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The Mediatory Role of Working Hours and Technology in the Relationship between Income and Social Cohesion in Ghana

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Abstract
This study aims at establishing the mechanism through which income/wage influences social cohesion using access to technology and working hours as mediating variables. There is a need for this exposition because indicators of social cohesion such as trust and political participation have experienced a downward trend following Ghana elevation to a middle-income country. The study used dataset from the sixth round of the Ghana Living Standard Survey (GLSS 6) which is a nationally representative survey and the data was analyzed using Structural Equation Modeling (SEM). The key findings are that income positively affects engagement in politics both directly and indirectly. The effects of income on trust, however, is negative. Another key information the study revealed is the crucial role technology plays in social cohesion. Access to technology was found to influence both trust (negatively) and political participation (positively).

Keywords: Social Cohesion, Trust; Income, Access to Technology, Working Hours, Political Participation, SEM

1. Introduction

Sub-Saharan African societies, until contemporary times, were mostly communal-based. Members of these communities saw themselves as one another's keeper. Trust and engagement in political activities by community members were intertwined in their social fabric of life (Avogo, 2013). However, recent statistics exhibits that the level of social cohesion in most sub-Saharan African countries including Ghana is dwindling. The 2005, 2008 and the 2012 Afro-barometer survey report indicated that Ghana is experiencing low and oscillating levels of

social cohesion. Though the level of trust shot up from a rate of 0.368 in 2005 to 0.405 in 2008, the figure later plummeted to as low as 0.247 in 2012. A similar picture can be seen for social cohesion in general. The Afro-barometer survey report indicated that the figure for social cohesion dropped from 0.377 in 2005 to 0.365 in 2008 before bouncing back to 0.407 in 2012 (Langer, Stewart, Smedts, & Demarest, 2017). It must be noted that these relatively low indexes of social cohesion in general and trust are happening in an era when the nation is experiencing progression in its economic activities. Ghana has now moved from least developed to middle income economy with most of the economic successes occurring in the 21st century.

Though a great number of empirical studies have been devoted to investigating the effect of economic empowerment on social cohesion, little is known about the transmission mechanism through which the former affects the latter. This paper fills this gap by exploring the sequences by which economic empowerment influences social cohesion indicators such as trust level and political engagement in Ghana using working hours and access to technology as mediators.

2. Literature Review

This segment of the paper looked at literature relating to the effect of the two mediators on trust and political participation as well as how income is linked to the mediators.

2.1 Trust

Perhaps the most accepted definition of trust is by Mayer, Davis, & Schoorman, (1995). The authors defined trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party". It is an undisputable fact among studiers of trust that the concept is a multidimensional social construct (Lewicka & Krot, 2012). Its facets include interpersonal trust, institutional trust as well as trust in politics. Trust is often mentioned as pillar for effective relationships. It is so pivotal to social capital that it should be pursued if a desirable and stable society is to be attained.

2.1.1 Antecedents of Trust

2.1.1.1 Working Hours

There are a number of literature that support a negative relationship between working for more hours and the various forms of trust. Studies that investigated the relationship between work and interpersonal trust asserted that employees who work for long hours usually to have a poorer work-life balance (Yoon & Kang, 2016). Working for long hours can disrupts employees' ability to meet their family's responsibilities which negatively affect spousal as well as parent-child trust. The effect on long working hours on trust at the organizational level is not different from the above findings. For example, a study by Celma, Martinez-Garcia, & Raya (2018) revealed that one more hour at work reduced trust in management by 1.64%. Some plausible reasons for this relationship includes emotional exhaustion, psychological stress among others.

H1: More working hours dwindle trust among citizens

2.1.1.2 Access to Technology

There are mixed results in terms of the relationship between access to technology and interpersonal trust. Studies that have found a positive relationship between the two concepts asserted that technology aids people to be in constant communication with loved ones and can also discuss important issues with ease when one can't be with the other party in person. On the negative side, technology breeds unfaithfulness. Also, spending more time on the technological gadgets can distract partners from not having intimacy (Hertlein & Ancheta, 2014). The media has become an effective tool through which information on political institutions are gathered and citizens' perception are adjusted accordingly. On one side of the coin, studies have shown that the media provide information about inefficiencies in governments and hence can lower the trust people have in the political

institutions. On the flip side, it enables citizens to participate directly in decision-making process in governance which boosts trust in the government (Ceron, 2015).

H2: Access to technology can have either a positive or negative influence on trust

2.2 Political Participation/Engagement

Political engagements are those actions or activities that aim to impact on the state directly. Though earlier researches on this social concept focused narrowly on electoral modalities such as voting and election campaigns for political parties, newer generation of studies in this arena have been widened to encompass attending public meetings; writing articles for mass media; protests or speeches and so on (Park & Perry, 2008). In addition to promoting democracy, political participation plays a central role in the social connectivity of members of the society.

2.2.1 Antecedents of Political Engagement

2.2.1.1 Working Hours

Economic theories argue that time available to workers is devoted either to working or non-working hours. Though there is no guarantee that a reduction in working hours will be translated into non-market activities, it is a likely that on the average, people will participate more in political activities when they work for less hours (Kallis, Kalush, O'Flynn, Rossiter, & Ashford, 2013).

This is evidenced in numerous studies that have revealed a negative relationship between working hours and political participation (Solt, 2008; Quintelier, 2007; Jarvis, Montoya, & Mulvoy, 2005; Róbert, Oross & Szabó, 2016). The conclusions of these studies is summarized in the response of a participant in a survey. When asked about the effect of work on her social activities, Trish, a 30 year old American Indian female responded "No, I used to before I started working. I volunteered in social activities including politics. But not since I started working. It's just too much. I don't know how people work and volunteer" (Mcbride & Sherraden, 2004).

H3: The more time citizens spend at work, the less they will partake in political activities

2.2.1.2 Access to Technology

Technologies continue to play a key role in political engagements. Some scholars view ICTs as a source of political socialization that brings citizens closer to the political discourse (Valenzuela, Park, & Kee, 2009). Though there are new forms of ICTs, the traditional media continue to be influential in mobilizing people to participate in political discussions. For instance, using a survey of 1202 respondents, Ye, Xu, & Zhang, (2017) investigated the role the media plays in political participation in modern China. The number of variables used to represent the media included reading newspapers and watching television. The numerous multiple regression estimates revealed that all the indicators motivated people to engage in general public discourse.

It is agreed among many political scientists and scholars that the impact of the internet on political activities outstrips the traditional media. This is so because the former is fundamentally different from the latter in a number of way which all increase its efficacy vis-à-vis political participation. First of all, the internet aids its users (especially the youth) to get access to new information quickly and from diverse sources. This enhances them to be well-informed citizens which boosts their confidence to participate in political discussions (Stanley & Weare, 2004). Furthermore, Social Network Sites (SNS) like Facebook and Twitter permit users to create and join groups they have common interest to deliberate on matters that concern them. These platforms increase their internal and collective efficacies which embolden them to add their voices to political matters arising (Lenzi et al., 2015).

It is not surprising why there is a burgeoning literature that supports the positive effect of internet on political participation (Valenzuela et al, 2009; Stanley & Weare, 2004; Halpern, Valenzuela, & Katz, 2017; Campante, Durante, & Sobbrio, 2017).

H4: More access to technology boost political participation

2.3 Income

2.3.1 Effect of Income on Working Hours

The relationship between income/wage and hours of work is best explained by the labor-leisure theory. The school of thought posits that the effect of income/wage depends on the magnitude of the income (IE) and substitution effect (SE). If the SE outstrips the IE, then a rise in income/wage will result into a reduction in hours of work and vice versa.

There are enormous empirical literature that backs instances where total effect of wage rise on working hours is positive. For instance, Pastore & Verashchagina (2008) explored the socio-economic factors that influenced the labor supply for females in Belarus for the period of 1996 and 2001. The study used data from the Belarusian Household Survey with a sample size of 3818 and 3878 for the 1996 and 2001 surveys respectively. The Heckman two stage approach found out that hours of work is positively related to the hourly wage rate. Explicitly, a percent increase in the wage rate augmented working hours by 0.33 in 1996 and 0.32 in 2001 for Belarusian women. Similar results were attained by Ghatak & Madheswaran (2014), Rice (2005), Bhattarai (2017), (Kabeya, Sam, & Lufuke, 2015) and Zavodny (2000) who all investigated the effect of wage on working hours in different settings.

There are, however, studies whose findings differ from the aforementioned researches. Example of such studies is by Couch & Wittenburg (2001) who used data from Current Population Survey (CPS) to explore the effect of increment of minimum wage on hours of works of teenagers (aged 16 to 19). The several estimation techniques all revealed that working hours of teens are adversely affect when there is a rise in the minimum wage. Skedinger (2011) also studied the impact of a rise in real minimum wage which is collectively agreed upon on working hours among unskilled workers in the Swedish retail sector ranging from the year 2001 to 2005. The finding indicated that soaring minimum wages caused more separations and because separated workers spent fewer hours at workplace before separated, hours of work are less affected.
H5: Income can have a positive or negative effect on working hours

2.3.2 Effect of Income on Access to Technology

The emergence of new Information and Communication technological (ICT) devices have swollen up the collection of normal goods consumers demand. A number of studies have found a positive relationship between income and the usage of these ICT devices (Adikari, 2013; Ismail & Kaleem, 2013; Nishijima, Ivanauskas & Sarti, 2017; Suárez & García-Mariñoso, 2013). One plausible explanation is the direct link between income and the demand for normal goods and services. Another reason is that an increase in income can cause workers to substitute leisure for working hours and as a result devote some of their increased non-labor hours to surf on the internet, watch television and so on. It is worth noting that there are a few studies that showed no relationship between the two variables (Gorodetsky, 2015; Madden & Coble-Neal, 2003).
H6: There is a positive effect of income on access to technology

3. Methods

3.1 Source of Data

The data set used for the analysis of this study is the sixth round of the Ghana Living Standard Survey (GLSS 6). GLSS 6 is a secondary data which concentrates on the household as the main socio-economic unit. The Ghana Statistical Service (GSS) that conducted the survey employed a two stage stratification procedure in selecting the households. First of all, the country was stratified into ten groups in accordance with the number of regions. The data covers demographic characteristics of the household members.

3.2 Measurement Instrument

Items for the measurement of the three constructs (trust, political participation and access of technology) used in the study were obtained in the GLSS 6. Participants of the survey were asked to rank their responses to trust questions on a four-point likert scale ranging from "All the time" (1) to " Not at all" (4). In the case of political participation, the respondents were asked the number of times they partook in certain political activities. The responses were also on a four-point likert scale anchored at "10 times or more" (1), "5-9 times" (2), "1-4 times" (3) and "0 time" (4). Questions on access to technology centered on how often the participants used certain technological devices in a day. Here too, the responses were on a four-point likert scale from "5 hours or more" (1), "below 5 but more than 3 hours" (2), "below 3 but more than 0 hours" (3) and "0 hours" (0). Figure 1 below summarizes the various relationships to be tested.

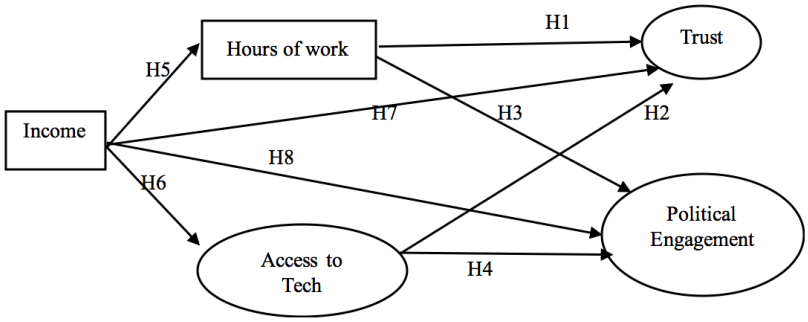

Figure 1. Research model

3.3 Issue of endogeneity

A segment of the model above suffer from endogeneity and no causal claim can be made if the anomaly is not corrected. Endogeneity occurs when the error term of a model correlates with any of the explanatory variable(s), that is $(E[\varepsilon_i \mid X_i] \neq 0)$. Causes of this problem includes simultaneity, measurement error, omitted confounding variable(s), selection biased, common-method variance and model misspecification (Antonakis, Bendahan, Jacquart, & Lalive, 2010). The part of the model where hours of work is affected by income/wage suffer from simultaneity as a result the latter variable is endogenous. Simultaneity occurs when there is reverse causality or the dependent variable reversely influences the explanatory variable. A widely accepted remedy for endogeneity is the two stage least square (2SLS) or instrumental variable estimation (Antonakis et al, 2010). The study used respondent's belongingness to a trade union as the instrument since this variable is strongly correlated with wage but does not influence employee's working hours. The error terms of the two stages were estimated to achieve a consistent results.

4. Data Analysis and Results

This study employed Structural Equation Modelling (SEM) to test the hypotheses stipulated in Fig. 1. Two stages are involved in this analytical approach. First of all, a Confirmatory Factor Analysis (CFA) was conducted to verify the validity of the measurement model. After that, a structural model analysis is used to estimate the structural relationships among constructs and test the various hypotheses.

4.1 Descriptive Statistics

The demographic profile of the 1677 participants used in the study is demonstrated in Table 1. Table 2 contained the mean, standard deviation, factor loading, Cronbach's alpha, average variance extracted and composite reliability of the constructs. It also showed the mean and standard deviation of the various measures of the constructs.

Table 1. Demographic profile of Respondents N = 1677

Variable	Categories	N (%)	Variable	Categories	N (%)
Age Cohort	16 – 25	163 (9.72)	Educational	No Educ.	12 (0.72)
	26 – 35	471 (28.09)	Background	Basic Educ.	1394 (83.12)
	36 – 45	536 (31.96)		Sec. Edu.	189 (11.27)
	46 – 55	353 (21.05)		Ter. Edu.	82 (4.89)
	56 – 65	154 (9.18)			
Gender	Male	824 (49.14)	Marital	Married	1303 (77.70)
	Female	853 (50.86)	Status	Unmar./Div.	374 (22.30)

Table 2. Mean, Standard Deviation, Factor Loading, Cronbach's Alpha, Average Variance Extracted and Composite Reliability of indicators

Construct	Mean	SD	FL	CA	AVE	CR
Factor 1: Trust				0.895	0.716	0.938
How much do you trust people in your family?	2.95	1.04	0.703			
How much do you trust people in your village?	2.37	0.97	0.948			
How much do you trust members of other ethnic group?	2.10	0.87	0.831			
How much do you trust people in the same religion?	2.19	0.89	0.903			
How much do you trust business owners and traders?	2.34	0.89	0.846			
How much do you trust politicians?	2.33	0.93	0.828			
Factor 2: Political Engagement (within the last 12 months)				0.853	0.645	0.844
How many times did you attend a town meeting?	2.87	0.97	0.698			
How many times did you express your views on the media?	2.3	0.65	0.876			
How many times did you attend political rallies?	2.47	0.77	0.824			
Factor 3: Interest in Technology				0.916	0.828	0.935
On the average, how many hours do you use of the internet?	2.90	0.30	0.942			
On the average, how many hours do you use of the PC?	2.92	0.27	0.932			
On the average, how many hours do you use of the Ipad?	2.88	0.32	0.854			

4.2 Measurement model Analysis

4.2.1 Confirmatory Factor Analysis (CFA)

A confirmatory factor analysis (CFA) was conducted by the study using Stata 14. The relevance of this analysis is to test how best our data fit the hypothesized measurement model constructed based on theory. Thus CFA is used to verify the validity of the measurement model aspect of the SEM before the structural model is estimated. It also aids to explore the convergent and discriminant validity as well as the reliability of the various constructs in the measurement model. The results showed the measurement model was a good fit given the accepted cut-off values for the various criteria (Schreiber, Stage, King, Nora, & Barlow, 2006). The ratio of Chi to degree of freedom (Chi^2/df) was 2.36 which fell below the cut-off level of 3. The root mean squared error of approximation (RMSEA), on the other hand, was 0.028 and is below the threshold of 0.08. Furthermore, the Tucker Lewis index (TLI = 0.99) and the Comparative fit index (CFI = 0.993) were above their required value of 0.90 while the Standardized root mean squared residual (SRMR = 0.027) was also below the 0.08 cut-off point. It is worth noting that all the factor loadings for the various constructs surpassed the accepted value of 0.4 and were also significant at p = 0.001 as displayed in Table 2 above (Acock, 2013). The study employed Cronbach's alpha (CA), Composite Reliability and the Average variance extracted (AVE) to test the convergent and discriminant validity of the constructs. The Cronbach's alpha values for trust (0.895), political engagement (0.853) and interest in technology (0.916) in Table 2 were all above the 0.7 minimum standard value and hence demonstrated a high internal consistency of the constructs. The values for the composite reliability for the three constructs exceeded the 0.7 benchmark while their AVEs surpassed the required value of 0.5. These results

affirmed the conclusion of the Cronbach's alpha. It can therefore be concluded that the measurement model fits the data very well and hence it is valid.

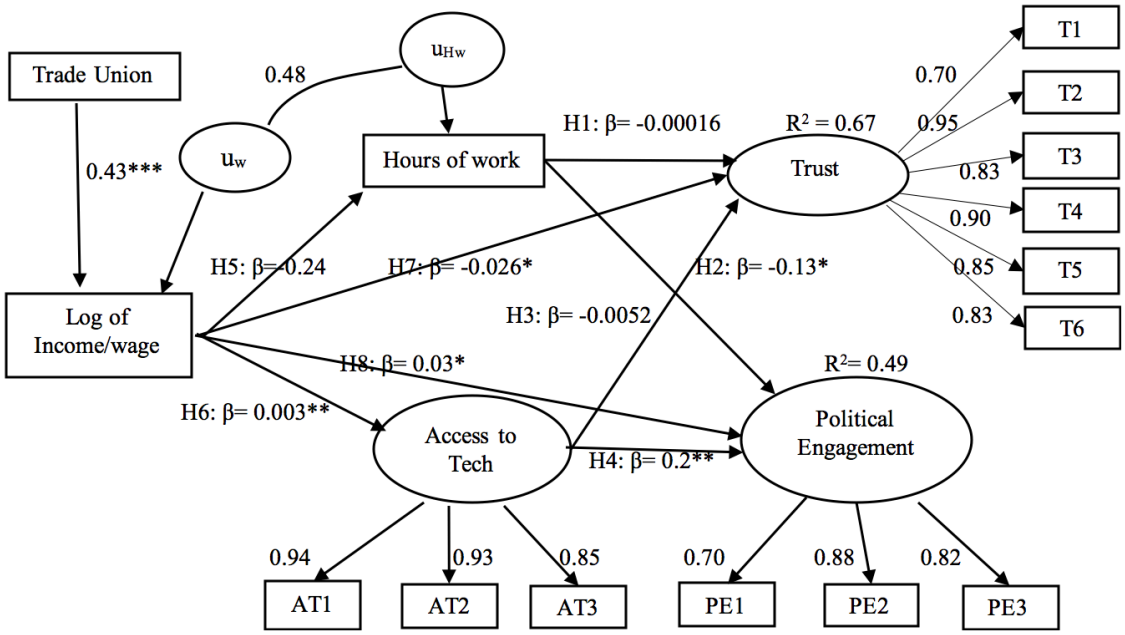

Figure 2. Structural model

4.3 Structural model analysis

Fig. 2 showed estimates of the structural relationship among the various measures and their significance levels. It was demonstrated from the figure that though income has negative effect on hours devoted to work (H5: β= -0.24, $p > 0.1$) and a positive impact on access to technology (H6: β= 0.003, $p < 0.05$), the effect on hours of work is not significant. Of the three variables (income, hours of work and access to technology) that are linked to trust, only hours of work has no significant effect on the latter. Income, access to technology, hours of work together with the covarites accounted for 67% of the total variation in trust ($R^2 = 0.67$).

It was further unearthed that income had positive and significant effect on political engagement (H8: β= 0.03, $p < 0.05$). In addition, hours of work was estimated to adversely affect participation in political activities. Lastly, the structural analysis showed that access to technology positively influenced engagement in political activities and the effect is significant (H6: β= 0.2, $p < 0.05$). Forty nine percent ($R^2 = 0.49$) of the total variation in political engagement was explained by the model.

It is important to note that the instrumental variable, that is respondent's belongingness to a trade union, strongly influence the endogenous variable (income/wage). The estimation brought to light that respondents who are members of a trade union earn more than those who are not unionized and the effect is significant at 1 percent. Also, the study computed the correlation between the error terms of income/wage and hours of work to attain consistent/unbiased estimates. It was found out that the correlation between the 2 error terms is significant figuring around 0.48.

The model is a good fit as all the fit indices met their required criteria. The ratio of chi square to degree of freedom (Chi^2/df) was 1.78 which fell below the cut-off point of 3. The root of mean squared error of approximation (RMSEA = 0.022) and standardized root mean squared residual (SRMR = 0.02) were all less than their threshold value of 0.08. Furthermore, the comparative fit index (CFI = 0.989) and Tucker Lewis index (TFI = 0.984) also surpassed their bench mark value of 0.9. It can therefore be concluded that the data is well fitted by the overall model.

5. Discussion

This study contributes to growing literature on social cohesion by exploring the mechanism through which income influences the latter. The estimations unearthed in the structural model give some major insights on how income influenced the two indicators of social cohesion which are trust and political engagement. However, the results should be interpreted with caution due to the following limitations. The study is cross sectional in nature and the unique culture of Ghana makes it difficult to generalize the findings. Also, the data did not include certain measures of trust and political participation which would have given a more appropriate estimate of the two constructs. Nonetheless, the findings uncovered in this study add to the ever-expanding empirical study on social cohesion.

First of all, the study revealed that income has both direct and indirect effects on trust. The study sought to find the influence of income on trust through two routes thus via hours of work and access to technology. Though it was found out that income does not influence trust through hours of work, the impact is significant and negative through access to technology. The implication is that trust tends to plummet among wealthier individuals due to their more access to technology. This result is consistent with the finding of Przybylski & Weinstein (2013) that with increased access to technological gadgets such as phones, internet etc. due to rise in income, intimate relationships are usually interfered with calls, texting, browsing and so on. Also, more access to technology can serve as a breeding ground for unfaithfulness and solitude. These effects can adversely affect the quality of relationship among individuals which can have a negative repercussion on trust.

Similar to the results in the case of trust, the study showed that the effect of income on political participation is both direct and indirect. Here too, the study investigated the impact of income on political participation via two paths thus through hours of work and access to technology. Similarly, the transmission through hours of work was found to be insignificant. However, it was shown that higher income boosted access to technology which also propelled participation in political activities. This result is not surprising as it dovetailed the findings of a number of studies which posited that with increased access to technology, both traditional and modern ICTs devices, citizens gain access to numerous information from diverse source which motivates them to partake in voting, attend election campaigns for political parties, public meetings, protest, contact public officials and so on.

6. Conclusion

The study succeeded in providing empirical answers for most of the hypotheses investigated. Several insightful revelations were made which can help foster social cohesion among citizens. In compliance with most literature, participation in political activities in Ghana is boosted when there is economic growth. Income, as evidenced by the estimation, positively affects engagement in politics both directly and indirectly. In contrast, the impact of economic growth on trust was negative. This disclosure can serve as a guide to policy makers that as economic growth is pursued, effective policies should be implemented to minimize the associated drop in trust level. Another key information the study revealed is the crucial role technology plays in social cohesion. Access to technology was found to influence both trust (negatively) and political participation (positively). This implies that access to technology by citizens should be given much attention in the pursuit of an effective democratic governance especially in Ghana. The results also signal to civic organizations as well as policy makers to institute appropriate measures to mitigate the adverse effect of technology on trust such as organizing community based social gathering anchored on efficient interactions and so on.

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