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Moderating Effect of Culture on the Relationship between Social Interaction and Stock Market Participation among Secondary School Teachers from Nakuru County, Kenya

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Abstract:
Culture makes individuals to behave the same way in similar situations because of the values and norms grounded in a person. This means that the overall behavior of individual investors is therefore guided by their individual culture. Culture could influence the behavior of individual investors directly and this study sought to investigate how culture could interact with social interaction in influencing individual investor stock market participation. There was need therefore to investigate the moderating effects of investment culture on the relationship between social interaction and stock market participation of secondary school teachers in Nakuru County. The study employed cross sectional survey research design. Primary data was collected using structured questionnaires from a sample of 320 teachers' selected using stratified proportionate random sampling technique. The study concludes that investment culture has a positive significant moderating effect on the relationship between social interaction and stock market participation decision (R^2 change was 0.04, $p<0.05$). This implies that investment culture interacts with social interaction thereby significantly enhancing its relationship with stock market participation of secondary school teachers in Nakuru County.

Keywords: *Culture, social interaction, stock market participation, teachers*

1. Introduction

Culture can be defined as a structure of shared values, beliefs, and attitudes that affects individual perceptions, inclinations, and conducts. Hofstede (1980) describes culture as programming of the mind exhibited in values and norms and in rituals and symbols. This programming of the mind is consistent with time meaning that the person displaying regularly same behavior in similar situations. This suggests that individuals although influenced by other factors their behavior is guided by values, beliefs and attitudes deep rooted in culture.

Culture has been observed to have significant influence on individual investor decision to participate in the stock market. Chui, Titman and Wei (2010) suggest that cross-cultural dissimilarities are related to levels of trading activity. Hens and Wang (2007) in a study showed that cultural differences are important in guiding financial decisions. Nderitu (2008) conducted a study on the influence of investor's distance and culture on stock holdings and trading for the four listed agricultural Companies at Nairobi Stock Exchange and found that cultural factors like the locality of directors have some significant influence on the shareholding of agricultural stocks listed at the Nairobi Security Exchange. These studies reveal how culture could influence the behavior of individual investors directly. However, none of the studies have shown how culture could interact with other individual investor dynamics in influencing their effects on individual investor stock market participation. There was need therefore to investigate the moderating effects of investment culture on the relationship between social interaction and stock market participation of secondary school teachers in Nakuru County. Previous study has revealed that social interaction has a positive significant relationship with stock market participation decision (Langat & Cheruiyot, 2019). This study went further to investigate whether this relationship could be moderated by culture.

In examining the moderating effect of culture on the relationship between social interaction and stock market participation among secondary school teachers the following hypothesis was tested

- H$_{o1}$: Culture of individual investors has no significant moderating effect on the relationship between social interaction of individual investors and stock market participation
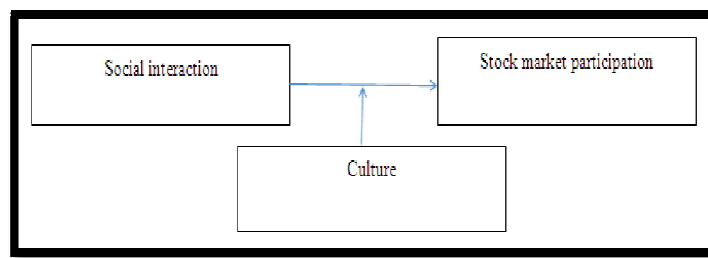
Figure 1: Conceptual Framework

2. Literature Review

Hofstede's (1980, 2001) developed a framework for cultural dimension and four dimensions of culture. The first was Individualism, the degree to which one expresses individuality meaning that personal relationships are not viewed as important. The second dimension Hofstede identified was Power Distance. These are the inequalities of power, wealth and prestige that have become acceptable by members of a society. The third dimension was Masculinity. This describes the division in roles between the two sexes, male and female. The fourth dimension was Uncertainty Avoidance, a situation where a society's members try to avoid uncertain situations.

Guiso, Sapienza and Zingales (2009) reported that cultural dissimilarities could be used to explain participation in market for stocks and other facades of investment. Similarly, Chui, Titman and Wei (2010) suggest that cross-cultural dissimilarities are related to levels of trading activity. In another study, Beugelsdijk and Frijns (2010) found that culture was significant when explaining foreign prejudice in portfolio apportionments. Hens and Wang (2007) in another study showed that cultural differences are important in guiding financial decisions. The study observed that cultural dissimilarities lead to regular deviations from rationality in decision making and specifically affects aspects of risk taking as well as in returns of stocks.

Levinson and Peng (2007) carried out an empirical study in China and the United States that investigated cultural background and its influence on economic decision making. They wanted to examine whether morality, framing and outgroup information affected financial worth and property possession judgements across the two cultures. The study revealed cultural differences influenced financial value approximations.

Jong and Semenov (2002) investigated cross country cultural dimensions of uncertainty avoidance and Masculinity effects on stock market activity. The study used the national score the dimensions of Uncertainty Avoidance and Masculinity to express these attitudes brought about by the deeply rooted norms and values. The study observed that stock markets were relatively more important for countries where inhabitants accepted more uncertainty avoidance and where they regarded competition positively (high score of Masculinity).

Zhan (2019) investigated the influence national culture has on the collective behavior across universal financial markets and the association between national culture and investor behavior and stock market instability. The study found that countries with lesser individualistic culture were expected to have a greater number of resultant stock price movements while those with high individualistic culture having comparably low number of resultant stock price motions and smaller stock market instability, and that the positive relationship between harmonized stock price motions and stock market instability is stronger for developing markets during times of financial crunch

Pirouz & Graham (2010) evaluated the influence of culture on the stock prices instability. Their findings revealed that cultural dimension of linguistic structure and cultural values influence stock market volatility. The study also revealed that this influence is moderated by the level of globalization of the countries

Anderson *et al*. (2010) investigated cultural effects on home preference and international diversification by institutional investors. The study examined the determinants of international diversification in institutionally managed portfolios from more than 60 countries. Specifically, the study examined the worldwide equity stock holdings of 25,000 institutional portfolios from above 60 countries, which in turn were invested across more than 80 countries. The study showed that investment funds for countries characterized by great uncertainty avoidance had poorly diversified foreign holdings and display greater home bias. The study also found that portfolios from countries with higher levels of masculinity and long-term orientation display lower levels of home bias. The study concluded that the economic significance of cultural variables is high and analogous in enormousness to geographic distance. Their findings suggest that a portion of the home-country prejudice is due to characteristics of culture that contrast across investor countries. This influence on foreign diversification was consistent with prior studies. Their study further brings out clearly the role that culture plays in investment. They note that culture impacts investor behavior directly and not through indirect channels such as the legal and regulatory framework. This emphasizes the need to investigate the cultural influences on individual investment behavior because if it influences the institutional investors then the same influence would be expected to be observed for the individual investor.

Beckmann, *et al.,* (2007) conducted survey on asset managers' views and behavior in the United States, Germany, Japan and Thailand. The study relied on Hofstede's four cultural dimensions and found cultural differences were most helpful in understanding country differences that could not be explained purely by economic reasoning. They study observed that the culturally different importance of herding, age, experience, gender, tracking error and research effort affect investment behavior in an sophisticated way. The study found that managers from more individualistic countries showed less behavior in herding and that the interrelation was significant. The study also found that uncertainty avoidance also has effects on investment as it is related to the magnitude of safety margin leading to the problem that asset

managers may not invest as actively as expected. Uncertainty Avoidance can be used to explain the lesser returns generated by asset managers. The study showed that since the impact of these variables are multi-faceted; the robustness of their findings should be tested with a close examination of the further consequences for each country. Nderitu (2008) conducted a study on the influence of investor's distance and culture on stock holdings and trading for the four listed agricultural Companies at Nairobi Stock Exchange. The study explored the influence of investors distance, language and culture on stock holding and trading for listed agricultural companies at Nairobi stock Exchange. The study revealed that shareholding is to a large extent not affected by distance because stock purchase decisions are not influenced by the proximity to the firms' operations. The study also found that cultural factors like the locality of directors have some significant influence on the shareholding of agricultural stocks listed at the Nairobi Security Exchange. Notably also, the study revealed that for firms whose operations were not near urban areas, the rural communities in those areas tend to be poor and as such were unable to participate in the stock market. Further, in such communities there was very little awareness about the operations of the stock market.

2.1. Social Development Theory

Lev Vygotsky advanced this theory in 1978. According to this theory, social interaction heralds development. The theory brings out the interactions that individuals have with their social cultural environment and how this impacts on the learning process. He proposes that individuals use the values that they develop from culture to mediate their social environments and when they internalize these tools it results in higher thinking. This suggests that all the actions of individual behavior are guided by the cultural values grounded in them and therefore all their actions including investment behavior will be guided by the same values. The theory was deemed relevant to the study since it was important in the investigation on the moderating effect of culture on the relationship between social interaction and stock market participation by the secondary school teachers of Nakuru County, Kenya.

3. Research Methodology

The study employed cross sectional survey research design. Data was collected from secondary school teachers from Nakuru County. The target population was 1,609 teachers from the selected sub counties of Nakuru, Molo, Njoro, Naivasha and Gilgil. Stratified proportionate random sampling was used to in the study where the sub counties represented the strata while simple random sampling was used to determine the representative sample from each stratum. Primary data was collected through the use of structured questionnaires. A pilot study was conducted and the results were used to test the instruments reliability with the help of Cronbach Alpha. The results obtained Cronbach alpha coefficient of 0.817 on culture. Validity of the instrument was tested through factor analysis using principle component analysis and all the items used to measure culture met the recommended factor loadings greater than 0.4 after varimax rotation. Hair, Babin, Anderson and Tatham (2011) assert that factor loading greater than 0.4 are acceptable.

Inferential statistics were used to analyze the data with the aid of Statistical Package for Social Scientists (SPSS) version 25. Inferential statistics such as ANOVA and regression analysis were used to analyze the data. Research hypothesis was tested at 5% significance level using the regression while F-statistic was used to measure whether the model fits the data significantly.

To determine the moderating effects, Ordinary least square (OLS) models which were models before interaction effect were compared with the moderated multiple regression (MMR) models which were models after interaction effect. The dependent variable (stock market participation) was regressed on the independent variable (social interaction) and a potential moderator introduced. The following regression model was used.

MMR equation $Y = \beta_0 + \beta_i X_i M + \beta_i X_i M\ \varepsilon$.......................................i

Where;
Y   - Stock market participation decision
Xi   - Social interaction of individual investors
β_1 - Regression coefficients for the independent variable
β_0 - Regression Constant
ε - Stochastic error term assumed to be normally distributed
M   - Moderating variable (Culture)
$X_i M$ - Interaction between the independent variable and the moderator (cross multiplication)

4. Analysis and Findings

As shown in Table 1, the R^2 changed from 0.126 to 0.166 indicating a 0.04 increase in variation of social interaction as a result of the interaction effect of the moderating variable (culture). The results also indicate that this increase was statistically significant since the *p* value of 0.014 is less than the conventional probability value of 0.05(p<0.05).

	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
						R Square Change	F Change	df1	df2	Sig. F Change
Social Interaction	1	.431[a]	.126	.111	.83558	.126	12.878	1	229	.000
	2	.456[b]	.166	.114	.83192	.004	3.017	1	228	.014

Table 1: Model Summary on Moderating Effect of Culture on the Relationship between Social Interaction and Stock Market Participation
Source: Research Data, 2019

The results on Table 2 indicate that the models were statistically significant. This implies that the coefficients of the models were not equal to zero, suggesting that the models significantly fit the data.

	Model		Sum of Squares	Df	Mean Square	F	Sig.
Social Interaction	1	Regression	8.991	1	8.991	12.878	.000[b]
		Residual	159.885	229	.698		
		Total	168.876	230			
	2	Regression	11.079	2	5.539	8.004	.000[c]
		Residual	157.797	228	.692		
		Total	168.876	230			

Table 2: ANOVA Results on the Moderating effect of Culture on the Relationship between Social Interaction and Stock Market Participation
Source: Research Data, 2019

Table 3 shows that the moderating effect of culture of individual investors on the relationship between social interaction of individual investors and stock market participation among secondary school teachers was positive and significant (β =0.292, $p<0.05$). This implies that when social interaction of individual investors increases by an additional unit, stock market participation is predicted to increase by 0.292 given that investment culture of individual investors in held constant. The beta coefficient of the moderating variable was 0.108 with a p-value<0.05, implying that culture has a significant moderating effect on the effect of social interaction of individual Investors and stock market participation decision among secondary school teachers from selected Sub Counties in Nakuru County, Kenya. Thus the null hypothesis (Ho_1) was rejected indicating that culture of individual investors has a significant moderating effect on the relationship between social interaction of individual investors and stock market participation. This implies that the contribution of social interaction to the stock market participation decision variable can be enhanced by investment culture.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.263	.296		7.643	.000
	Social Interaction	.288	.080	.231	3.589	.000
2	(Constant)	2.054	.319		6.445	.000
	Social Interaction	.292	.084	.195	3.4762	.004
	Investment Culture	.108	.062	.117	1.737	.014

Table 4: Coefficients on Moderating Effect of Culture on the Relationship between Social Interaction and Stock Market Participation
Source: Research Data, 2019

5. Conclusions and Recommendations

The study concludes that culture has a positive significant moderating effect on the relationship between social interaction and stock market participation among secondary school teachers in Nakuru County. This implies that investment culture interacts with social interaction thereby enhancing its relationship with stock market participation of secondary school teachers in Nakuru County. The implication is that social interaction does not operate independently in influencing stock market participation but rather its contribution to stock market participation can be enhanced by culture. Culture is a moderator in the relationship between social interaction of individual investors and stock market participation thereby advancing theory.

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