To address this problem, Deaton and Muellbauer (1980) suggested using the stone price index as an alternative to the price index in equation (8). This stone price index provides a linear specification of prices and is given by the sum of the price and quantity weighted average of the prices of all goods consumed as follows:

$$\ln P^s = \sum_{i=1} w_i \, lnp_i \tag{12}$$

Using the price index outlined in equation (12) yields the linear approximate almost ideal demand system (LA-AIDS) model which is just as popular as the traditional AIDS model in the empirical literature. The LA-AIDS model is estimated using seemingly unrelated regression techniques to account for cross-equation correlation with theoretical restrictions imposed. In addition, in order to avoid singularity of the variance-covariance matrix, one of the share equations is omitted during estimation and later recovered via the adding-up restriction.

2.3. Deriving Price and Income Elasticities

In order to derive Hicksian price elasticities as highlighted in equation (6), the estimated parameters of the LA-AIDS model are utilized. Hicksian price elasticities are derived using the formula:

$$\epsilon_{ij}^{H} = -\delta_{ij} + \left(\frac{\gamma_{ij}}{w_i}\right) + w_j \tag{13}$$

Where δ_{ij} is the Kronecker delta which takes the value of "1" for own-price elasticity and "0" for cross-price elasticity. For Hicksian own-price elasticity, it is expected that they should all be negative as per demand theory which postulates that there is an inversed relationship between price and quantity demanded. However, interpretation is done using the absolute value. Hicksian own-price elasticities with a value that is greater than unity means that the imported commodity has elastic demand or is very responsive to changes in price. In contrast, if the value is less than unity, it means that the commodity is not very responsive to price changes. Cross-price elasticities measure the relationship that exists between two commodities – substitution or complementary. If the cross-price elasticity between two commodities is positive, then they are substitutes. However, if the cross-price elasticity is negative, they are complements.

Income elasticities for each imported food are also calculated using the formula as follows:

$$\eta_i = 1 + \left(\frac{\beta_i}{w_i}\right) \tag{14}$$

Income elasticity measures the degree of responsiveness of demand brought about by changes in income. A positive income elasticity would mean that the commodity in question is a normal good which means increase in income fosters increased consumption. However, if the value of the income elasticity is positive and greater than unity, then the commodity is regarded as luxurious. In contrast, if the income elasticity is negative then the commodity is regarded as inferior. For inferior goods, increase in income decreases consumption.

2.4. Data and Source

This study utilized annual import data from FAOSTAT online database for five major imported food categories, namely cereals, meat, dairy, vegetable oil, and sugar for the period 1980-2021. All quantities are given in metric tonnes and expenditures are in US dollars. The unit value of imports, which was found by dividing expenditure of a commodity group by its respective quantities was used as a proxy from import prices since this data was not readily available. Budget shares for each commodity group were found by dividing food group expenditure by total expenditure. Finally, all empirical estimations were done using Stata 17.0 version. Welfare analysis calculations were done in Microsoft excel.

For the period, average annual food import expenditure was around US$655.29 million, however, in 2020 total food imports for the five major food groups under examination research US$1.67 billion which was around 56.7% higher than in 2011 (FAO 2023b). In terms of import volumes, Haiti imported around 2.22 million metric tonnes of food in 2020 which was around 82.2% more than in 2011 (FAO 2023b). In terms of domestic food production, Haiti produced around 10.97 million metric tonnes of food in 2011, however, in 2020 production was at around 9.21 million metric tonnes or fell by around 15.3% (FAO 2023a). Table 1 highlights the summary statistics of the budget shares and unit import prices for the five food groups for the period 1980-2021. Imported vegetable oils accounted for around 43.5% of total food import expenditure for the period followed by imported cereals which was around 35.0% on average annually. In contrast, imported meat, dairy, and sugar only accounted for around 4.5%, 7.6%, and 9.0% on average annually. In terms of import price per metric tonne, imported dairy and meat was the most expensive to import by Haiti, which was around US$1,496.53 and US$1,148.59, respectively. Imported cereals were the cheapest imported food commodity by Haiti on average during the study period which was around US$376.86 per metric tonne.

Table 1: Summary Statistics for Imported Food (1980-2021)

Variable	Mean	Std. Dev.	Minimum	Maximum
		Budget Share		
w_1	0.350	0.051	0.233	0.471
w_2	0.049	0.029	0.004	0.112
w_3	0.076	0.025	0.045	0.152
w_4	0.435	0.054	0.316	0.557
w_5	0.090	0.028	0.036	0.166
		Import Unit Price (US$ per Metric Tonne)		
p_1	376.86	140.49	190.63	663.85
p_2	1,148.59	342.22	601.43	2,106.06
p_3	1,496.53	221.95	1,050.28	2,051.83
p_4	928.82	125.79	735.38	1,129.58
p_5	427.75	121.91	230.03	765.79

Note: w=budget share and p=price, 1=Cereal, 2=Meat, 3=Dairy, 4=Vegetable Oil, 5=Sugar. N=42 observations.

Source: Calculations based on data from FAO (2023b)

3. Results and Discussion

3.1. Income and Hicksian Price Elasticities

The parameters of the LA-AIDS[1] model is used to compute price and income elasticities for the five imported food categories for Haiti which are presented in Table 2. All estimated Hicksian own-price price elasticities were found

[1] The estimated parameters of the LA-AIDS model are presented in Appendix A, Table A1.

to carry the appropriate negative sign as expected. In absolute terms, imported meat had the highest own-price elasticity (1.87). This means that a 1% increase in the import price of imported meat is expected to result in a 1.87% decrease in import volumes on average. Imported meat was found to have elastic import demand or is very responsive to changes in import prices. In contrast, imported cereals were found to be the least responsive to changes in import prices as a 1% increase in import prices only results in a 0.23% decrease in import volumes. Furthermore, imported cereals were found to be import price inelastic. Imported dairy, vegetable oil, and sugar were all found to have own-price elasticities of 0.57, 0.53, and 0.89, respectively. This means that a 1% increase in the import prices of imported dairy, vegetable oil, and sugar is expected to result in a 0.57%, 0.53%, and 0.89% decrease in import volumes on average, respectively. There three imported food categories were found to have income inelastic demand, or they are not very responsive to changes in import prices, although, import sugar is more elastic relative to dairy and vegetable oil. Furthermore, it is suggested that all imported food categories except meat are necessary in Haitian household consumption patterns.

Table 2 also presents the cross-price elasticities of import demand which measures the relationship between various pairs of imported food categories. Most of the computed cross-price elasticities were found to be positive, which suggest that mostly substitution relationships existed between various pairs of commodity groups. Imported cereals were found to have substitution relationships with imported meat and vegetable oil, however, there were complementary relationships with dairy and sugar. This means that when the import price of cereals increases by 1%, it is expected that the import demand for meat and vegetable oil should increase by around 0.02% and 0.31%, respectively. On the other hand, a 1% increase in the import price of cereals is expected to bring about a 0.03% and 0.06% decrease in the import demand for dairy and sugar, respectively. Imported vegetable oil and sugar was found to only have substitution relationships with other imported foods.

The study also computed income elasticities for the five imported food categories. The results are presented in Table 2. All income elasticities are positive which suggest that all imported food categories are normal[2] goods. Income elasticity for imported cereals and dairy was found to be 0.82 and 0.69. This means that a 1% increase in income of Haitians is expected to bring about on average a 0.82% and 0.69% increase in import consumption, respectively. Imported dairy products were found to be the least responsive to changes in income. However, both imported cereals and dairy were found to be income inelastic. Imported meat, vegetable oil, and sugar were found to be highly responsive to changes in income with income elasticities of 1.34, 1.09, and 1.33, respectively. This means that for imported meat, vegetable oil, and sugar, a 1% increase in income is expected to bring about a 1.34%, 1.09%, and 1.33% increase in import consumption, respectively. These imported food categories can be regarded as luxurious as they are highly responsive to changes in income. Data from the World Bank (2023) reveal that per capita income of Haitians is increase over time. For instance, between 2012 and 2021, per capita income has increased by around 34.5%, hence, if current trends in income continue we can expect import demand for meat, vegetable oil, and sugar to increase in the long-run.

[2] For normal goods, there is a direct relationship between demand and income. Increase in income is expected to bring about increase in consumption and vice versa.

Table 2: Income and Hicksian Price Elasticities

	Income Elasticity				
	Cereals	Meat	Dairy	Vegetable Oil	Sugar
	0.818	**1.337**	**0.692**	**1.091**	**1.334**
	(0.063)	**(0.204)**	**(0.118)**	**(0.041)**	**(0.123)**
Commodity	**Hicksian Price Elasticities**				
	P1	P2	P3	P4	P5
Cereals	**-0.234**	0.022	-0.031	0.305	-0.062
	(0.154)	(0.059)	(0.059)	(0.121)	(0.074)
Meat	0.158	**-1.866**	-0.307	1.534	0.481
	(0.418)	**(0.292)**	(0.227)	(0.318)	(0.253)
Dairy	-0.143	-0.199	**-0.569**	0.375	0.537
	(0.272)	(0.147)	**(0.237)**	(0.231)	(0.174)
Vegetable Oil	0.246	0.174	0.065	**-0.531**	0.046
	(0.097)	(0.036)	(0.040)	**(0.109)**	(0.050)
Sugar	0.369	0.069	0.095	0.454	**-0.891**
	(0.022)	(0.022)	(0.022)	(0.022)	**(0.022)**

Note: Standard errors in parentheses.

3.2. *Welfare Analysis Results*

After obtaining Hicksian own- and cross-price elasticities for the five imported food categories, in this section we examine the welfare impacts of the rising global price of imported food on Haitian consumers using compensating variation under three price shock scenarios. The price shock scenarios were determine by examining trends in the FAO (2022a) world food price index.

3.2.1. Price Shock Scenario A: 2006-2008

The first price shock scenario is defined as the average increase in global food prices between 2006-2008. According to data from FAO (2022a) world food price index, between 2006-2008 imported cereals, meat, dairy, vegetable oil, and sugary experienced an average increase of around 31.7%, 8.2%, 23.4%, 30.8%, and 14.9%, respectively. During that period, average annual food import expenditure was around US$764.17 million. The resulting CV presented in Table 3 reveals that welfare losses from the price increase of the five imported food categories was around US$223.91 million on average. In other words, Haitian food imports need to be compensated with around 29.3% of their 2008 total expenditure on food in order to accommodate the adverse impact of global food price changes between 2006-2008. Imported cereals accounted for the most welfare loss during the period from price increases which was around US$95.56 million or around 42.7% of total welfare loss. This was followed by imported vegetable oil which accounted for around US$74.6 million in loss welfare for the period. These two imported food categories accounted for more than 75% of total loss welfare between 2006 and 2008. Imported dairy accounted for the least welfare loss for the period which was only about 5.3% of total welfare loss or US$11.9 million.

Table 3: The welfare impacts of price changes (2006–2008).

Commodity	Average Imports (Millions US$)	Price Change* (%)	Quantity Change (%)	CV (Millions US$)	CV (%)
Cereal	294.90	31.73	0.51	95.56	42.68
Meat	34.09	8.19	36.98	16.43	7.34
Dairy	50.47	23.41	0.05	11.85	5.29
Vegetable Oil	305.93	30.83	-4.94	74.57	33.30
Sugar	78.78	14.85	15.26	25.51	11.39
Total	764.17	-	-	223.91	100

Source: Obtained from the World Food Price Index (FAO 2022a).

Table 4 presents the welfare effects of the 2006-2008 global food price increase on Haiti. It was found that the highest and lowest amount of loss welfare was from cereals (US$125.86 million) and vegetable oil (US$101.88 million). This means that based on the average import share of cereals (38.6%) and vegetable oil (40.0%) between 2006-2008, after rising global prices, welfare is expected to decrease, and the import expenditure compared to the previous period will increase. Hence, for imported cereals and vegetable oil, to compensate for the lost welfare caused by the price increase in order to ensure that consumer utility remains unchanged after the price increase, around US$125.86 and US$101.88 million must be added to the total expenditure of these food categories, respectively. Furthermore, around US$241.88 million is needed to compensate Haitian consumers for increase in food prices in order to maintain the same level of utility after the price increase.

Table 4: The welfare effects of rising global food prices for consumers in Haiti (2006-2008).

	Cereal	**Meat**	**Dairy**	**Vegetable Oil**	**Sugar**
Average Import Expenditure*	294.90	34.09	50.47	305.93	78.78
Import Expenditure Share (%)	38.59	4.46	6.60	40.03	10.31
Weight of Welfare Effect (%)	42.68	7.34	5.29	33.30	11.39
Welfare Loss*	125.86	2.50	2.67	101.88	8.98
Share of Lost Welfare (%)	52.03	1.03	1.10	42.12	3.71

Note: * Figure is in Millions of US$.

3.2.2. Price Shock Scenario B: 2010-2013

The second price shock scenario used to assess the welfare impact of rising global prices of food in Haiti is between 2010-2013. According to data from FAO (2022a) world food price index, imported dairy products experienced the most increase in prices during that period which was around 12.7% while imported sugar saw only a 1.1% increase in prices (Table 5). Table 5 also presents the average compensating variation values for the five imported food categories which showed that loss welfare between 2010-2013 due to increasing prices was around US$89.33 million. The results reveal that Haiti need to be compensated with approximately 7.8% of their 2013 food import expenditure in order to tolerate the adverse impact of rising prices of food between 2010-2013. Between 2010-2016, the highest amount of CV as a result of increasing prices was from imported vegetable oil which was around US$40.07 million or 44.9% of average total food imports for the period. Additionally, imported cereals experienced around US$32.88 million in welfare losses or around 36.8% of total average food imports. Imported meat experienced the least welfare losses during this period compared to all other imported food categories despite seeing increase in expenditure over the period. Welfare losses from meat were only around US$3.48 million or about 3.9% of average total food expenditure for the period.

Table 5: The welfare impacts of price changes between 2010-2013.

Commodity	**Average Imports (Millions US$)**	**Price Change (%)**	**Quantity Change (%)**	**CV (Millions US$)**	**CV (%)**
Cereal	383.35	8.36	0.20	32.88	36.81
Meat	88.04	7.16	-3.00	3.48	3.89
Dairy	72.18	12.66	-6.19	4.11	4.60
Vegetable Oil	503.77	8.07	-0.11	40.07	44.86
Sugar	101.65	1.14	7.43	8.80	9.85
Total	1,148.99	-	-	89.33	100

Source: Obtained from the World Food Price Index (FAO 2022a).

In terms of the welfare effects of the rising global price of food in Haiti for the period 2010-2013, the highest amount of welfare loss is experienced by imported vegetable oil which was around US$225.98 million followed by imported cereals which was US$141.09 million on average (Table 6). This means that according to the share of food import expenditure for imported vegetable oil (43.8%) and cereals (33.4%), after rising global price of food, welfare is expected to have decreased and import expenditure compared to the previous period would have increased. Therefore, to compensate for lost welfare and to ensure that that Haitian consumers maintain their initial level of utility after the increasing global price of food, around US$383.83 million should be added to total food import expenditure.

Table 6: The welfare effects of rising global food prices for consumers in Haiti (2010-2013).

	Cereal	Meat	Dairy	Vegetable Oil	Sugar
Average Import Expenditure*	383.35	88.04	72.18	503.77	101.65
Import Expenditure Share (%)	33.36	7.66	6.28	43.84	8.85
Weight of Welfare Effect (%)	36.81	3.89	4.60	44.86	9.85
Welfare Loss*	141.09	3.42	3.32	225.98	10.01
Share of Lost Welfare (%)	36.76	0.89	0.86	58.88	2.61

Note: * Figure is in Millions of US$.

3.2.3. Price Shock Scenario C: 2020-2021

The third price shock scenario assessed was for the period 2020-2021 which was used to assess the welfare impact of the Covid-19 pandemic in Haiti. The Covid-19 pandemic caused rapid and intense disruption to the global trade system due to a generalized decrease in global demand, increased cross-border restrictions, port closures, and logistical disruptions (Vidya and Prabheesh 2020, Mouloudj *et al.* 2020, Vo and Tran 2021, Erokhin and Gao 2020, Chakraborty 2023). Furthermore, the pandemic has led to major increases in prices of major import food commodities (Agyei *et al.* 2021, Clapp and Moseley 2020, Ben Hassen *et al.* 2020). In addition, during the first few months of the covid-19 pandemic, Haiti has seen around a 16.5% increase in local food prices (Clapp and Moseley 2020). Hence, it is paramount that the welfare impact of rising food prices be assessed in Haiti during the pandemic period.

It was observed that between 2020-2021 the global price of imported cereals, meat, dairy, vegetable oil, and sugar increased by around 16.9%, 4.1%, 8.0%, 42.7%, and 19.3%. Imported vegetable oil saw the highest increase in price Table 7 presents the results of the welfare impact of rising food prices during the covid-19 pandemic period 2020-2021. The results of CV reveal that welfare losses from global food price increases during the covid-19 pandemic period was around US$458.50 million. To clarify, Haitians require compensation of around 28.2% of their 2021 total food import expenditure in order to accommodate the adverse impacts resulting from price increases between 2020-2021. The highest amount of CV was from imported cereals (US$149.18 million), vegetable oil (US$136.18 million), and meat (US$115.16 million). These three imported food categories accounted for more than 85% of welfare loss between 2020-2021 (Table 7). In contrast, imported dairy accounted for the least welfare loss which was only around US$20.68 million. Given that current data suggest that food imports for Haiti is on an upward trajectory, there is a need for major policy action as Haitians are vulnerable to outside shocks that negatively impact the global food system to which they depend heavily upon. Haiti is also regarded as food insecure (Richardson *et al.* 2022, Kianersi *et al.* 2021), hence, there is need policy action is need to improve food security.

Table 7: The welfare impacts of price changes between 2020-2021.

Commodity	Average Imports (Millions US$)	Price Change (%)	Quantity Change (%)	CV (Millions US$)	CV (%)
Cereal	574.13	16.99	7.69	149.18	32.54
Meat	155.23	4.14	67.26	115.16	25.12
Dairy	73.70	8.01	18.56	20.68	4.51
Vegetable Oil	703.90	42.68	-16.35	136.18	29.70
Sugar	121.83	19.31	9.49	37.32	8.14
Total	1,628.79	-	-	458.50	100

Source: Obtained from the World Food Price Index (FAO 2022a).

Table 8 presents the results of the welfare effects of the global increase in food prices in Haiti. It was discovered that the greatest amount of welfare loss was from imported vegetable oil which was around US$209.06 million followed by imported cereals which was estimated at US$186.80 million. This means that according to import expenditure share of imported vegetable oil (43.2%) and imported cereals (35.3%), after rising global prices of food, welfare is expected to decrease, and the import expenditure of these commodities compared to the previous period would increase (Table 8). Therefore, in order to compensate Haitian consumers for the welfare lost as a result of increasing prices and to ensure that their initial level of welfare is maintained after the increase in prices, around US$448.08 million must be added to total expenditure of the five imported food categories.

Table 8: The welfare effects of rising global food prices for consumers in Haiti (2020-2021).

	Cereal	**Meat**	**Dairy**	**Vegetable Oil**	**Sugar**
Average Import Expenditure*	574.13	155.23	73.70	703.90	121.83
Import Expenditure Share (%)	35.25	9.53	4.52	43.22	7.48
Weight of Welfare Effect (%)	32.54	25.12	4.51	29.70	8.14
Welfare Loss*	186.80	38.99	3.32	209.06	9.92
Share of Lost Welfare (%)	41.69	8.70	0.74	46.66	2.21

Note: * Figure is in Millions of US$.

4. Policy Implications

The results of the study highlight the significant negative welfare impact and effect of global food price increases on Haitian consumers, especially for the periods of 2006-2008, 2010-2013, and 2020-2021. To address these challenges, policymakers in Haiti could consider implementing a range of policy recommendations that are aimed at reducing the impact of global food price volatility on the country's populace. One potential policy recommendation is to strengthen domestic agricultural production and food security in Haiti. At present, Haiti is regarded as a highly underdeveloped (Yu *et al.* 2019, Dupuy 2019, Hashimoto *et al.* 2020) and food insecure (Richardson *et al.* 2022, Kianersi *et al.* 2021, Rasul *et al.* 2022) nation within the Caribbean region. Agriculture is the primary economic sector in Haiti, employing about two-thirds of the population. However, the agricultural sector in Haiti faces several challenges, such as poor soil quality, limited irrigation, and deforestation, which have contributed to a decline in agricultural productivity. These challenges have made it difficult for Haiti to produce enough food to feed its population, leading to a heavy reliance on food imports (Wisner 2021, Jenkins 2022, Quellhorst *et al.* 2020).

Domestic food production could be increased by improving agricultural productivity, improving agricultural infrastructure, and diversifying the crops grown in the country. This could be achieved through investment in agricultural research and development, provision of credit facilities, and support for small-scale farmers via education and extension services. A robust agricultural sector could not only reduce the country's dependence on food imports but also contribute to reducing domestic food prices and ensuring stable supplies of essential food items. This can help to alleviate the looming food insecurity problem faced by Haitians.

Secondly, global food price volatility has been a major concern for many developing countries, including Haiti as seen by the negative impacts on welfare. The country's heavy reliance on food imports leaves it vulnerable to fluctuations in global food prices. Therefore, it is important for the Haitian government to implement measures to mitigate the impact of global food price volatility on Haitian consumers. Another recommendation is to implement measures to mitigate the impact of global food price volatility on Haitian consumers. These measures could include targeted subsidies or cash transfers to vulnerable households. This would help to ensure that these households can access essential food items even during times of high food prices. For example, subsidies or cash transfers could be targeted to households that are living below the poverty line, those with children or elderly dependents, and those who are experiencing temporary shocks such as unemployment or illness. This would ensure that the most vulnerable households have access to the food they need, regardless of the prevailing market conditions.

Furthermore, price stabilization mechanisms, and strengthening social safety nets can be another approach used to help shield Haitian consumers from volatile global food prices. This could include the use of strategic food reserves, which would allow the government to release food stocks onto the market during times of high food prices. Additionally, the government could implement price ceilings or floors for essential food items to prevent prices from rising too high or falling too low. These measures would help to promote stability in the food market and ensure that prices remain affordable for Haitian consumers. However, such policy requires much financial resources from the Haitian government which might not necessary be available given the underdeveloped status of the nation currently.

Regional trade agreements can also help to reduce Haiti's dependence on global food markets and promote regional food security by facilitating greater trade in food commodities among neighboring countries. Haiti's location in the Caribbean region presents an opportunity for the country to explore potential partnerships with other countries in the region to increase food production and trade. The Caribbean Community (CARICOM) is a regional organization that Haiti is a member of, which seeks to promote economic integration and cooperation among its member states. The Haitian government could explore the potential for regional trade agreements with neighboring countries to promote greater trade in food commodities. For example, Haiti could consider entering into bilateral or multilateral trade agreements with countries such as the Dominican Republic, Jamaica, or Trinidad and Tobago. These agreements could include provisions to reduce trade barriers and promote greater cooperation in the areas of food production and trade. In addition, regional food security can also be facilitated by the establishment of a regional food security reserve. This would involve countries in the region contributing to a shared reserve of essential food items that could be distributed in times of crisis. Such a reserve could help to stabilize food prices and ensure access to essential food items in the event of natural disasters, conflict, or other disruptions to the food supply chain. The reserve could be managed by a regional organization such as CARICOM, which could also facilitate regional trade in food commodities and provide technical assistance to member states to improve agricultural productivity.

Overall, the policy recommendations outlined could help to mitigate the negative welfare impact of global food price volatility on Haitian consumers. While these recommendations may require significant investments, planning, and management, the long-term benefits of reducing the country's dependence on food imports and promoting greater food security are likely to outweigh the costs. By implementing a range of policies aimed at reducing the impact of global food price volatility, Haiti could achieve greater food security, improve the welfare of its population, and become more resilient.

5. Conclusion

The primary purpose of this study was to investigate the welfare impacts of increasing global prices of imported food on Haitian consumers. The study utilized annual data for the period 1980-2021. The LA-AIDS model was used to obtain price and income elasticities for the five major imported food categories and compensating variation was used to assess the welfare impacts and effects of rising global prices of imported food on Haitian consumers. Hicksian own-price elasticities were negative and significant for all imported food categories. All imported food categories were found to be import price inelastic except for imported meat which was price elastic. Cross-price elasticities highlighted that substitution and complementary relationships existed between various pairs of imported food categories. Income elasticities indicate that demand for imported meat, vegetable oil and sugar is income inelastic and can be regarded as luxuries, while demand for cereals and dairy is found to be income inelastic. The results of the welfare exercise reveal that price increases between 2006-2008, 2010-2013, and 2020-2021, results in CV of around US$223.91 million, US$89.33 million, and US$458.50 million, respectively. It was found that imported cereals and vegetable oil accounted for the most loss in welfare in all three price shock scenarios. These results have important implications for governments and international organizations seeking to address food insecurity and promote food access in developing countries, emphasizing the importance of implementing policies that can help reduce the negative welfare effects of rising global food prices on low-income consumers in Haiti.

Ethical Statement

The authors would like to inform you that no humans or animals were involved in this paper.

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Declaration of Competing Interest
The authors declare that they have no known competing financial interest or personal relationships that could have appeared to influence the results of the work reported in the paper.

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Appendix A

Table A1: Estimated Parameters of the LA-AIDS Model for Imported Food

Parameter	Import Share Equations				
	Cereals	Meat	Dairy	Vegetable Oil	Sugar
α	1.326	-0.151	0.373	-0.165	-0.383
	(0.345)	(0.156)	(0.140)	(0.276)	(0.170)
γ_1	0.146	-0.009	-0.037	-0.045	-0.053
	(0.054)	(0.021)	(0.021)	(0.042)	(0.021)
γ_2	-0.009	-0.045	-0.019	0.054	0.019
	(0.021)	(0.014)	(0.011)	(0.016)	(0.012)
γ_3	-0.037	-0.019	0.027	-0.005	0.034
	(0.021)	(0.011)	(0.018)	(0.018)	(0.013)
γ_4	-0.045	0.054	-0.005	0.015	-0.019
	(0.042)	(0.016)	(0.018)	(0.048)	(0.022)
γ_5	-0.053	0.019	0.034	-0.019	0.019
	(0.021)	(0.012)	(0.013)	(0.022)	(0.022)
β	-0.064	0.017	-0.023	0.039	0.031
	(0.010)	(0.010)	(0.009)	(0.018)	(0.011)

Note: Standard errors in parentheses.

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Fragmented Institutions in Promoting Investment in Indonesia: Does Interactive Governance Make a Difference?

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Abstract
In many countries, investment promotion is fragmented across multiple government agencies. This can lead to duplication or overlapping, ineffective efforts, a lack of coordination, and confusing guidance for potential investors who are interested in foreign direct investment in the host country. Interactive governance is a process that brings together different stakeholders to address complex problems. It can be used to overcome the challenges posed by fragmented institutions in investment promotion. This paper examines the use of interactive governance in promoting Foreign Direct Investment in Indonesia. Looking at multiple institutions actively taking part in promoting investment abroad, this paper has identified some fragmented institutions that have similar responsibilities for investment promotion shared between the Ministry of Investment and several other government agencies. This study lists various governmental and private organizations that have actively played their role in promoting investment abroad. The primary hypothesis of this study is that interactive governance can improve coordination and reduce duplication in multiple public and private institutions in investment promotion. The secondary hypothesis is that interactive governance can create more favorable investment promotion tasks shared within public government institutions that have more resources to do it. The study is linked to theory by drawing on the literature on interactive governance and investment promotion. The paper concludes that interactive governance could be used as an effective way to overcome the challenges posed by fragmented institutions in promoting investment. It can help to improve coordination, reduce ineffective efforts, and create a more favorable investment climate for potential investors.

Keywords: Fragmented Institutions, Foreign Direct Investment, Interactive Governance, Investment Promotion

1. Introduction

Investment promotion is a key policy tool for economic development. By attracting foreign direct investment (FDI), governments can stimulate economic growth, create jobs, and promote innovation. However, investment promotion can be challenging, particularly in countries with fragmented institutions. Fragmented institutions occur when responsibility for investment promotion is shared between multiple government agencies. This can lead to ineffective or duplication of effort, a lack of coordination, and a confusing regulatory environment for investors. To overcome these challenges, governments need to find ways to improve coordination and reduce duplication or ineffective efforts.

Foreign direct investment (FDI) has a significant impact on the Indonesian economy. The government of Indonesia is one of many countries that believe FDI can help the country's development and welfare. The Indonesian government has prioritized taking strategic actions to improve the investment climate to attract FDI, especially during President Joko Widodo's administration. It is evidence-based that investment is one of the solutions for Indonesia's economic recovery in 2021. In the last five years, investment has contributed an average of 31.65% to GDP (Consolidated Government Work Plan p. II-60, Bappenas, 2023). Indonesia strives to boost its investment climate to become one of the best in Asia and the world. The FDI Inflows ratio to GDP is targeted to rise to 4.5 percent by 2045. The average investment growth is targeted at 6.4 percent per year and the role of investment in GDP increases to 38.1 percent by 2045.

FDI inflows can positively impact the host country by increasing productivity, creating jobs, promoting human resource development, and using more environmentally friendly technologies (UNCTAD, 2008). Most countries in the world have established Investment Promotion Agencies (IPAs) devoted to promoting and facilitating investment, often with a special role in attracting multinational enterprises (MNEs) and maximizing the advantages of FDI (OECD, 2020). This is because they recognize the significance of private investment for economic and social development.

The establishment or strengthening of Investment Promotion Agencies (IPAs) with a mandate to promote and facilitate FDI is part of the effort of many investment target countries to win their competition in attracting FDI. Since 1990, the number of IPAs has significantly expanded globally. According to the 2018 WAIPA survey, 84% of the IPA was established in the last 27 years (Figure 1.1). The IPA's rise after 1990 was mostly influenced by FDI regime liberalization and the global economy (UNCTAD, 2002).

The results of the WAIPA survey in 2018 revealed that there were over 10,000 IPAs in operation worldwide because most countries particularly emerging countries tended to compete for FDI by establishing IPAs (Dressler, 2018b).

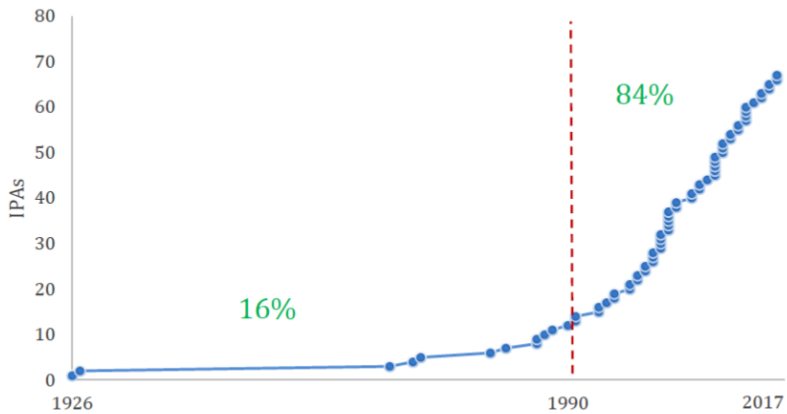

Figure 1.1: Increased Numbers of IPAs worldwide

Source: Survey Report, WAIPA, 2018

The Indonesian Ministry of Investment, formerly known as the Indonesian Investment Coordinating Board (BKPM), is the government agency responsible for promoting, facilitating, and regulating investment in Indonesia. As a focal point for Indonesia's investment promotion, BKPM benchmarks against other Investment Promotion agencies (IPA) in the world. BKPM is a large organization with a wide range of responsibilities, making it one of the most comprehensive investment promotion agencies in the world (OECD, 2020). Over the past few decades, BKPM has played a key role in improving Indonesia's business environment and attracting foreign direct investment. BKPM has been transformed into the Ministry of Investment in 2022, This change reflects the priority of the Indonesian government to promote and facilitate investment for its targeted FDI.

BKPM aspires to serve a coordinating function within a diverse if not fragmented, institutional structure in which multiple public and private institutions play similar roles in investment promotion, policy formulation, and implementation. These many duties and tasks across government actors or private institutions can be complementary at times, but they can also overlap or be inconsistent with one another.

Empirical evidence generally suggests that IPA can play an important role in attracting and growing FDI in developing countries. (Charlton dan Davis 2007; Cho 2003; Crescenzi, Di Cataldo, dan Giua 2019; Morisset dan Andrews-Johnson 2004; Bezuidenhout & Pietersen 2015). Harding and Javorcik (2012) found that sectors promoted by Investment Promotion Agency experienced higher FDI even up to 155 percent compared to non-targeted sectors. Investment Promotion Agency can also improve the quality of FDI by supporting technology and knowledge transferred, and export growth. (Freund dan Moran 2017; Moran, Gorg, dan Krieger-Boden 2018).

IPA often serves as the face of the government and the first institution contacted by potential investors to become the main partner during the process of foreign investment flow to the country. According to Harding and Javorcik (2012), the absence of such an IPA agency would potentially reduce the possibility of the inflow of FDI into the country.

It is also further reinforced by Saurav & Kuokami (2020) in a newly published survey by the World Bank in October 2020 that the Investment Promotion Agency plays an important role in attracting and maintaining FDI. The survey was conducted on more than 2,400 foreign investors operating in 10 middle-income countries: Brazil, China, India, Malaysia, Mexico, Nigeria, Thailand, Turkey, Vietnam, and including Indonesia. At least two-thirds of multinational corporations in the emerging markets studied rate the variety of services provided by the Investment Promotion Agency as extremely significant. Approximately seven out of ten investors consider the Investment Promotion Agency's services and provision of pre-investment information, such as location guidelines, sector and project profiles, procedures and regulations, operational preparation of the project, information on registration requirements, and the process of obtaining admission, are considered critical and influential for their investment decisions in the country. These findings are also consistent with Kusek and Silva’s findings (2018) that a better business environment and business settlement assistance covered by the Investment Promotion Agency services are stated as one of the determining factors for FDI decisions.

This study lists various governmental and private organizations that have actively played their role in promoting investment abroad. The primary hypothesis of this study is that interactive governance can improve coordination and reduce duplication in multiple public and private institutions in investment promotion. The secondary hypothesis is that interactive governance can create more favorable investment promotion tasks shared within public government institutions that have more resources to do it. The study is linked to theory by drawing on the literature on interactive governance and investment promotion.

The hypotheses are related to the research design in that they are tested using the data collected from the in-depth interview and Focus Group Discussion. The research design is a case study of the use of interactive governance in promoting investment in Indonesia by identifying more than 12 institutions both public and private that are actively involved in promoting investment abroad.

The theoretical implications of the study are that interactive governance can be an effective way to overcome the challenges posed by fragmented institutions in investment promotion. The practical implications of the study are that governments can use interactive governance to improve coordination, reduce duplication, and create more favorable investment promotion tasks among public and private institutions.

The importance of this problem is twofold. First, governments need to be able to attract FDI to promote economic development. Second, it is important to understand how interactive governance can overcome the challenges of fragmented institutions. By conducting new research on this topic, we can help governments to attract more FDI and create a more favorable investment climate for businesses.

In terms of global IPA experience, reaching and interacting with foreign investors involves at least three geographically distinct operational levels: international, national, and sub-national. On international networks, IPA can rely on a network of foreign institutions responsible as government representatives abroad, such as embassies and investment promotion offices represented by the Ministry of Investment/BKPM abroad.

Investment promotion requires consistency in the message's substance and the speaker who interacts with foreign investors at the international, national, and sub-national levels. Facilitating and promoting investment requires close collaboration with administrative agencies to ensure that investment processes run smoothly in the host country. All of these interactions require suitable and effective coordination and collaboration procedures, which should be formalized as needed.

According to an informant from the Ministry of Foreign Affairs who frequently carry out various activities of investment promotion abroad, cooperation between government agencies, associations of entrepreneurs, and businessmen-related sectors, both from Indonesia and the FDI target country has been done well in terms of conducting a national branding event. However, if the success measurement is investment realization, there are still numerous challenges for investors who are already interested in Indonesia. They have to take a long process including the bidding process to win the project. More often the process is opaque, this was disclosed during an interview with an informant from the Ministry of Foreign Affairs (interview on January 16, 2023).

Referring to the Investment Policy Review of Indonesia (OECD, 2020), in addition to the Ministry of Investment/BKPM there are several public institutions and non-public institutions that play a central role in promoting investments, among them: (1) Coordinating Ministry of Economic Affairs; (2) Coordinating Ministry of Maritime Affairs and Investment; (3) The Ministry of Foreign Affairs; (4) The Presidential Staff Office (5) The Ministry of Finance; (6) The Ministry of Industry; (7) Bank Indonesia; (8) The Ministry of National Development Planning (Bappenas); (9) The Ministry of Tourism and Creative Economy; (10) Indonesia Trust Fund; (11) Local governments both at the provincial and district/city level; (12) Indonesia Chamber of Commerce and Industry (KADIN); and banking network.

2. Literature Review

Interactive governance is crucial in promoting investment for several reasons. *First,* IG encourages stakeholder involvement and ensures that the interests of all stakeholders are taken into account. The involvement of many stakeholders in the decision-making process increases the likelihood that investment decisions will be made in a way that benefits all involved. This is especially important in investment decisions that have significant social and environmental impacts.

Second, interactive governance promotes transparency and accountability. By involving multi-stakeholders in the decision-making process, decision-makers are held accountable for their decisions. This helps ensure that investment decisions are made transparently and that all stakeholders understand the reasons behind those decisions.

Third, interactive governance promotes effective governance. By involving many stakeholders in the decision-making process, decision-makers can leverage the expertise and knowledge of a wide range of stakeholder groups. This helps ensure that investment decisions are made in a way that reflects best practices and takes into account the unique circumstances of the investment.

The relationship between institutions meant by the researcher in this paper is the relationship between the Ministry of Investment/BKPM in coordinating and cooperating with multiple institutions, both public and non-public in carrying out its functions as an investment promotion agency. The Ministry of Investment/BKPM has to compete with many other Investment Promotion Agencies (IPAs) to attract FDI to Indonesia. The relationship between these institutions needs to be strengthened when the relationship has already been formed. However, if the relationship with some institutions is not yet formed, then this research will produce recommendations for the formation of an interinstitutional relationship.

This research is significantly carried out because it has benefits for the development of academic concepts and pragmatic interest. For the development of academic concepts, this research is expected to develop the theory of Interactive Governance on interinstitutional relations in promoting investment. In the context of interinstitutional governance will involve the interaction of multiple institutions, as well as the involvement of private parties in the form of institutional entities and individual actors. The development and application of the theory of Interactive Governance in inter-institutional interaction in the promotion of investment in Indonesia are expected to be a new theory that will be the novelty of this dissertation for the theoretical development of academic interest.

This research is also significant for the pragmatic interest of the Indonesian government to strengthen the relationship between multiple institutions to support the implementation of targeted FDI. It is one of the prioritized agenda to achieve Indonesia's 2045 vision of becoming a high income country. The recommendation of the results is expected to become a considered model of the Interactive Governance in promoting investment for Indonesia. Hopefully, it will become researchers' contribution to support the Indonesian government in achieving Indonesia's vision in 2045.

The concept of interactive governance has begun to emerge and develop with the development of the modern state where there is an expansion of participation of multiple parties. In the development of governance theory, several researchers have focused on the interactions and initiatives of public, social, and private actors in dealing with complex social problems by developing the concept of Interactive Governance (IG). (Kooiman, 2003; Edelenbos, 2005; Torfing et al., 2012). The concept of IG does not only provide guidance or dimension to facilitate the involvement of multi-stakeholders for good public policy governance (Ingram, 2011; Schulz, Martin-Ortega, Glenk, & Ioris, 2017), but it is also beneficial to avoid interinstitutional fragmentation towards the implementation of policies or programs. (Edelenbos & Klijn, 2006; Irvin & Stansbury, 2004; Kooiman, 1993).

The perspective of interactive governance in investment institutions is very important because investment institutions operate in a complex network with a wide range of stakeholders, both public and private. They operate between public policy and business. Their agendas are driven by the public sector to produce economic and social benefits but require a good understanding of the business models of various companies. Their main role is to serve private companies whose activities are also heavily dependent on the investment policy framework arranged by the government thoroughly.

This complex networking with stakeholders requires skills and collaborative processes as well as strong coordination. In some cases, cooperation relationships with multiple parties are formalized, either through organizational relationships or through some form of agreement such as a Memorandum of Understanding. Investment institutions need to coordinate and interact with each other between institutions in the public sector as well as with multiple institutions and representatives of the private sector, civil society, bankers, academics, and international organizations.

The Ministry of Investment/BKPM can rely on a network of government's entities that are responsible to reach out and interact with foreign investors. At the national level, they must coordinate or collaborative with other government or private organization in promoting investment to align with the investment policy agenda. At the sub-national level, the Ministry of Investment/BKPM supports sub-national development bodies, and they sometimes have to work with local governments in particular to facilitate the implementation of investment in the province or regency.

The Interactive Governance perspective according to Kooiman et al. (2008) covers the activities of the governing system, the system to be governed, and governance interaction. The concept considers the presence of actors involved, structures, processes, relationships, and interactions within complex and diverse systems. Interactive Governance involves multi parties that have different interests but interact and participate in formulating and promoting investment through the mobilization, exchange, and dissemination of various ideas, rules, and resources. (Torfing et al., 2012).

The interactive governance conceptual framework emphasizes the importance of ongoing dialogue and collaboration among multiple actors, including government agencies, civil society groups, and private sector organizations. This framework assumes that complex public issues cannot be effectively addressed through traditional hierarchical approaches to governance, but rather requires ongoing interaction and partnership among stakeholders.

Key elements of the interactive management framework include:

1. Multiple actors: Interactive governance involves multiple actors, including government agencies, civil society groups, private sector organizations, and other stakeholders. These actors bring different perspectives, resources, and expertise into the governance process.
2. Sustainable dialogue: Interactive governance emphasizes the importance of continuous dialogue and communication among stakeholders. This includes open and transparent communication, active listening, and exchange of ideas and information.
3. Collaborative Problem Solving: Interactive governance seeks to promote collaborative problem-solving among key stakeholders
4. Flexible management structures: Interactive governance structures require flexible governance structures that can adapt to changing circumstances and accommodate the needs and perspectives of various stakeholders.
5. Building trust: Interactive governance seeks to build trust among stakeholders through open and transparent communication, shared decision-making, and shared accountability. Trust is seen as important for the success of collaborative governance efforts.
6. Learning and Evaluation: Interactive governance emphasizes the importance of learning and evaluation to improve the effectiveness of governance processes. This includes monitoring and evaluating results, identifying best practices, and using feedback to inform future decision-making.

Overall, the interactive governance conceptual framework emphasizes the importance of sustained dialogue, collaboration, and joint creation among multi-stakeholders to address complex public issues. This IG concept offers a flexible and adaptive governance approach that is perfectly suited to the world’s challenges of today’s complex and rapidly changing IPA role.

3. Research Design

The research design will use a postpositivist paradigm with a qualitative approach method to examine the use of interactive governance in Indonesia. The qualitative approach will allow for a deeper understanding of the challenges and opportunities of using interactive governance to promote investment. It is used by the authors because an aspect of the postpositive paradigm is to use theory to construct benchmarks so that it is empirically connected by making operational definitions.

The researchers will use qualitative research methods by referring to the 4 orientations in the quantitative research already identified by W. Lawrence Neuman. The first orientation relates to the approach used for empirical data consisting of recordings of words and gestures from the sources interviewed, written documents, and various existing visual documents. (Neuman, 1997: 328).

The second orientation in qualitative research broadly uses interpretative and critical approaches to social problems. Qualitative researchers focus on subjective meanings, definitions, metaphors, and descriptions in specific cases. (Neuman, 1997: 329). Qualitative research seeks to treat the object of study not as an object, but rather as a creative process and translates social life as something full of dynamics.

The third orientation is the use of logical research logic in practice where research is conducted irregularly, more ambiguous, and bound to specific cases. This, of course, reduces the device of the rules and relies on informal procedures built by the field experiences found by the researchers. (Neuman, 1997: 330).

The data has been collected through a semi-structured interview guide and a focus group discussion guide. The in-depth interviews were conducted with a purposive sample of key informants, such as government officials, business leaders, and academics. Focus Group Discussion was conducted at the end of the data validation. The interview guide was prepared using the concept of Interactive Governance perspective to examine informants' views and experiences on the effectiveness of interactive governance in promoting investment. At the end of the research, the focus group discussion guide was also prepared to examine the challenges, opportunities, and recommendations for the use of interactive governance in promoting investment. The in-depth interviews and focus group discussion have been conducted in Jakarta, Indonesia from January until May 2023.

The data will be analyzed using thematic analysis. Thematic analysis is a qualitative data analysis method that allows for the identification of patterns and themes in the data. The data will be coded and analyzed using the following themes:

- The challenges of using interactive governance to promote investment in Indonesia
- The opportunities of using interactive governance to promote investment in Indonesia
- The recommendations for the use of interactive governance in Indonesia

The study is limited by the following factors:

- The study is a single-case study, which limits the generalizability of the findings.
- The study is based on a purposive sample, which may bias the findings.
- The study is based on self-reported data, which may be inaccurate.

4. Result and Discussion

4.1 Collaboration between the Ministry of Investment and other institutions

The author conducted in-depth interviews with 12 informants representing multiple institutions. The results of the study revealed that interactive governance is positively associated with investment in countries with fragmented institutions. The authors also found that interactive governance is more effective in mitigating the negative effects of fragmented institutions in countries with high levels of trust and cooperation.

According to the Informant of the Ministry of Investment/BKPM during an interview on January 12, 2023, investment promotion is part of the governance ecosystem within the Ministry of Investment.
It was revealed during an interview:

> "*From my point of view, this is a Pentahelix collaboration where the government has initiated a collaboration with investors as their direct partners and collaboration with society, NGOs, and media for the same purpose. Those five stakeholders have to build interaction within the framework of investment promotion activities. If it is successful, it will attract inclusive foreign direct investment. Inclusive means that investment promotion must be able to attract not only bring capital investments but also technology that is transferable to local communities" (interviewed on Jan 12, 2023*)

In terms of collaboration with academicians, the Ministry of Investment / BKPM also wants to involve more academicians and also independent researchers or research institutions by leveraging more high technology for being used by investment promotion efforts. The technology can be used to support government efforts to divert investment so that foreign direct investment will generate added value that contributes to economic growth and the well-being of society.

In terms of collaboration with other ministries/public institutions, the Ministry of Investment/BKPM does not need to use legally binding agreements such as cooperation agreements, considering they are all representing the

Indonesian government as a collective institution. The collaboration between the Ministry of Investment/BKPM and other public stakeholders representing the government abroad is very essential. The representative office of the Ministry of Investment/BKPM abroad known as the Indonesia Investment Promotion Center (IIPC) located in 9 countries (at the time this research was carried out in 2023) should have a good collaboration with other representatives of the Indonesian government in the same country. The Ministry of Investment/BKPM realized that the more support from the parties representing Indonesian stakeholders, the image of Indonesia incorporated became stronger. IIPC also seeks to optimize cooperation with representatives of Bank Indonesia, representatives from State Owned Banks, representatives of the Ministry of Trade known as the Indonesian Trade Promotion Center (ITPC), other ministerial representatives who have offices in the same countries, even with economic functions at the Indonesian Embassy (KBRI) and also the Economic Consul at the Consulate General of the Indonesian Consulate General (KJRI). According to the Ministry of Investment/BKPM, since the Government of Indonesia has the same investment targets, the government of Indonesia should be trying to protect their investment activities under comprehensive guidelines.

In terms of collaboration with private stakeholders, the Ministry of Investment/BKPM has some collaborations with private institutions, particularly with certain banking networks that also have targeted investment disbursement directed to the financing credit for corporate clients. while the Investment Ministry / BKPM is interested that such banking clients potentially making investments in Indonesia. In the context of such interests, the Ministry of Investment/BKPM has a Memorandum of Understanding (MoU) with the banking authorities to facilitate various investment missions on the ground.

4.2. Opportunity for improvement the future interactive governance

The Ministry of Investment/BKPM has two programs to improve communication and common understanding with other Ministries/public agencies at the national level, sub-national level, and also with stakeholders abroad. The Ministry of Investment/BKPM has a national investment coordination meeting program held once a year. Meanwhile, this annual investment coordination meeting is not dedicated to investment promotion specifically because it is managed by other units within the Ministry of Investment. This program involves the local government in particular the Regional Investment Board One-Stop Services to understand national strategies on how to attract foreign direct investment. The investment promotion unit plans to design a separate meeting for the coordination of investment promotion.

In the context of collaboration with other Ministries at the national level, the Ministry of Investment/BKPM also plays a role in preparing and delivering substance materials on investment objectives and promotion strategies for other ministries' officials who will be assigned in other countries. The Ministry of Investment has been collaborating with the Ministry of Industry, the Ministry of Trade, and also the Ministry of Foreign Affairs in terms of providing substantial training on investment promotion strategies.

According to the informant of the Ministry of Investment/BKPM, economic diplomacy is closely related to investment promotion strategy. From his point of view, the Ministry of Foreign Affairs represented by the Ambassador and economic attaché of the Indonesian Embassy should play a key role in investment promotion abroad. The Ministry of Foreign Affairs currently has as many as 132 representatives consisting of 95 Embassies, 3 Permanent Mission for the United Nations in New York and Geneva, and Permanent Mission for ASEAN in Jakarta 30 Consulates General, and 4 Consulates of the Republic of Indonesia. In addition, Indonesia has also appointed 64 Honorary Consuls. They should play their key roles in promoting investment in their located mission to support the Ministry of Investment/BKPM. As we understand, the Ministry of Investment only has 9 representative offices through the IIPC office.

The Ministry of Investment/BKPM proposes that the economic functions of the Indonesian Embassy, Ministry of Trade representatives, banking representatives, and Bank Indonesia representatives assigned abroad commit to supporting the investment promotion strategy prepared by the Ministry of Investment. Given that the Ministry of Investment/BKPM has given limited staff resources to the IIPC representative office. Whether there is a significant partnership with the Ministry of Investment or not, the Ministry of Foreign Affairs has actively pushed investment through its ambassadors and economic attachés in numerous nations.

4.3. Challenges of interactive governance in promoting investment

The difficulties encountered in promoting investment can also be seen in interactions with many local governments. They have objectives that differ from those of the Ministry of Investment/BKPM. Frequently, certain local governments are interested in forming business partnerships in the interests of their local government, even though their investment potential does not match the needs of the country based on market intelligence data already compiled by the Ministry of Investment/BKPM. Service visits carried out by the local government to encourage potential investments in their area are worthless, as frequently complained by Indonesian Ambassadors who have already been occupied with numerous visits to promote the regional government's investment. Even established business associations grumble about it. They suggest that investment promotion activities should be carried out only once or twice a year, organized comprehensively, and integrated to accommodate the interests of larger stakeholders.

The Ministry of Investment/BKPM is preparing a national investment promotion calendar for promotion abroad. They will expand their collaboration and interactive governance with the Ministry of Home Affairs which has the authority to control local governments.

In the context of ties with private players such as the Indonesian Chambers of Commerce (KADIN), the Ministry of Investment/BKPM has partnered to include KADIN as a co-host of investment promotion events such Davos event in 2023. KADIN has recently become more proactive, including involving art perpetrators for the Indonesian Night at the investment promotion event in Davos on January 18, 2023.

The Ministry of Investment/BKPM also collaborates with several universities in the Business Development program, though Business Development in the promotion context does not reach the preparation of feasibilities or pre-feasibility because it is part of planning. According to the Ministry of Investment, the academic world is playing a larger role in developing technologies to attract green investment. The Ministry of Investment/BKPM has developed some collaborations with some universities for that purpose.

More on the roles of the Ministry of Investment and the Coordinating Ministry of Maritime and Investment, which are sometimes questioned as to whether they have competing functions and interests. It was revealed from an interview with the informant that:

> *"...from the course of his journey, no one was clashing interests because I saw a very remarkable dialogue built between Minister of Investment and Coordinating Minister." And we have no reason to discover conflicts there because things have gone better in the past with the Coordinating Ministry of Economic Affairs. We are not attempting to figure out how the interaction between the Coordinating Ministry of Maritime Affairs and Investment with the Coordinating Ministry of Economic Affairs works. And, of course, we always report on the progress of actions at this strategic level".*

In terms of collaboration with Bappenas, the Ministry of Investment/BKPM has designed a program of cooperation with Bappenas to help promote Indonesian image on various events such as Economic Reviews Forum and other international events. According to the informant of the Ministry of Investment that the Ministry consults with knowledgeable institutions on Indonesia's macroeconomic condition and also medium-term of economic growth with Bappenas and also Central Bank of Indonesia. Central Bank of Indonesia also plays its role in supporting the ministry in promoting investment using its Global Investment Relations Unit (GIRU) abroad and sub-national Investment Relations Unit (IRU). Meanwhile, Central Bank of Indonesia has 5 GIRU abroad and more than 20 IRU in their provincial offices. The main objective of IRU is to actively communicate Indonesian economic policy and address concerns of investors, especially financial market investors. The IRU is expected to serve as a single point of contact for the financial market participants.

4.4. The implications of the findings

The findings of this study have important implications for policymakers and businesses in countries with fragmented institutions. By promoting interactive governance, policymakers can help to create a more favorable environment for investment. Businesses can also benefit from interactive governance by building relationships with government officials and other stakeholders.
Limitations and Future Research

The study has some limitations. The sample size is relatively small, and the study was conducted in a single year. The authors also did not control for other factors that could affect investment, such as the level of economic development or the quality of the legal system.
Despite these limitations, the study provides valuable insights into the relationship between fragmented institutions and investment. The findings of the study suggest that interactive governance can be an effective way to promote investment in countries with fragmented institutions.

Future research could address these limitations by conducting a longitudinal study in multiple countries that controls for other factors that could affect investment. This would provide stronger evidence for the causal relationship between interactive governance and investment. Future research could also focus on understanding the mechanisms by which interactive governance promotes investment. For example, does interactive governance reduce uncertainty and transaction costs, build trust and cooperation, or improve the quality of governance? Understanding these mechanisms could help policymakers and businesses design and implement more effective policies and strategies for promoting investment.

4.5. Theoretical, clinical, or practical significance of the outcomes

The findings of this study have theoretical, clinical, and practical significance.

- Theoretical significance: The findings of this study contribute to the theoretical understanding of the relationship between fragmented institutions and investment. The study suggests that interactive governance can help to mitigate the negative effects of fragmented institutions on investment. This finding is consistent with the theory of interactive governance, which argues that dialogue and collaboration between government, businesses, and other stakeholders can help to reduce uncertainty and transaction costs, build trust and cooperation, and improve the quality of governance.
- Clinical significance: The findings of this study may have implications for clinical practice. For example, policymakers and businesses may be able to use the findings of this study to design and implement more effective policies and strategies for promoting investment in regions with fragmented institutions.
- Practical significance: The findings of this study may also be of interest to businesses and investors. The study suggests that businesses may be able to benefit from interactive governance by building relationships with government officials and other stakeholders at the national level, sub-national level, and international levels with fragmented institutions.

4.6. Applications warranted based on this research

The findings of this study suggest that interactive governance can be an effective way to promote investment in regions with fragmented institutions. Policymakers and businesses in these regions may want to consider promoting interactive governance by creating forums for dialogue and collaboration between government, businesses, and other stakeholders.

4.7. Problems remaining unresolved or arising anew because of these findings

The findings of this study raise several questions that need to be addressed in future research. Future research could examine the following questions:

- What are the mechanisms by which interactive governance promotes investment?
- What are the specific conditions under which interactive governance is most effective in promoting investment?

- How can policymakers and businesses best promote interactive governance in regions with fragmented institutions?

The answers to these questions could help policymakers and businesses design and implement more effective policies and strategies for promoting investment in regions with fragmented institutions.

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Gender, Entrepreneurial Education, Self-Efficacy, Internal Control Locus, and Entrepreneurial Intention Based on the Perspective of Students

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Abstract
This study investigates and analyzes the effect of gender, entrepreneurial education, self-efficacy, and internal control locus on entrepreneurial intention. Moreover, to achieve this goal, this study uses undergraduate students in the management and accounting departments of the business faculty of Maranatha Christian University as population and samples. This study sets the criterion based on the purposive sampling method because not all students already take entrepreneurial courses. Therefore, active students taking these courses onward deserve to be the samples. Based on this circumstance, this study surveyed their perception by distributing the questionnaire and effectively got 191 complete responses. Because of hypothesis verification, this study keeps employing a structural equation based on covariance to analyze and check the data related to constructs. Finally, this study concludes gender gap exists: male students have higher intentions to start a business than females. The more educated the students with entrepreneurial concepts, the more intent to start the venture. Students with higher self-efficacy and internal locus control tend to have higher intentions to begin a business.

Keywords: Entrepreneurial Education, Gender, Intention to Start a Business, Internal Control Locus, Self-Efficacy

1. Introduction

Entrepreneurship becomes the engine of developing the economic state (Hsiao et al., 2016). It is due to its role in creating jobs, cutting poverty, and growing the economy (Gherghina et al., 2020). Preferably, if people are employed, the economic problems: decreased social welfare, reduced government taxes because of no business, and non-optimal utilization of production factors, can be reduced. Besides, social issues like fraud, theft, robbery, and suicide can be diminished. Politically, public trust in the government also elevates when unemployment lessens (Sukirno, 2019).

Regarding the great consequence to the national economy, the intention of higher education students to be businesspersons is needed (Anjum et al., 2021). According to the planned behavior theory, this intention becomes the groundwork for somebody to behave and indicates how persistent and much-arranged effort is to realize the behavior (Ajzen, 1991). Based on the entrepreneurial context, this intention becomes a strategic phase smoothing the purposes, commitments, and interactions to build a new venture (Bird, 1988).

Furthermore, the students must arrange business plans to realize their entrepreneurial intention (Contreras-Barraza et al., 2021). These plans cover the business activities: marketing, production or operation, finance, and placing personnel (Abdullah, 2020). Additionally, Abdullah (2020) describes that these plans have several functions, for example, getting credit from banks, obtaining investor funds, winning enormous tenders, and acquiring qualified employees.

The research on the relationship between gender and entrepreneurial intention still shows controversial results. For instance, Mardisentosa and Khusaini (2019), Hertanto and Slamet (2020), Liu et al. (2022), and Mahlaole and Malebana (2022) report no gender gap based on this intention. However, Yordanova and Tarrazon (2010), Wongnaa and Seyram (2014), Malebana and Swanepoel (2015), Osiri et al. (2020), Hoang et al. (2021), and Vercruysse (2022) argue that males have more propensity to be businesspeople than females.

Equally, the association between entrepreneurial education and intention still provides contentious results. For illustration, Wongnaa and Seyram (2014), Sang and Lin (2019), Osiri et al. (2020), Hoang et al. (2021), Jiatong et al. (2021), Lv et al. (2021), Liu et al. (2022), and Saoula et al. (2023) demonstrate that students equipped with the entrepreneurial concepts from learning tend to be a businessperson. However, Yanti (2019) and Hertanto and Slamet (2020) exhibit no evidence.

Likewise, the research checking the relationship between entrepreneurial self-efficacy and intention is still inconsistent. For example, Hermawan et al. (2016), Saraih et al. (2018), Shahab et al. (2019), Hou et al. (2019), Yanti (2019), Shah et al. (2020), Elnadi and Gheith (2021), Hoang et al. (2021), Jiatong et al.(2021), Ndofirepi (2022), and Saoula et al. (2023) declare students with high entrepreneurial self-efficacy tend to have the higher ambition to be a businessperson. Unfortunately, Baraba (2021) demonstrates no association between this self-efficacy and the intention to start the business.

Similarly, the studies investigating the association between internal control locus (ILC) and entrepreneurial intention still provide debatable results. For illustration, Che Embi et al. (2019) declare a negative impact of ILC on the choice to start a venture. On the other hand, Hussain et al. (2014), Hermawan et al. (2016), Farrukh et al. (2018), and Tentama and Abdulsalam (2020) display a positive relationship between ILC and intention. Meanwhile, Yanti (2019), Ndofirepi (2020), and Auna (2021) exhibit that the internal control locus does not affect this intention.

By mentioning the varying results based on previous research, this study intends to prove the influence of gender, entrepreneurial education, self-efficacy, and internal control locus on entrepreneurial intention by utilizing the perspectives of undergraduate students in the management and accounting departments at Maranatha Christian University. This circumstance is relevant because these departments promise their students to be a businessperson as one of the graduate profiles in their curriculum.

2. Literature Review and Hypothesis Development

2.1. The association between gender entrepreneurial intention

Gender is a part of other social systems like status, age, and ethnicity, and it becomes a vital factor in the roles, rights, responsibilities, and relationships between males and females. Besides, this matter is related to appearance, attitude, and personality (Wade et al., 2020). It can be associated with entrepreneurial intention (Hoang et al., 2021; Malebana & Swanepoel, 2015; Osiri et al., 2020; Vercruysse, 2022; Wongnaa & Seyram, 2014; Yordanova

& Tarrazon, 2010). In their study employing university students, Yordanova and Tarrazon (2010) exhibit that female has a lower tendency to be businesspersons than males. By utilizing polytechnique students, Wongna and Seyram (2014) demonstrate that men are likelier to become entrepreneurs than women. In their study using students in higher educational institutions, Malebana and Swanepoel (2015) and Osiri et al. (2020) declare that males have more intention to be an entrepreneur than females. In line with them, Vercruysse (2022) confirms that female students tend less to open ventures than males. Using as the control variable, Hoang et al. (2021) declare gender positively affects entrepreneurial intention. Based on these proofs, the first hypothesis is expressed like this:
H_1: Males have a positive influence on entrepreneurial intention.

2.2. The association between entrepreneurial education and intention

Entrepreneurial edification equips students with related knowledge, skills, and attitudes (Jiatong et al., 2021), delivered through training (Sang & Lin, 2019) and teaching (Samuel & Rahman, 2018). With this enlightenment, higher educational institutions, through their lecturer, can enhance their awareness to become wishful businesspeople (Garavan & O′Cinneide, 1994). In their study utilizing students in higher education institutions, Wongna and Seyram (2014), Sang and Lin (2019), Ndofirepi (2020), Hoang et al. (2021), and Jiatong et al. (2021) demonstrate the more educated the students with entrepreneurial courses, the more focused they open and start a business. For students following the entrepreneurial class, Osiri et al. (2020) affirm that the related education positively affects their entrepreneurial intention. The study by Lv et al. (2021) utilizes (1) teaching, (2) practice supports, and business plan competition to measure entrepreneurial education and confirms a positive tendency of these three measurements on intention to create a business. Aligning with them, Liu et al. (2022) and Saoula et al. (2023) support this propensity. Based on these facts, the second hypothesis is announced like this:
H_2: Entrepreneurial education has a positive impact on its intention.

2.3. The association between entrepreneurial self-efficacy and intention

Self-efficacy denotes an individual ability and confidence to execute an expected particular task (Islam, 2019). In the entrepreneurial context, this *self-efficacy* determines how individuals behave as businesspersons (Newman et al., 2019). Persons with high self-efficacy enthusiastically focus more on taking advantage of and recognizing business opportunities; thus, they perform better in the market (Kazumi & Kawai, 2017). In their study, Hermawan et al. (2016), Saraih et al. (2018), Shahab et al. (2019), Hou et al. (2019), and Yanti (2019) document that this efficacy positively affects the plan to run a business. Correspondingly, Shah et al. (2020), Elnadi and Gheith (2021), Hoang et al. (2021), Jiatong et al. (2021), Ndofirepi (2022), and Saoula et al. (2023) confirm the same evidence. Based on this evidence, the third hypothesis is proclaimed like this:
H_3: Entrepreneurial self-efficacy has a positive impact on its intention.

2.4. The association between internal control locus and entrepreneurial intention

A control locus describes the personal conception of the reasons for events (Farrukh et al., 2018). The internal control locus believes everything will happen because of human efforts, not based on the fortunate. These locus-oriented people attempt to master their skills to achieve the destination (Perry & Morris, 2005). This control locus is needed when entrepreneurs search for chances and bravely innovate products (Che Embi et al., 2019). In their investigation, Hussain et al. (2014) and Farrukh et al. (2018) document that university students with upper internal control locus will have greater intention to start a business. Employing different samples: high vocational school students, Hermawan et al. (2016) and Tentama and Abdulsalam (2020) confirm the positive propensity of this control locus on the intention to be a businessperson. Based on these facts, the fourth hypothesis is proclaimed like this:
H_4: Internal control locus has a positive tendency on entrepreneurial intention.

3. Research Method

3.1. Variable definition

This study uses one dependent variable: entrepreneurial intention (EI). This intention is measured based on Maharana & Chaudhury (2022) with six items. Furthermore, it utilizes gender, entrepreneurial education (EE), self-efficacy (ESE), and internal control locus (ICL) as the first, second, third, and fourth independent variables. Gender is measured by a dummy variable, where one and zero are for males and females as the reference and base categories, as Kong and Choo (2022) utilize. EE and ESE are quantified based on the six modified items and six indicators from Shahab et al. (2019). Meanwhile, ICL is measured based on Bapat (2020). The associated items can be entirely seen in the first table.

Table 1: The operational definition of entrepreneurial intention, education, self-efficacy, and internal control locus

Variable	Item code	Description	Source
Entrepreneurial intention	EI1	I am preparing myself to be an entrepreneur.	Maharana and Chaudhury (2022)
	EI2	Becoming an entrepreneur will be my qualified destination.	
	EI3	I am strong-minded to create a future business project.	
	EI4	I am seriously considering opening a business.	
	EI5	I intend to run a company one day.	
	EI6	I intend to start a company within five years.	
Entrepreneurial education	EE1	I learn to plan business	Shahab et al. (2019)
	EE2	I understand the financial features of entrepreneurship: cash flow, feasibility project, proforma income statement, projected balance sheet, and other related concepts.	
	EE3	I can develop business models.	
	EE4	I can develop concepts.	
	EE5	I know the responsibility of the entrepreneur.	
	EE6	I comprehend the business process from the plan to its implementation.	
Entrepreneurial self-efficacy	ESE1	I can work effectively under pressure and conflict.	Shahab et al. (2019)
	ESE2	I can obtain new thoughts and products.	
	ESE3	I can develop and keep in contact with prospective investors.	
	ESE4	I see potency for saleable goods.	
	ESE5	I can recruit and train employees.	
	ESE6	I can create a work environment to encourage my employees to innovate.	
Internal control locus	ILC1	I can resolve my numerous issues.	Bapat (2020)
	ILC2	I can change the vital matters in my life.	
	ICL3	I can control my future and desires.	

3.2. Population, sampling technique, and the data collecting method

The population of this study consists of dynamic undergraduate students in the business faculty of Maranatha Christian University, Bandung, in 2021 in the management and accounting departments. Considering that not all students take entrepreneurial courses, this study sets the sampling framework: they must take these courses. Based on the curriculum, the related subjects are given in the sixth semester to accounting students and the fourth semester to management students. Moreover, to collect their response associated with the latent variables: EI, EE, ESE, and ILC, the Likert scale with five points is applied, as Hartono (2014) describes. This scale shows disagreement and agreement between one and five (Hartono, 2014). The survey was done in July 2020, effectively locating 191 students.

3.3. The method to analyze the data

The collected samples are 191 students. Because the total is nearly 200, this research utilizes a structural equation model based on covariance to analyze their responses, as Ghozali (2021b) describes. Besides, this model is recommended for examining the relationship between two constructs from the hypotheses (Ghozali, 2021b). The intended model is obtainable in the first equation.

$$EI = \beta_1 DMALE + \beta_2 EE + \beta_3 ESE + \beta_4 ICL + \zeta_1 \qquad (1)$$

Notes: EI = entrepreneurial intention, DMALE = male as the reference category of Gender, EE = entrepreneurial education, ESE = entrepreneurial self-esteem, ICL = internal control locus

4. Result And Discussion

4.1. The profile of students

Table 2 provides the profile of 191 undergraduate students joining the survey in July 2020. They are classified demographically based on gender and age and academically based on batch, department, and grade point average. Based on gender, the males are dominant (64.40%), and the rest are female (35.60%). The students aged between 21 and 22 are foremost (47.12%), traced by the students between 19 and 20 (30.89%) and from 23 to 24 (21.99%) as the last position. By denoting batch, the largest comes from 2016 (27.75%), followed by 2015 (21.99%), 2019 (20.42%), 2017 (19.37%), and 2018 (10.47%). Based on the department, management students become the top participants (63.35%), followed by accounting students (36.65%). By mentioning grade point academics, the utmost students have GPAs from 3.01-3.50 (31.41%), tailed by GPAs from 3.51 to 4 (30.89%), 2.51 to 3.00 (28.27%), and 2.01 to 2.5 (9.42%).

Table 2: The profile of the students joining the survey

Feature	Sub-feature	Description	Total (191 students)	Portion
Demographic	Gender	Male	123	64.40%
		Female	68	35.60%
	Age	19-20	59	30.89%
		21-22	90	47.12%
		23-24	42	21.99%
Academic	Batch	2015	42	21.99%
		2016	53	27.75%
		2017	37	19.37%
		2018	20	10.47%
		2019	39	20.42%
	Department	Undergraduate management	121	63.35%
		Undergraduate accounting	70	36.65%
	Grade point average	From 2.01 to 2.50	18	9.42%
		From 2.51 to 3.00	54	28.27%
		From 3.01 to 3.50	60	31.41%
		From 3.51 to 4.00	59	30.89%

4.2. The instrumental examination results

Table three describes the validity result. The loading factor for EE1 to EE6 is 0.809, 0.619, 0.735, 0.669, 0.782, and 0.834, ESE1 to ESE6 is 0.632, 0.712, 0.749, 0.756, 0.595, and 0.829, ILC1 to ILC is 0.662, 0.769, and 0.688, and EI1 to EI5 is 0.635, 0.866, 0.908, 0.877, and 0.938. Meanwhile, the average variance extracted (AVE) for EE, ESE, ICL, and EI is 0.555, 0.513, 0.501, and 0.725. These values are more significant than 0.5, as Ghozali (2017) requires for loading factor and AVE; hence, a valid answer of respondents exists. Besides, the composite reliability and Cronbach Alpha for EE are 0.881 and 0.879. For ESE, their value is 0.862 and 0.862. For ICL, their value is 0.750 and 0.747. Meanwhile, for EI, their value is 0.929 and 0.925. Because these values are more extensive than 0.7, as Ghozali (2017) and Ghozali (2021a) demonstrate for CR and CA, respectively, the reliable answer of respondents occurs.

Table 3: Validity and reliability examination result

Variable	Indicator	Loading factor	AVE	Composite reliability	Cronbach Alpha
Entrepreneurial education	EE1	0.809	0.555	0.881	0.879
	EE2	0.619			
	EE3	0.735			
	EE4	0.669			
	EE5	0.782			
	EE6	0.834			
Entrepreneurial self-esteem	ESE1	0.632	0.513	0.862	0.862
	ESE2	0.712			
	ESE3	0.749			
	ESE4	0.756			
	ESE5	0.595			
	ESE6	0.829			
Internal control locus	ILC1	0.662	0.501	0.750	0.747
	ILC2	0.769			
	ILC3	0.688			
Entrepreneurial intention	EI1	0.635	0.725	0.929	0.925
	EI2	0.866			
	EI3	0.908			
	EI4	0.877			
	EI5	0.938			

Source: The output of IBM SPSS AMOS 19

4.3. The goodness of fit model detecting result

After the answers attain validity and reliability examination, detecting the goodness of fit is the next phase, where the results are displayed in the fourth table. In this table, CMIN/DF is 2.548, between two and five, as Hair Jr. et al. (2019) required. For the root mean square error of approximation (RMSEA), this value is 0.068, less than 0.08, as obligated by Hair Jr. et al. (2019). Furthermore, the Tucker-Lewis index (TLI) and comparative fit index (CFI) are 0.920 and 0.932, more significant than 0.9, as recommended by Ghozali (2017). For parsimonious goodness, normal, and comparative fit indexes (PGFI, PNFI, and PCFI), their value is 0.665, 0.737, and 0.798, more substantial than 0.5, as Dash and Paul (2021) suggested.

Table 4: The goodness of fit-detecting result

Measurement	Result	Acceptable value	Meaning
CMIN/DF	2.548	Between two and five (Hair Jr. et al., 2019)	Model fits data.
RMSEA	0.068	Below 0.08 (Hair Jr. et al., 2019)	Model fits data.
TLI	0.920	Above 0.9 (Ghozali, 2017)	Model fits data.
CFI	0.932	Above 0.9 (Ghozali, 2017)	Model fits data.
PGFI	0.665	Above 0.5 (Dash & Paul, 2021)	Model fits data.
PNFI	0.737		
PCFI	0.798		

Source: The modified output of IBM SPSS AMOS 19

4.4. Model estimating result

Table 5 presents the result of the variance-based structural equation model estimation with the probability (1-tailed) of the critical ratio of 0.002 for DMALE → EI, 0.011 for EE → EI, 0.004 for ESE → EI, and 0.022 for ILC → EI. These values are less than the 5% significance level; therefore, the first, second, third, and fourth hypotheses are acceptable.

Table 5: Variance-based structural equation model estimating result: The determinant of entrepreneurial intention

Hypothesis	Causal Association	Path coefficient	Standard error	Critical Ratio	Probability	
					2-tailed	1-tailed
One	DMALE → EI	0.230	0.078	2.954	0.003	0.002
Two	EE → EI	0.170	0.074	2.293	0.022	0.011
Three	ESE → EI	0.233	0.087	2.668	0.008	0.004
Four	ILC → EI	0.269	0.133	2.022	0.043	0.022

Source: The modified output of IBM SPSS AMOS 19

4.5. Discussion

From the first hypothesis checking result, male positively affects entrepreneurial intention. Unlike female students, males tend to be the businessperson. According to Shmailan (2016), males confidently take risks and are willing to fail when organizing their ventures. Based on these features, the bank trusts males by lending them money. Based on this evidence, this study supports Yordanova and Tarrazon (2010), Wongna and Seyram (2014), Malebana and Swanepoel (2015), and Osiri et al. (2020) exhibiting a positive propensity of male students to open and manage their business when they graduate from the higher education institution.

From the second hypothesis checking result, entrepreneurial education positively affects the intention to run a business. This situation means that the learning process in entrepreneurship-associated courses is effective for students who know the importance of establishing their businesses in the future. Besides getting profits, they can help the government overcome unemployment by starting a business. Hence, this research aligns with Wongna and Seyram (2014), Sang and Lin (2019), Ndofirepi (2020), Hoang et al. (2021), Lv et al. (2021), Jiatong et al. (2021), Liu et al. (2022), and Saoula et al. (2023).

From the third hypothesis testing result, entrepreneurial self-efficacy positively affects the intention to run a business. The students with high efficacy will trust their capability to reach their personal goals. According to Burnette et al.(2020), self-efficacy can help students to think creatively; therefore, it supports their decision to open a new business. Considering this positive influence, this study confirms Hermawan et al. (2016), Saraih et al. (2018), Shahab et al. (2019), Hou et al. (2019), and Yanti (2019). Additionally, this study aligns with Shah et al. (2020), Elnadi and Gheith (2021), Hoang et al. (2021), Jiatong et al. (2021), Ndofirepi (2022), and Saoula et al. (2023).

Examining the fourth hypothesis shows that internal locus control positively affects the intention to run a business. This result means that students with realistic thinking intend to open a company. Through this thinking, the students will depend on their hard work to attain what they dream; thus, they disbelief luck instantaneously. Based on this positive relationship, this study confirms Hussain et al. (2014) and Farrukh et al. (2018) using 322 and 1175 university students taking a business concentration in Pakistan as their samples, one-to-one. Besides, this study affirms Hermawan et al. (2016) and Tentama and Abdulsalam (2020), employing 124 and 171 vocational high school students in Indonesia as their samples, respectively.

5. Conclusion

This study aims to prove and analyze the influence of gender, entrepreneurial education, self-efficacy, and internal control locus on entrepreneurial intention. Moreover, this study utilizes 121 and 70 undergraduate students in the accounting and management departments at Maranatha Christian University, Bandung, as the relevant samples. This condition happens because these departments set entrepreneurs as one of the graduate profiles. After testing their response, this study concludes several things. Firstly, males have better entrepreneurial intentions than females. Secondly, entrepreneurial education successfully motivates students to run a business. Finally, the students with high self-efficacy and internal control locus will intend to start the venture. Therefore, the contribution of this study is to strengthen the previous study results.

Although this circumstance is proven, the study still has some limitations, such as the scope: only covering one higher education institution in a single city, and four utilized determinants: gender, entrepreneurial education, self-efficacy, and internal control locus. Furthermore, the subsequent academics interested in this topic are expected to use private and public higher education institutions in West Java, such as Bandung, Banjar, Bekasi, Bogor, Cimahi, Cirebon, Depok, Sukabumi, and Tasikmalaya. Internationally, they can use business students from the counties in Southeast Asia: Indonesia, Malaysia, Philippines, Singapore, Cambodia, Myanmar, Laos, Thailand, Vietnam, and Timor-Leste. For additional determinants of entrepreneurial intention, they can utilize leadership skills, creativity, risk-taking, university support, learning orientation, and student personality.

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Online Search Frequency and Financial Performance: The Moderating Effect of Business Sector

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Abstract
This study aims to examine the effect of online search frequency on financial performance with the business sector as a moderating variable. This study also uses the level of internet users and the inflation rate as control variables. The population in this study were 400 financial statements of companies registered at IDX80 for the period 2018 – 2022. The research sample was selected using a purposive sampling method and produced a sample with a total of 215 financial statements from 43 companies divided into 8 business sectors. Data were analyzed using multivariate analysis of variance in the IBM-SPSS-24 application. The frequency of online searches was measured using Google Trends. Financial performance is measured using the proportional assets ratio (PAR) and anchored ratio (AR). The results show that the frequency of online searches has a significant effect on financial performance. In detail, it has a significant effect on current assets, current liabilities, expenses and profit before tax. In addition, the business sector also significantly moderates the relationship between online search frequency and financial performance except for the Industrials, and Properties & Real Estate sectors. Testing of control variables also shows that the level of internet users significantly influences financial performance. The findings from the research indicate that the frequency of online searches has the potential to negatively impact companies considering the level of internet users.

Keywords: Online Search Engine, Financial Performance, Google Trends, Proportional Asset Ratio, Anchored Ratio

1. Introduction

The financial performance is determined based on the information presented in the financial statements. However, these figures still have an element of uncertainty in predicting profits or business sustainability in the future (Breton, 2019). This uncertainty does not mean that financial statements cannot be used as a basis for making future decisions but that additional information is needed. This phenomenon is illustrated in the stock market in Indonesia. In 2019, the Indonesia Stock Exchange (IDX) released a new method for calculating the index named Capped Free Float Adjusted Market Capitalization Weighted (Indonesia Stock Exchange, 2021). This method considers transactions from minority investors with share ownership below 5% (Indonesia Stock Exchange, 2023). Changes in the index measurement methodology indicate the need for more relevant information to reduce the risk of errors in decision-making.

The digital era makes it easy to sell their products through digital platforms such as social media and e-commerce. Social media can increase customer loyalty to company brands (Bilgin, 2018). Social media is used to maintain customer engagement with company products and e-commerce, which is directly related to increased sales (Jovanovic et al., 2020). This pattern of branding using the internet is termed digital branding.

Research examining the relationship between digital branding and financial performance is not recent. Literature studies on articles published from 1969 – 2008 show a positive relationship between company branding and financial performance (Fetscherin & Usunier, 2012). Repeated research does not necessarily provide clear and generalizable results. Research gaps in studies using branding as a research variable also still have bias. This bias lies in the terminology of branding, which is often interpreted with reputation, image, and identity, even though the meaning is different (Fetscherin & Usunier, 2012). As a result, the research results on branding cannot be generalized.

Difficulties in generalizing research results also occur in studies involving financial performance as a variable. The many types of measuring instruments in assessing financial performance are the main cause. Financial ratios do not have a positive impact on financial statement disclosure but have an impact on reducing negative information in financial statements (Mushtaq et al., 2022). As a result, there has yet to be a consensus regarding the quality of the company's financial performance (Rosa, 2021). Financial performance can not only be measured through existing financial ratios. However, it can also use opinions from experts regarding the impact of branding on finance in the future (Ribeiro-Navarrete et al., 2021). Expert opinions and projections are needed as additional references, but of course, the level of accuracy of these assessments needs to be tested first and cannot be generalized.

Research limitations related to branding and financial performance are limited to the measurement tools, the research location, and the business sector. Most research related to branding is only carried out in England and the United States, so many locations in the world still need to be included in the scope of this research (Fetscherin & Usunier, 2012). The complexity of research by looking at the business sector also needs to be considered in order to provide a more complex picture of the relationship between financial performance and branding in each business sector (Fraccastoro et al., 2021; Liu et al., 2021; Strebinger, 2014).

The difference between this research and previous research lies in the measuring instrument, location, and business sector. As a tool to measure the frequency of online searches, Google Trends is likely to provide a more relevant picture in assessing the company's branding performance. Using ratios such as the Proportional Asset Ratio (PAR) and the Anchored Ratio (AR) is also expected to provide a more detailed picture of the company's financial performance. The expected result of using this measuring instrument is a more detailed explanation of the impact of branding on each component in the financial statements. In addition, the use of business sectors and research locations in Indonesia is expected to provide a more detailed picture with a narrower scope.

This study aims to examine the effect of online search frequency on financial performance and the business sector's role in moderating this relationship. Theoretically, Bayes' theory will explain the potential use of other information in assessing financial performance based on the business sector. Practically, information about the frequency of online searches can be used to predict financial performance before the company's financial statements are released by considering the company's business sector.

2. Literature Review

2.1 Bayesian theory

Bayes' theory is a theory that appears to answer the probability of an event occurring (Bayes, 1763). The use of Bayes Theory in accounting raises the concept that the numbers in accounting are seen as statistical signals and not as measuring tools (Johnstone, 2018). This concept then gave rise to financial ratios known today in assessing financial performance (Beaver et al., 2010).

Bayesian accounting theory describes Bayes' theory in five general discussions. First, all levels of trust in information must have a starting point and are subjective (Johnstone, 2018). Second, the more risks that can be studied, the flatter the posterior probability distribution will be (Johnstone, 2018). Third, generating more information does not necessarily reduce the risk of uncertainty from information (Johnstone, 2018). Fourth, any information has the potential to provide uncertainty, but in Bayes' theory, any information can potentially be wrong or even provide new certainty when combined with other information (Johnstone, 2018). Fifth, any quality accounting information will provide a signal that can be used to predict (Johnstone, 2018).

2.2 Financial performance

The financial statements produced by company directors are still informational. This information can be useful for stakeholders when considering other factors such as risk, uncertainty, time, rate of return, and security (Jones et al., 2015). Assessment of financial performance is also subjective. This subjectivity in assessing the company's financial performance gives rise to analytical techniques such as analysis by comparing similar industries or within a certain time span (Davidson, 2019).

Three measurement tools are generally used: currency, percentages, and ratios (Rosa, 2021). Each measuring tool has its weaknesses. Measurement with currencies will make direct comparisons difficult to make if companies use different currencies (Rosa, 2021). Measurements with percentages do not consider the company's valuation value in comparisons (Rosa, 2021). Ratio measurements are often used in analyses that consider the same period and cannot be used to analyze timeframes (Rosa, 2021).

2.3 Online Search Frequency

The discussion of the theory regarding the online search frequency in this study will be associated with the company's digital branding. By definition, digital branding can be linked to the character of a company, service, or product that emerges from its users through social media interactions or online reviews (Rowles, 2018). For companies, branding has two functions: determining the company's marketing direction and maintaining company value on the stock market (Swaminathan et al., 2020). For consumers, company branding will determine product quality and customer knowledge or understanding of company products (Swaminathan et al., 2020). For the community, company branding will be associated with its impact on the community and culture that exists in society (Swaminathan et al., 2020).

3. Theoretical and Conceptual Background

A decision making is always based on information that is processed first. In general, financial performance is certainly assessed from financial statements. The financial statements are based on all the company's financial activities. Two financial statement risks are commonly used in audits, namely business risk and inherent risk. Business risk is the probability that a company suffers a loss due to its business (Colbert, 1991). the inherent risk appears in financial statement accounts or financial transactions (Colbert, 1991).

Referring to Bayes' theory, other information needs to be presented to describe the risks more clearly. Financial statements as the basis for performance appraisal have involved two parties, management, and auditors. The existence of information that appears from the customer's point of view will complete the information needed to assess the company's performance. This information can be linked to the results of company branding.

The link between accounting science and marketing science is the basis for the emergence of this research. Every activity related to branding will appear in the cost component, which is then evaluated by analyzing income and ability to generate net profit (Keller & Brexendorf, 2019; Köylüoğlu et al., 2021). The ability to generate net profit is then interrelated with company equity, such as share value (Keller & Brexendorf, 2019). Companies with big brands tend to have less cash because companies with large funds tend to aggressively allocate funds to increase their brand value (Larkin, 2013).

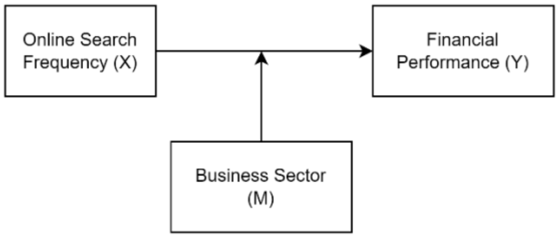

Figure 1: Conceptual Model of the Study; *Source:* Authors

4. Empirical Review and Hypothesis Development

The theoretical explanation regarding the relationship between online search frequency and financial performance can also be seen through the company's business process flow in interacting with its consumers. Using social media and other digital communication tools can enable companies to increase their market reach (Fraccastoro et al., 2021). This interaction ultimately impacts improving financial performance (Ribeiro-Navarrete et al., 2021). The ease of interaction will increase brand awareness, ultimately positively impacting financial performance due to the increased credibility of the company's brand (Anees-ur-Rehman et al., 2018). Previous research has shown a positive effect between the two variables (Bayer et al., 2020; Liu et al., 2021; Yang et al., 2015).

H_1: Online search frequency has a significant effect on financial performance.

According to Bayes' theory, the subjectivity of evaluating information is not only based on its users but also on information regarding the impact of the company's business patterns. Mistakes in understanding business patterns will cause bias in the information used in assessing performance. Each industry has a different strategy for generating profits depending on the company, customers, and competition (Ohmae, 1982). Based on these three strategies, the main focus is on meeting customer needs because a business aims to serve customers better than its competitors (Iruthayasamy, 2021). In addition, each business sector has a different way of budgeting depending on the scarcity and demand for goods (Kengatharan, 2016).

H_2: Business sector significantly moderate the relationship between online search frequency and financial performance.

5. Research and Methodology

5.1 Population and Sample

The population in this study is 400 financial statements of companies listed on IDX80 from 2018 – 2022. The IDX80 is an index that measures the price performance of 80 stocks with a high free float ratio, high liquidity, and large market capitalization, supported by good fundamentals (Indonesia Stock Exchange, 2021). The sample was selected by purposive sampling with two criteria based on the consistency of stocks and non-financial business sectors. Samples with consistency criteria will be selected by looking at stocks that have always been listed in IDX80 from 2018 – 2022. The financial business sector will be removed from the research sample due to differences in reporting models in financial statements. As a result, 215 samples of 48 companies divided into eight business sectors were selected. These business sectors are Basic Materials, Consumer Non-Cyclicals, Consumer Cyclicals, Energy, Infrastructures, Healthcare, Industrials, and Properties & Real Estate.

5.2 Data Measurement

Financial performance is measured using a ratio based on total asset value. The method is called Proportional Asset Ratio (PAR) and Anchored Ratio (AR) (Rosa, 2021). This ratio measures a component of financial statements compared to total assets. PAR analysis can be used for comparative analysis with similar industries in the same period (Rosa, 2021). The AR ratio is used for the horizontal analysis of timeframes or trends (Rosa, 2021). This study will measure 18 ratios consisting of PAR and AR ratios for current assets, non-current assets, current liabilities, non-current liabilities, equity, revenue, cost of sales, expense, and profit before tax.

The online search frequency data is obtained from the Google Trends website. This data set contains digital popularity values with a scale from 0 – 100, which is assessed based on total searches for certain keywords (Google, 2021). The keyword used in this research is company name. Weekly online search frequency data is averaged using the Exponential Weighted Moving Average (EWMA) because the research data is time series (Newbold et al., 2020).

The company's business sector is measured using a nominal scale. The numbering in this classification is equivalent or not graded. Based on the existing sample, there are eight classifications used in this study, namely (1) Basic Materials, (2) Consumer Non-Cyclicals, (3) Consumer Cyclicals, (4) Energy, (5) Infrastructures, (6) Healthcare, (7) Industrials, and (8) Properties & Real Estate.

This study uses two control variables: the level of internet users and the inflation rate. The selection is based on potential theoretical explanations rather than focusing solely on the characteristics of the research sample (Carlson & Wu, 2012). The level of internet users was chosen because the industrial revolution 4.0, with its interconnection via the internet, has formed a digital society with its digital culture (Nikitenko, 2019). The inflation rate was chosen because the inflation rate will provide an overview of the economic conditions in the country where the company is located. Inflation conditions will affect the company's ability to generate profits (Tarkom & Ujah, 2023).

5.3 Data Analysis

Hypothesis testing will use Multivariate Analysis of Variance (Manova) in IBM-SPSS-24. The Manova test explores the relationship between the independent variables and two or more dependent variables (Srivastava & Rego, 2011). Hypothesis testing using moderating variables will use interaction as a benchmark (Baron & Kenny, 1986). PROCESS v4.3 in IBM-SPSS-24 will be used to test the effect of moderating variables. This test is commonly referred to as Moderated Regression Analysis (MRA) and is usually used to determine the limits of the interaction of the relationship between the independent variable and the dependent variable (Hayes, 2022).

The regression model to test hypothesis 1 is as follows:

$$Y_{ij} = \alpha X + \alpha_2 \Sigma(Control\ variables) + \varepsilon_{ij} \ldots (1)$$

The regression model to test hypothesis 2 is as follows:

$$Y = \alpha_1 + \alpha_2 X + \alpha_3 M + \alpha_4 XM + \alpha_5 \Sigma(Control\ variables) + \varepsilon_{ij} \ \ldots\ldots (2)$$

Where Y_{ij} is the company's financial performance as measured by PAR and AR for current assets, non-current assets, current liabilities, non-current liabilities, equity, revenue, cost of sales, expense, and profit before tax. The coefficient α is the regression coefficient for the dependent, moderating, and control variables. *X* is the dependent variable of online search frequency. *M* is the business sector as a moderating variable.

6. Findings and Discussions

6.1 Findings

6.1.1 Descriptive Statistic

The results of the descriptive statistics are shown in Table 1. Based on this table, the maximum value of online search frequency is 83.84, and the minimum value is 0.34. This information illustrates that there are companies in IDX80 that have very low digital activity at 0.34 while the average value is 33.60. Based on the PAR - Profit Before Tax ratio, some companies experience losses equivalent to 0.07 or 7% of total assets, and others generate profits equivalent to 0.59 or 59% of their total assets even though the average is only at 0.106. Some companies are able to generate revenue equivalent to 3.8 times the value of their total assets, even though the average is only 0.7. In the company's performance from year to year, the highest maximum value is seen in the ratio of AR - Revenue and AR - Cost of Sales which are 3.9 and 3.47, whereas the average is only 0.86 and 0.59. This indicates that some companies can generate income equivalent to 3.9 times the value of their assets in 2018.

Table 1: Summary Statistic

VARIABLE	Mean	Median	Mode	Minimum	Maximum
Online Search Frequency	33.60	33.23	17.93	0.34	83.84
PAR - Current Assets (CA)	0.4194	0.4363	0.4660	0.0556	0.8272
PAR - Non-Current Assets (NCA)	0.5806	0.5637	0.5340	0.1728	0.9444
PAR - Current Liabilities (CL)	0.2422	0.2098	0.2731	0.0457	0.6792
PAR - Non-Current Liabilities (NCL)	0.2098	0.1799	0.0092	0.0092	0.6749
PAR - Equity (EQU)	0.5480	0.5519	0.1264	0.1264	0.8879
PAR - Revenue (REV)	0.7686	0.5526	0.1016	0.1016	3.8222
PAR - Cost of Sales (COS)	0.5427	0.3730	0.6325	0.0269	3.3996
PAR - Expenses (EXP)	0.1031	0.0520	0.1777	0.0032	0.6548
PAR - Profit Before Tax (PBT)	0.1064	0.0821	-0.0763	-0.0763	0.5976
AR - Current Assets (CA)	0.4830	0.4731	0.0004	0.0003	1.3229
AR - Non-Current Assets (NCA)	0.6897	0.6195	0.0007	0.0007	2.6993
AR - Current Liabilities (CL)	0.2777	0.2466	0.1637	0.0002	0.9530
AR - Non-Current Liabilities (NCL)	0.2597	0.2068	0.0001	0.0001	1.6005
AR - Equity (EQU)	0.6347	0.6045	0.7666	0.0006	1.6723
AR - Revenue (REV)	0.8623	0.6618	0.0009	0.0009	3.9006
AR - Cost of Sales (COS)	0.5981	0.4073	0.1179	0.0007	3.4779
AR - Expenses (EXP)	0.1184	0.0544	0.0001	0.0001	0.7093
AR - Profit Before Tax (PBT)	0.1251	0.0866	0.1244	-0.0763	1.0707

Source: Author

6.1.2 Assumption

The Manova test can be done with five assumptions: the dependent variable using categorical measurements, the dependent variable using interval/ratio measurements, data normality, homogeneity of variance, and correlation between groups (Denis, 2021; Mayers, 2013). This study then divided the online search frequency variable into four categories, namely Group 1 (0 – 20), Group 2 (20 – 40), Group 3 (40 – 60), and Group 4 (> 60). The normality test results show a normal distribution of all ratios with a sig value > .05. The results of the homogeneity of the variance tested with Levene's Test also show that 17 ratios have sig > .05 and one ratio sig < .05 (0.0442).

The correlation test between groups showed results of sig <.05 when it should have been sig >.05 (see Table 3). This study uses KMO (Kaiser-Meyer-Olkin) and Bartlett's test to overcome these problems. As a result, the KMO test for each group is >.500, and Bartlett's test is .000 with sig <.001. Group 1 has KMO 0.721. Group 2 has KMO 0.666. Group 3 has KMO 0.562. Group 4 has 0.509. These results indicate that the dependent variable does not have a multicollinearity relationship and has an adequate sample.

6.1.3 Assessment of the hypothesized relationships

Testing the hypothesis using the control variable shows that H1 is accepted with a value of $\lambda = .436$, $F = 2.755$ and sig .000. The results of testing the control variables show that internet users influence the relationship between variables with a value of $\lambda = .602$, $F = 5.703$ and sig .000, but the inflation rate does not have a significant effect with a value of $\lambda = .877$, $F = 1.204$ and sig .264. The Manova test also provides univariate analysis examining the relationship between online search frequency and each ratio in the dependent variable. As a result, online search frequency significantly affects eight ratios, namely PAR_CA, PAR_CL, PAR_EXP, PAR_PBT, AR_CA, AR_CL, AR_EXP, and AR_PBT.

The results of the moderation test show that there are 17 significant ratios and one insignificant ratio for AR_PBT with a p-value of .508. In general regression testing or summary models, the results of all ratios give significant results (p-value <.05) with an R-Squared between 0.28 – 0.63 if the average is 0.47. Based on these results, this study's moderating variable (business sector) significantly moderates the effect of online search frequency on company financial performance, or H2 is accepted.

6.2 Discussions

The results of this study are consistent with previous studies, which state a relationship between online search frequency and financial performance (Bayer et al., 2020; Liu et al., 2021; Yang et al., 2015). This also shows that digital activities that occur in Indonesia have the potential to influence the company's financial performance. This study uses the term potential because not all digital activities impact a company's financial performance. It should be understood that this research only includes company names in digital frequency-level data collection.

This research also shows different results from previous studies, which say that a company's digital activities will positively impact financial performance (Fetscherin & Usunier, 2012; Park & Jiang, 2020; Yoon et al., 2018). This difference is because the online search frequency only has an impact on expenses and profit before tax and does not have an impact on revenue. Referring to the concepts in the financial statements, the frequency of online searches has a negative impact on the company because it only results in an increase in expenses and a decrease in profit before tax. If it is associated with the potential reasons for the company's popularity in the digital world, the negative information will impact decreasing the company's image (Maslikhan, 2019). Negative information will cost the company to restore its image.

Testing the moderating variable shows that the business sector strengthens the effect of online search frequency on company financial performance. This is in line with the development of previous research hypotheses explaining that each industrial sector has a different business strategy to meet consumer needs (Iruthayasamy, 2021; Ohmae, 1982).

The results of the moderation test in this study can be used to assess a company's business risk. If related to Bayes' theory, every business sector has a different potential for error in decision-making. Every stakeholder needs to consider their business decision-making by studying each business sector's risks. Two things can be considered in making decisions based on the company's business sector, namely market conditions and key reasons for business success/failure in that business sector (Ohmae, 1982).

It is important for stakeholders to consider any information in assessing financial performance. The results of this study indicate that information about online search frequency and internet user levels can be used as initial information to assess financial performance before financial statements are published. This initial information can be used by stakeholders to take anticipatory steps to protect their interests. Stakeholders must also be careful when the company's brand is viral on the internet. They have to look at the reasons for popularity and impact on the company.

The results of this study indicate that management needs to maintain their company's image in society, especially on the internet. This research and previous studies show that the popularity of a company can have a positive or negative impact depending on the cause. Based on this, management must increase their awareness of any information on the internet related to their company. Management can take advantage of online social networks and use IT technology related to customer service to support their business (Horváth & Szerb, 2018; Ribeiro-Navarrete et al., 2021). Good service will make the company's image positive. For external stakeholders such as shareholders, information regarding the frequency of online searches and business characteristics can be used to predict their decision-making. If the frequency of company online searches increases due to positive or negative information, shareholders can predict whether their share value will increase or decrease (Huang et al., 2020).

7. Conclusions

The results of this study show that the frequency of online searches has a significant effect, and the business sector significantly moderates the relationship between the two variables. Tests for control variables also show that only the level of internet users significantly controls the company's financial performance. Based on these results, the online search frequency, the business sector, and the level of internet users can be used as supporting information to assess financial performance. If stakeholders want to assess financial performance by considering a company's digital activities, then information about the online search frequency taking into account the internet users and the business sector can be used to measure this. In addition, information about a company's digital activity can be used to predict financial performance.

There are three limitations to this research. First, the frequency of online searches is limited to company names and does not show any information about the products of that company. This allows for differences in results on online search frequency using the name of the goods/services produced by the company. Second, data sourced from Google trends basically cannot distinguish searches resulting from negative or positive information. This has the potential to result in a biased interpretation when trying to explain the direction of the correlation of high or low online search frequency. Third, the measurement of the dependent variable with many ratios makes it difficult to interpret the results and has the potential to give wrong interpretation results. Based on these limitations, this study suggests further research that focuses on each business sector by using negative/positive information in assessing the online search frequency with keywords for the names of goods/services produced by companies and using ratios that focus on assessing profit before tax.

There are three limitations to this research. First, the online search frequency is limited to company names and does not show any information about the products of the company. This allows for differences in results on online search frequency using the name of the goods/services produced by the company. Second, data sourced from Google Trends cannot distinguish searches resulting from negative or positive information. This can result in a biased interpretation when explaining the direction of the high or low online search frequency correlation. Third, the measurement of the dependent variable with many ratios makes it difficult to interpret the results and can potentially give wrong interpretation results. Based on these limitations, this study suggests further research that focuses on each business sector by using negative/positive information in assessing the online search frequency with keywords for the names of goods/services produced by companies and using ratios that focus on assessing profit before tax.

This research produces two theoretical implications. First, the results of this research analysis show that not all online search frequencies have a positive impact on a company's financial performance. These results indicate that the character of the information that causes an increase in the online search frequency needs to be considered in assessing financial performance. The character of the information can be associated with information that can reduce or enhance the company's image. Second, the business sector and the level of internet users need to be considered when conducting research related to online search frequency and financial performance.

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The authors declare no conflict of interest.

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