

The application of the concept of Nudging on the stock market and its effect on Investor participation: Evidence from Uganda

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Abstract

The purpose of this study is to examine the application of the concept of nudging on the stock market and its effect on Investor participation, using evidence from the Uganda Securities Exchange (USE). The study used a quantitative, cross-sectional design with structured self-administered questionnaires. Data was obtained from 261 investors on the USE following a simple random sampling approach. The data was analyzed using the Statistical Package for the Social Sciences (SPSS) and Analysis of Moment Structures (AMOS). Findings from the Exploratory (EFA) and Confirmatory Factor Analysis (CFA) revealed the best measures for both nudging and investor participation and established a significant positive correlation between nudging and Investor participation. The multiple regression analysis showed that nudging has a 30.1% significant impact on investor participation. The study contributes to the literature by developing items that measure the concept of nudging on the stock market, as developed from the exploratory and confirmatory factor analysis; these can be used by academics for future studies in the same area. The research informs policy regarding investor participation in the stock market because it brings to light the importance of applying the concept of nudging in improving Investor participation on the stock market.

Keywords: Nudging, Stock market

Introduction

The concept of nudging has been widely used in marketing literature with remarkable success. Nudging involves the use of cheap and easy options to encourage the performance of certain behaviour amongst individuals without them feeling pushed to perform the desired action. In their work, Thaler and Sunstein (2008) have shown that nudges work better in influencing choice patterns than traditional regulation that tends to restrict freedom of choice by imposing mandatory obligations. Hence, by integrating simple nudges in the form of reminders, availing information, and providing it in a well-fashioned manner, individuals' choice architecture surrounding a certain behaviour can be influenced for compliant action. The concept has been used to enable people to save more for their retirement, it has been used in the mortgage market to enable borrowers to avoid predatory loans and generally improves choice when shopping, enabling buyers to shop for healthier foods. However, the concept of nudging has not been used widely to observe its effects on investor participation in the stock market. Investor participation on the stock market should be expected to rise, especially given the positive equity risk premium (expected return on stocks in excess of the risk-free rate) observed in stock markets historically (Welch,

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2000; Paron, 2019). However, there is observed non-participation in both the developed and developing countries. Though participation rates have increased in recent years, the majority of households in the United States and Europe do not participate in the stock market (Merkoulova and Veld, 2022). This is due to participation costs that discourage participation in the stock market and behavioural and psychological factors as well.

In developing countries like those in sub-Saharan Africa, such as Uganda, the idea of mobilizing and channeling savings through the stock market is rather new. The country's stock market (The Uganda Securities Exchange) has been in operation for 24 years and with a total of 18 listed equities (Uganda Securities Exchange, 2025). It is not surprising that this market has only a total of 42,000 investors in both the retail and institutional markets (Businge, 2021); this accounts for only 0.19% of the potential investing public of Uganda, because the country has a total of 22,285,035 adults over the age of 18 years (World Population Review, 2022). Efforts geared towards enhancing participation have centred around mass sensitization, creation of awareness, and listing more firms on the market over the past 20 years. However, it's worth noting that previous studies done on the Uganda Securities Exchange have focused on IPO readiness (Sejjaaka, 2011), information asymmetry and stock market participation (Tumwebaze, Orobia and Kamukama, 2014), market efficiency (Emenike and Kirabo, 2018), Participation cost (Tumwebaze, Orobia, Bananuka, Bonareri and Balunywa, 2022), but none of these studies have tackled the concept of Nudging on the stock market in Uganda. Elsewhere, studies regarding investor participation have focused on predictors such as trust, ambiguity aversion (Guiso, Sapienza and Zingales, 2008); Studies on nudges' effectiveness (Mertens, Herberz, Hahnel and Brosch, 2021) and how digital nudges improve decision making (Jesse and Jannach, 2021) have been done and found to have a significant effect but have not focussed on investor participation on the stock market. Therefore, this study seeks to observe the effect of nudging on Investor participation on the Uganda Securities Exchange and thus give recommendations regarding policy and contribute to the literature by highlighting whether nudging as a concept can successfully be used to improve investor participation on the stock market.

Investor participation in the stock market is critical for the economic development of any nation. The Uganda Securities Exchange is one such market where stocks and other instruments are traded (Birungi and Muthoni, 2021). The market has been in operation for the last 24 years, but has only attracted a total of 42,000 investors (both retail and institutional) compared to the adult population of Uganda, which is 25,800,000 people (UBOS, 2024; Worldometer, 2025). The Country has a potential investing public of 25,285,035 adults above the age of 18 years (Uganda Securities Exchange 2019; World Population Review, 2022). This means that the country's stock exchange has only attracted 0.19% of the potential investing public, a figure that leaves a lot to be desired. The concept of nudging has been successfully used in the mortgage and pension markets to enable improved decision-making on the side of the consumers (Thaler and Sunstein, Nudge: The Final Edition, 2021). It is therefore paramount to understand how the concept of nudging can be used and to what extent it can improve investor participation on the Uganda Securities Exchange by *Q1*. Establishing the key measures of Nudging and Investor participation on the USE, *Q2*. Determining the relationship between Nudging and Investor participation on the USE and *Q3*. Establishing the effect of Nudging on Investor participation on the USE.

Literature Review

Nudging

The concept of nudging was first advanced by Richard Thaler and Cass Sunstein (2008) in their work titled “Improving Decisions About Health, Wealth and Happiness”. In this work, the scholars advanced that humans use various rules of thumb or heuristics when thinking about complicated problems. This is because human beings are too busy and life in itself is too complicated for each individual that people can not spend time analysing everything. Thaler and Sunstein note that the rules of thumb used by individuals include anchoring, a process of using an anchor value or relying heavily on one piece of information when faced with complex decision making under circumstances of insufficient information (Cho, Wesslen, Karduni, Santhanam and Shaikh, 2017; Wilson, Houston, Etling and Brekke, 1996), availability of a particular phenomenon and representativeness, a process of cognitive evaluation where an individual relies on similarities to make judgement when making decisions with insufficient data at hand (Kahneman and Tversky, 1973); for example “*we would think that a 6 foot 8 inch African American man is more likely to be a professional basketball player than a 5 foot 6 inch Jewish man because there are many tall black basketball players and not many Jewish ones*” (Thaler and Sunstein, 2008). Thus, in order to nudge individuals, these heuristics need to be put into consideration so that desired outcomes in decision-making can be obtained. Regarding representativeness and anchoring, information needs to be laid out in a fashion that enables decision making towards the desired choice, thus the idea of the “Information architecture”. Information should be displayed using an architecture that facilitates optimal decision-making, thereby enabling individuals to adopt desired behaviour. Availability of a particular phenomenon is also critical because people’s adoption of a particular behaviour is dependent on available supporting information about that particular phenomenon. Individuals are more likely to buy earthquake insurance after hearing about a recent earthquake on the news, for example. Therefore, “Information Availability” is key in enabling people to adopt certain behaviour. The use of “Constant reminders” will also achieve the desired outcomes of adoption because people act on information that is provided to them, empowering them to make a particular decision.

Investor participation

Stock market participation is a term that has been widely used amongst finance scholars with varying perceptions of what the term actually specifies. Tumwebaze, Orobia and Kamukama (2014) define the stock market participation concept as companies that access public equity markets. Hong, Kubik and Stein (2004), in their study of social interaction and stock market participation, look at stock market participation as the participation of households on the stock market. Gumbo and Sandada (2018), in their study in Zimbabwe, take stock market participation as the participation of individual investors on the stock market; this paper takes this idea adopted by Gumbo and Sandada (2018), regarding stock market participation, and specifically qualifies it as Investor participation. This paper defines Investor participation as the access by individual investors to investment products offered at the stock market.

Measures of Nudging and Investor Participation:

Reminders are commonly used as nudges as they curb forgetfulness by bringing to the fore a particular task or decision that requires an individual’s attention and thus facilitate action and behavioral change (Damgaard and Gravert, 2018). Reminders need to be cheap, meaning that they should not be designed in such a way that they cause the recipient to feel pressured to comply,

i.e., they should be designed in such a way that they can be ignored by the recipient. This is what Sunstein (2014) calls a soft paternalism that does not interrupt freedom of choice. The scholar further asserts that nudges should be transparent rather than hidden and covert because, unlike bans and mandates, nudges avoid coercion; therefore, any manipulation or trickery that is not subject to public scrutiny should be avoided. Information availability is critical in the facilitation of nudging because without information being availed, individuals are generally unempowered in making decisions. More than that, when individuals are provided with information regarding a particular idea or activity, they can be nudged towards adopting that idea or participating in that particular activity. Quigley (2013) gives an example of how cycling to work would create a less polluted environment and enable individuals to exercise, thus benefiting their health. Thus, if the government would like the adoption of this type of behavior, then the provision of more bicycles in the city would help people to adopt without eliminating other options, such as taking a bus. More to that, when people see others riding, they will be encouraged and prompted to ride too.

Information architecture looks at the way information is laid out, designed, or presented in order to facilitate positive decision-making while respecting the freedom of choice of the recipient. A choice architect is an important agent in facilitating nudging because he/she takes on the responsibility of organizing information in such a context (architecture) that enables decision making (Thaler, Sustein and Balz, 2012). The context in which individuals choose and make decisions is important because context itself does influence the way individuals choose and make decisions; thus, a choice architect designs information and its context with intent, for example, the way products are laid out in a supermarket to encourage choice and foster decision making.

Relationship between Nudging and Investor Participation:

Cynthia (2020) notes that there aren't many studies regarding nudges in the financial markets; however, current studies have looked at i) adjusting how choices regarding investments are presented to investors and ii) provision of information to investors in a special way, especially tapping into the potential of nudging. The scholar, however, still leaves room for scepticism regarding the notion of pushing investors to the desired choice and its implications. Newall and Bradley (2015), in their work "Nudging investor big and small towards decision", observe that small and large investors react differently to nudging interventions and thus a one-size-fits-all approach may not enable optimal decision making. It should also be noted that investors generally suffer from the pea nut effect (Weber and Chapman, 2005) that leads to poor decision making, because individuals tend to discount actions that incur small costs or make small gains, which, over time, result in serious consequences for repeated behaviour. A remarkable example of how nudges can be used to encourage investing, in particular, is one cited by Thaler (2018), where citizens were offered over 450 mutual funds to choose from while assembling their portfolios. A default fund was established by the government, where typically investors were assigned both those who chose and those who didn't. The government went ahead to launch a de-campaigning advertisement agenda to discourage investors from investing in the default fund. Other named funds also went ahead to advertise to the public. It is noted that during this process of nudging, the advertisement campaign pushed two-thirds of investors to manage their own portfolios and participate more in the market, whereas only a third remained with the default fund. Over the years, as these advertising campaigns dried out, a lower participation of new investors was registered. Behavioural psychologists have observed that human behaviour can many times be irrational due to biases such as anchoring, representativeness, and availability, among others.

Bucher-Koenen and Zieglmeyer (2014) assert that nudges need to be created while targeting those biases so that irrational behaviour can be positively exploited and thus minimised in the market. There isn't a lot of literature in the area of the relationship between nudging and investor participation; however, the studies cited above show a plausible positive relationship regarding nudging and investor participation on the stock market.

The effect of Nudging on Investor Participation

The extent to which nudging impacts investor participation is worth testing, especially given the fact that many scholars realize its benefits in enabling people to make decisions. Some scholars think that nudging may hinder individuals' autonomy because of the pressure it could exert on individuals, and that the type of nudge in terms of persuasiveness and choice satisfaction will affect individuals' autonomy (Wachner, Adriaanse and De Ridder, 2020). It is thought that when nudges are done with transparency, they do benefit the decision maker's autonomy (Thaler and Sunstein, 2008); however, they tested the effect of transparency on autonomy and found that transparency was neither required nor necessary to safeguard autonomy in decision making (Wachner, Adriaanse and De Ridder, 2020). In their work on the hidden costs of nudging, Damgaard and Gravert (2018) observe that the use of constant reminders as nudges is likely to increase the annoyance costs, which are psychological costs such as guilt, perceived pressure, and practical costs, i.e., the attention and time reminders demand. This causes people to unsubscribe from the reminder list in order to minimize annoyance costs in the future and consequently lose the opportunity. The effect of nudging does have positive effects; however, it could also have its downside, as already discussed. In this paper, the researcher will test the effect of nudging on investor participation, thereby contributing to the literature by explaining the role Nudging plays insofar as Investor participation on the Uganda Securities Exchange is concerned.

Methods

The sample included 261 investors on the Uganda Securities Exchange from all brokerage houses. The sample was obtained using the Krejcie and Morgan (1970) approach; the Uganda Securities Exchange has 42,000 investors (Businge, 2021) and according to Krejcie and Morgan (1970), this population has an equivalent sample of 380 respondents. The study had a valid response rate of 67% after considering properly filled questionnaires, and adopted a simple random sampling approach where all respondents had an equal chance of being included in the study. Data was collected from investors through their brokerage houses. Table 1 highlights investor characteristics, including the broker mostly traded with, the major security traded, gender, age, and nature of occupation. Data was collected using a structured questionnaire with a five-point Likert scale with a continuum of 1-5, according to Creswell (2014), is an appropriate tool for large samples. The scale is selected because it allows a respondent to register the degree of agreement with each statement as suggested by (Likert, 1961). The data were assessed for reliability and validity, and the variables were found to meet the reliability and validity criteria of 0.6 and 0.5, respectively (Creswell, 2005; Creswell, 2010).

Table 1: Investor Characteristics

Variable (n =261)	Category	Frequency	Percent
Broker mostly traded with	Baroda Capital Markets Uganda Limited	27	10.3
	Standard Bank Group	29	11.1
	Equity Stock Brokers Uganda Limited	32	12.3

	Dyer and Blair	17	6.5
	Crested Capital	122	46.7
	UAP Financial Services	34	13.0
	Total	261	100.0
Major Security traded	Shares	190	72.8
	Bonds	29	11.1
	Treasury Bills	33	12.6
	Unit Trusts	9	3.4
	Total	261	100.0
Gender	Male	166	63.6
	Female	95	36.4
	Total	261	100.0
Age	20-25 years	42	16.1
	26-30 years	78	29.9
	31-35 years	71	27.2
	36-40 years	32	12.3
	41 years and above	38	14.6
	Total	261	100.0
Nature of occupation	Business Owner	76	29.1
	Engineer	25	9.6
	Health Services	33	12.6
	Educational Services	27	10.3
	Accountant	50	19.2
	Security Services	8	3.1
	Others	42	16.1
	Total	261	100.0

Source: Primary data

Table 2 highlights the results of the reliability and validity of the questionnaire adopted for the study. The data was analyzed using Statistical Package for Social Sciences ver. 25 and Analysis of Moment Structures (AMOS) ver. 23 and research objectives answered using the following techniques: objective 1) To establish the key measures of Nudging and Investor participation on the USE was answered using Exploratory and Confirmatory factor analysis. Objective 2) To determine the relationship between Nudging and Investor participation on the USE was answered using Pearson's correlation coefficient. Objective 3) To establish the effect of Nudging on Investor participation on the USE was answered using Regression analysis.

Table 2: Reliability and Validity

Variable	No. of items	Reliability (Cronbach's alpha)	Validity (Average of factor loadings)
Investor Participation	11	0.799	0.614
Nudging	12	0.838	0.693

Results

To establish the key measures of Nudging and Investor participation on the USE, Exploratory factor analysis was applied. The data were tested for sampling adequacy to proceed with further tests, including EFA, CFA, and others. Table 3 shows the results of KMO and Bartlett's test of sphericity for sampling adequacy. A KMO value above 0.6 and Bartlett's test of sphericity with a significant p value below 0.01 show that the sample is adequate for factor analysis, as indicated in the results above.

Table 3: Sampling adequacy test

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.835
Bartlett's Test of Sphericity	Approx. Chi-Square 2409.273
	Df 300
	Sig. 0.000

Table 4 highlights items retained from the EFA, showing only items that met a factor loading of 0.5. The findings in Table 4, extracted from the Exploratory Factor Analysis, show the acceptable measures of Nudging and its adopted constructs (Information Architecture, Information Availability, and Constant reminders); This is also true for Investor Participation and its adopted constructs (Trading frequency and Financial Sophistication). It is worth noting that the factor analysis reveals that the above questions adopted in the questionnaire are reliable measures for Nudging and Investor Participation as they are above the communality threshold of 0.5 (MaCallum, Widaman, Zhang, & Hong, 1999; MacCallum, Widaman, Preacher and Zhang, 2001).

Table 4: Results from Exploratory factor analysis

Variable/ Constructs	Measurement items	Factor Loadings
Nudging (NG)		
Information Architecture (IL)	The information on investing on the Uganda securities exchange is easy to understand (IL2)	0.850
	Information I have previously obtained on investing on the Uganda Securities Exchange was self-explanatory (IL3)	0.755
	I get directions or guidelines on how to invest in products on the Uganda Securities Exchange (IL1)	0.733
	Information on investing on the Uganda Securities Exchange is normally laid out in an appealing and inviting way (IL4)	0.675
	Radio, TV programs, Shows, and online media on investing in the Uganda Securities Exchange are normally entertaining (IL5)	0.525
Information Availability (IA)	I once picked up a brochure on investing on the Uganda Securities Exchange randomly (IA4)	0.754
	I have seen a Billboard, TV program, video, or Clip	0.659

	on social media on investing on the Uganda Securities Exchange (IA5)	
Constant Reminders	I have read a billboard or any other reminder prompting me to invest on the Uganda Securities Exchange (CR5)	0.521
	The investment products offered at the stock market are always communicated to me (CR3)	0.798
	I receive reminders encouraging me to invest (CR1)	0.772
	There are times I have made an investment decision after receiving a reminder from my broker (CR2)	0.742
	I have seen a program on TV or social media reminding me to invest on the Uganda Securities Exchange (CR4)	0.541
Investor Participation		
Trading frequency	Hardly does a period of three months pass by without making a trade on the Uganda Securities Exchange (TF2)	0.737
	I always find a buyer or seller at a reasonable price on the market (TF1)	0.698
	The market avails the necessary liquidity for me to buy and sell when I need to (TF3)	0.616
	I invest to make returns on my share price, mainly and not just to earn a dividend (TF4)	0.575
	My investment goals are flexible enough to enable me to trade frequently (TF5)	0.570
Financial Sophistication	I have a mix of securities in my portfolio including shares, bonds, T-Bills, etc. (FS2)	0.558
	I consider fees and commissions before I can buy or sell a given security (FS5)	0.667
	I have reliable metrics I follow when choosing to sell or buy (FS1)	0.654
	I have a good understanding of concepts like inflation return on equity, discounting, and compounding (FS3)	0.572
	There was never a time I looked for information on a particular security and didn't obtain such information (IA3)	0.566
	There are public places where information regarding investing on the market can be obtained (IA1)	0.542

Additionally, Figure 1 shows results from the confirmatory analysis highlighting factor loading and regression weights for each item under the latent variables of trading frequency, financial sophistication, constant reminders, information availability, and information architecture.

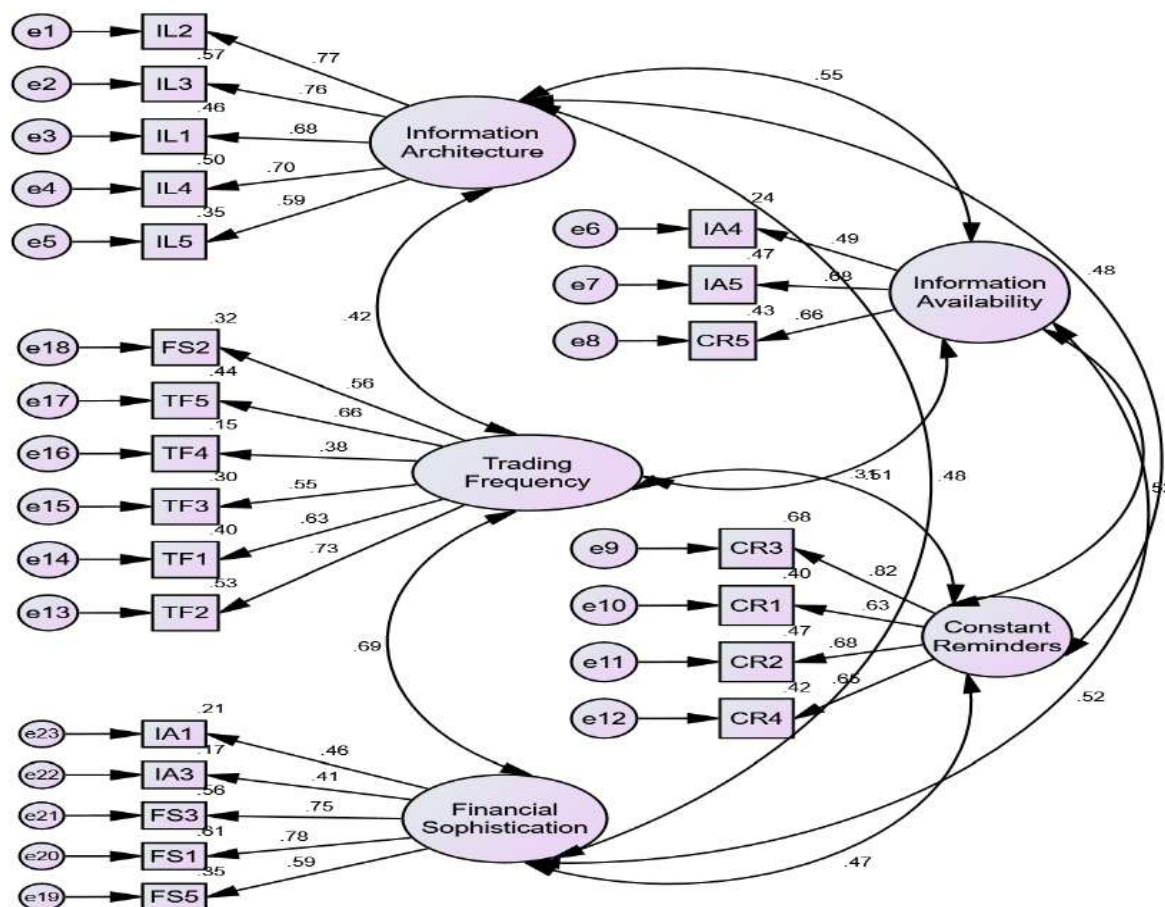


Figure 1: Results from Confirmatory factor analysis

Table 5 details the results of the Confirmatory Factor Analysis of Nudging and Investor Participation with latent variables and items. The results from the Confirmatory factor analysis, as seen in Figure 1 and Table 5, indicate that constructs with significance ($p > 0.001$) under each variable; these are highlighted under the p-value column. Table 6 indicates items that have been retained and excluded after the confirmatory factor analysis, and those that have been excluded.

Table 5: Results from Confirmatory Factor Analysis

Item		Construct	Estimate	S.E.	C.R.	P	Label
IL5	<---	Information Architecture	1.000				
IL4	<---	Information Architecture	1.110	.130	8.517	***	par_1
IL1	<---	Information Architecture	1.043	.126	8.309	***	par_2
IL3	<---	Information Architecture	1.396	.157	8.905	***	par_3
IL2	<---	Information Architecture	1.204	.134	9.009	***	par_4
CR4	<---	Constant Reminders	1.000				
CR2	<---	Constant Reminders	1.078	.121	8.878	***	par_5
CR1	<---	Constant Reminders	.909	.108	8.380	***	par_6
CR3	<---	Constant Reminders	1.201	.122	9.833	***	par_7

Item		Construct	Estimate	S.E.	C.R.	P	Label
TF2	<---	Trading Frequency	1.000				
TF1	<---	Trading Frequency	.729	.082	8.939	***	par_8
TF3	<---	Trading Frequency	.587	.075	7.858	***	par_9
TF4	<---	Trading Frequency	.440	.079	5.556	***	par_10
TF5	<---	Trading Frequency	.806	.087	9.310	***	par_11
FS2	<---	Trading Frequency	.796	.099	8.025	***	par_12
FS5	<---	Financial Sophistication	1.000				
FS1	<---	Financial Sophistication	1.454	.166	8.780	***	par_13
FS3	<---	Financial Sophistication	1.266	.147	8.632	***	par_14
IA3	<---	Financial Sophistication	.620	.112	5.549	***	par_15
IA1	<---	Financial Sophistication	.805	.133	6.054	***	par_16
CR5	<---	Information Availability	1.000				
IA5	<---	Information Availability	.959	.130	7.385	***	par_17
IA4	<---	Information Availability	.833	.137	6.104	***	par_18

Table 6 finally highlights items that were retained as measures of Nudging and Investor participation, as shown under each latent construct. It is worth noting for policymakers that to facilitate the nudging of investors and investor participation, the items retained above are essential and should be put into consideration, while those that have been excluded can be ignored.

Table 6: Retained and excluded items from the Confirmatory Factor Analysis.

Construct	Items retained	Items Excluded
Information architecture	I get directions or guidelines on how to invest in products on the Uganda Securities Exchange (IL1)	Radio, TV programs, Shows, and online media on investing in the Uganda Securities Exchange are normally entertaining (IL5)
	The information on investing on the Uganda securities exchange is easy to understand (IL2)	
	Information I have previously obtained on investing on the Uganda Securities Exchange was self-explanatory (IL3)	
	Information on investing on the Uganda Securities Exchange is normally laid out in an appealing and inviting way (IL4)	
Constant reminders	I receive reminders encouraging me to invest (CR1)	I have seen a program on TV or social media reminding me to invest on the Uganda Securities Exchange (CR4)
	There are times I have made an investment decision after receiving a reminder from my broker (CR2)	

	The investment products offered at the stock market are always communicated to me (CR3)	
Trading frequency	I always find a buyer or seller at a reasonable price on the market (TF1)	Hardly does a period of three months pass by without making a trade on the Uganda Securities Exchange (TF2)
	The market avails the necessary liquidity for me to buy and sell when I need to (TF3)	
	I invest to make returns on my share price mainly, and not just to earn a dividend (TF4)	
	My investment goals are flexible enough to enable me to trade frequently (TF5)	
	I have a mix of securities in my portfolio, including shares, bonds, T-Bills, etc. (FS2)	
Financial Sophistication	I have reliable metrics I follow when choosing to sell or buy (FS1)	I consider fees and commissions before I can buy or sell a given security (FS5)
	I have a good understanding of concepts like inflation, return on equity, discounting and compounding (FS3)	
	There was never a time I looked for information on a particular security and didn't obtain such information (IA3)	
	There are public places where information regarding investing on the market can be obtained (IA1)	
Information Availability	I have once picked up a brochure of investing on the Uganda Securities Exchange randomly (IA4)	I have read a billboard or any other reminder prompting me to invest on the Uganda Securities Exchange (CR5)
	I have seen a Billboard, TV program, video, or Clip on social media on investing on the Uganda Securities Exchange (IA5)	

*To determine the relationship between Nudging and Investor participation on the USE:
Correlation analysis*

Table 7 highlights the results from the correlation analysis using Pearson's correlation approach to determine the relationship between the independent and dependent variables.

Table 7: Pearson's Correlations

	1	2	3	4	5	6	7
Information Architecture (1)	1						
Information Availability (2)	.397**	1					
Constant Reminders (3)	.425**	.387**	1				
Trading Frequency (4)	.357**	.361**	.283**	1			
Financial Sophistication (5)	.440**	.386**	.388**	.522**	1		
Nudging (6)	.764**	.786**	.776**	.430**	.520**	1	
Investor Participation (7)	.455**	.428**	.383**	.878**	.867**	.543**	1

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

The results in Table 7 reveal that Nudging has a positive correlation of .543** with Investor participation, and it is significant. The constructs of nudging: Information Architecture, Information Availability, and Constant Reminders have a .455**, .428**, and .383** respective correlation with investor participation. The results show that it is important to nudge investors through the use of better Information architecture, Information availability, and constant reminders, therefore enabling better participation on the Uganda Securities Exchange. However, it can be noted that under the constructs of Nudging, Information Availability, Information Architecture, and Constant reminders show a strong positive correlation respectively in that descending order. Highlighting the level of importance when attempting to nudge investors to increase investor participation on the stock market.

Relationship between Nudging and Investor participation on the USE

Table 8 is the regression model showing the results for multicollinearity between constructs of nudging and Investor participation. The results in Table 8 indicate that the assumptions for multicollinearity have been met by the independent variables because their Tolerance tests are above 0.1 and their Variance Inflation Factors are below the recommended 10. This therefore indicates that the independent variables are independent of each other, and furthermore, their correlations are below the recommended 0.8, as shown in the correlation column. Therefore, the independent variables are unique and not the same, thus making them fit for regression analysis.

Table 8: Regression Model

Model		Coefficients ^a						Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF	
		B	Std. Error	Beta					
1	(Constant)	1.162	.212		5.483	.000			
	Information_Architecture	.267	.056	.286	4.762	.000	.756	1.323	
	Information_Availability	.203	.048	.251	4.261	.000	.784	1.276	
	Constant_Reminders	.144	.052	.164	2.751	.006	.762	1.311	

a. Dependent Variable: Investor_Participation

Table 9 is the regression model showing the results of the effect of Nudging on Investor participation on the USE while controlling for demographic variables. Table 9 shows the regression model for Nudging and Investor participation while controlling for demographic characteristics of the investor, such as age, level of education, working experience, and investment experience. The table reveals that age, working experience, and Level of Education are non-significant in the relationship between Nudging and Investor participation in that decreasing order of magnitude. While Investment Experience is significant in the relationship between Nudging and Investor participation.

Table 9: Regression Model Summary

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.625	.262		2.386	.018
Age	.025	.058	.038	.429	.668
Level of Education	.131	.053	.136	2.451	.015
Working Experience	-.114	.062	-.185	-1.838	.067
Investment Experience	.195	.062	.220	3.155	.002
Nudging	.618	.060	.522	10.237	.000

a. Dependent Variable: Investor Participation

Results in Table 10 reveals that changes in Investor participation can only be explained by 30.1% of changes in Nudging on the Uganda Securities Exchange. However, it can be noted that Information Availability, Information Architecture, and Constant reminders are correlated with Investor participation in that order of decreasing magnitude, as shown by their betas reflected in Table 8 above.

Table 10: Model Summary

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.548 ^a	.301	.292	.65423	.301	36.815	3	257	.000
a. Predictors: (Constant), Constant Reminders, Information Availability, Information Architecture									

Discussion of Findings

To establish the key measures of Nudging and Investor participation on the USE:

The items from the questionnaire that were retained as key measures of Nudging and Investor participation in Table 6 are in line with what Thaler, Sustein and Balz (2012) advocate for, that a choice architect is necessary in designing effective nudges because the choice architect creates the environment in which decisions are made. Thaler and Sunstein (2021) observe that constant reminders significantly impact decision-making in areas like health care, finance, and environmental conservation. The findings in this study reveal that reminders are also important for the stock market, as seen in items retained in Table 6. The construct of Information availability is also significant because items retained in Table 6 highlight the need to provide information to the investor. This is in line with the findings of Thaler and Sunstein (2008), who advocate for making use of the availability heuristic that individuals face because they tend to overestimate the importance of information that is readily available. Thus, nudges can effectively be used as the study has shown in the key measures provided in Table 6. The measures for Investor participation and its latent variables of trading frequency and financial sophistication revealed in Table 6, show indicators that investors regard as important when participating on the USE. The findings are in line with Mahendrarajah, Khaladdin and Satchit (2024), who allude that trading frequency infers trading volumes and volatility on the market. Measures of financial sophistication are laid out in Table 6, highlighting their importance insofar as measuring overall investor participation on the stock market; these findings are corroborated by Muhammad, Muhammad and Siddiqui (2020).

To determine the relationship between Nudging and Investor participation on the USE:

The positive significant relationship between Nudging and Investor participation, as seen in Table 7 above, reveals that the Nudge theory of Thaler and Sunstein (2008), Thaler, Sustein and Balz (2012), Thaler (2018), and Thaler and Sunstein (2021) is critical when designing communication channels to better facilitate investor participation on the stock market. These should focus on constant reminders, information availability, and information architecture as highlighted in Table 7 above.

To establish the effect of Nudging on Investor participation on the USE:

The findings in Table 9 above reveal that, keeping other factors constant, variances in Investor participation on the USE can be explained to a significant extent by Nudging as a concept. This highlights that this concept should not be taken for granted because it can be used effectively to improve participation rates on the USE. These findings are corroborated by behavioral studies from Thaler and Sunstein (2008), Thaler, Sustein and Balz (2012), Thaler (2018), Wachner, Adriaanse and De Ridder (2020), Cynthia (2020), and Thaler and Sunstein (2021). However,

nudges need to be applied in such a way that individuals' autonomy is not violated, as noted by Wachner, Adriaanse and De Ridder (2020), and Thaler (2018), the father of nudges.

Implications

The research has identified the key measures of Nudging and Investor participation that can be used when studying the Nudging concept and Investor participation in stock markets of sub-Saharan Africa. The correlation results in the second objective highlight that Nudging has a strong positive correlation with Investor participation, and therefore the concept of nudging can be effectively used to foster investors for better participation on the stock market. The regression analysis in the third objective shows that Nudging significantly impacts investor participation on the stock exchange. Therefore, it is important to keep in mind the concept of nudging when fostering investor participation on the stock market, keeping in mind that information availability is of greater consequence, followed by information architecture and constant reminders.

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