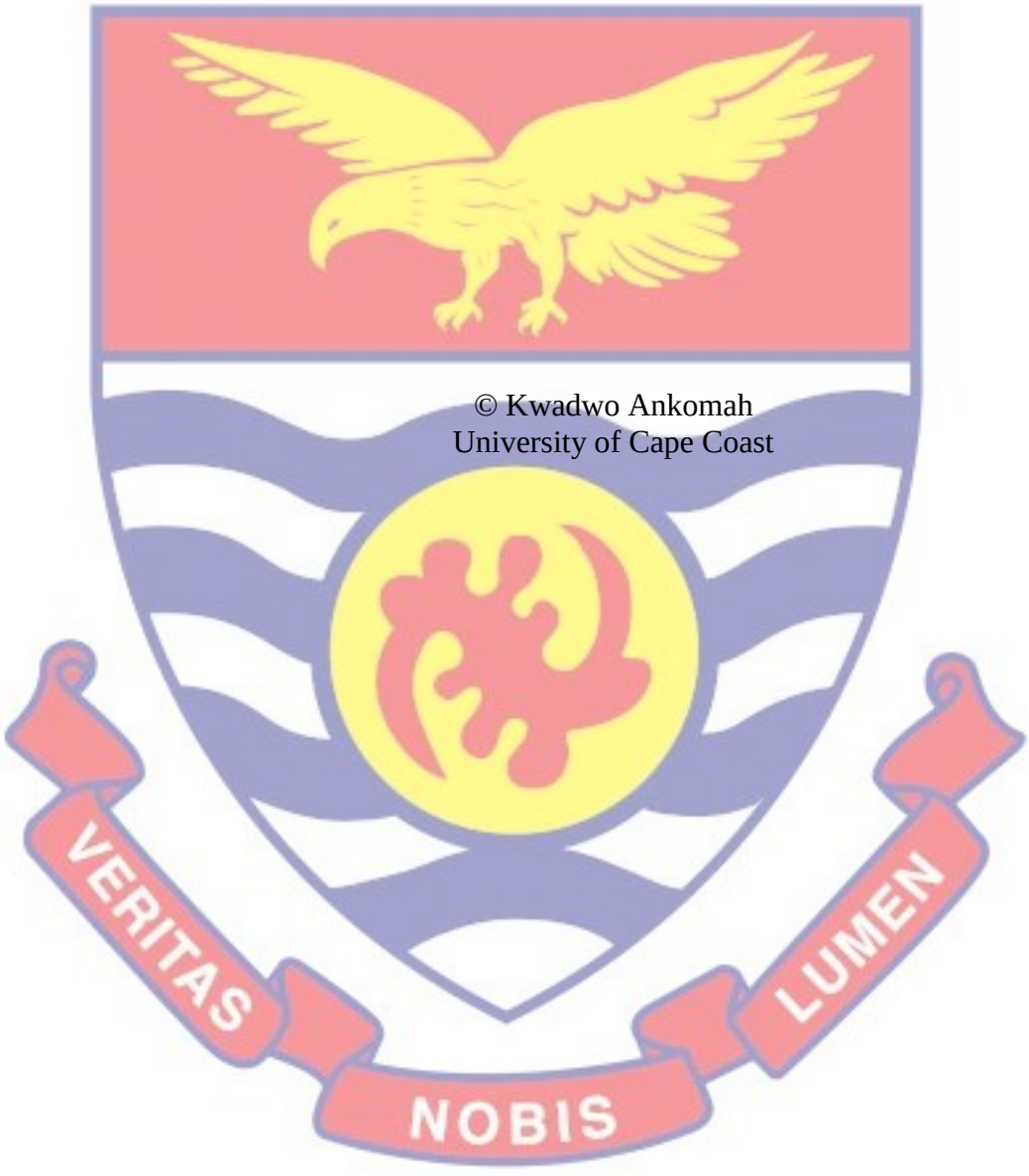
UNIVERSITY OF CAPE COAST

# CULTURE ADHERENCE, PERSONAL FINANCIAL BEHAVIOUR AND INVESTMENT DECISION MAKING

KWADWO ANKOMAH

2022



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# CULTURAL ADHERENCE, PERSONAL FINANCIAL BEHAVIOUR AND INVESTMENT DECISION MAKING

BY

KWADWO ANKOMAH

Thesis submitted to the Department of Finance School of Business of the College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Doctor of Philosophy degree in Business Administration

AUGUST 2022

# DECLARATION

## Candidate's Declaration

I hereby declare that this is the result of my own original research and that no part of it has been presented for another degree at this university or elsewhere.

Candidate's Name: Kwadwo Ankomah

Signature …… Date……

## Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised per the guidelines on supervision of thesis laid down by the University of Cape Coast

Principal Supervisor's Signature…… Date ……

Professor Anokye Mohammed Adam

Co-supervisor's Signature…… Date……..

Dr. Camara Kwasi Obeng

## ABSTRACT

The complexities of the global financial market have made investment decisions very critical in this fast-paced global world. As a result of these complexities, investment decisions are always affected by psychological and behavioural biases. These biases tend to affect the prices and performance of financial securities being offered for sale on the market. This study aims to investigate the mediating role of personal financial behaviour on the relationship between culture and investment decision-making. A quantitative approach was used for the study, and a systematic sampling technique was used to gather cross-sectional data from 476 respondents. The data was analysed using the Structural Equation Model (SEM) technique by using SmartPLS 3 software. The analysis of the SEM proved that culture has a significant and positive impact on personal financial behaviour. It also revealed that personal financial behaviour has a positive and significant influence on investment decision-making. However, on the mediation role of personal financial behaviour on the relationship between culture and investment decision-making, only risk tolerance was found to be significant. With the exception of income, all the demographic factors which were used as moderators for the relationship between personal financial behaviour and investment decision-making were insignificant. According to the study, culture can mediate the relationship between personal financial behaviour and investment decision-making. The study recommended that government considers the individual investor's cultural lineage when coming out with investment policies.

**KEY WORDS**

Cultural adherence

Culture

Demographic characteristics

Financial literacy

Investment decision making

Risk perception

Risk tolerance

## ACKNOWLEDGEMENTS

I would like to express my sincere and profound gratitude to my supervisors, Prof. Anokye Mohammed Adam and Dr. Camara Kwasi Obeng, for their invaluable contributions, guidance, directions and suggestions, and also for creating a cordial and congenial environment for this work to be completed. I also appreciate the sacrifice, patience, love, care, and support of my family during the period of my study, without which I would not have been able to complete this work. My genuine gratitude also goes to Professor John Gartchie Gatsi, Professor Daniel Agyapong, and to all the lecturers in the School of Business. My final thanks go to my colleagues especially, Patrick Ofori-Oppong, Salomey Ofori Appiah, Jacob Dapilah Nabong, Kojo Twum, Zakaria Sulemana, and all my coursemates.

**DEDICATION**

My sons, Kofi Atru Ankomah and Kofi Wirekoh Ankomah

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| | |
|---|---|
| AMA | Accra Metropolitan Assembly |
| CA | Cultural Adherence |
| CSE | Colombo Stock Exchange |
| CMB | Common Method Bias |
| CFA | Confirmatory Factor Analysis |
| CFI | Comparative Fit Index |
| DC | Demographic Characteristics |
| EFA | Exploratory Factor Analysis |
| EUT | Expected Utility Theory |
| FL | Financial Literacy |
| GDP | Gross Domestic Product |
| GSS | Ghana Statistical Service |
| GSE | Ghana Stock Exchange |
| IDM | Investment Decision Making |
| NEG | Non-Economic Goal |
| NPLs | Non-Performing Loans |
| NBFIs | Non-Bank Financial Institutions |
| NSE | Nairobi Stock Exchange |
| OECD | Organization For Economic Co-Operation And Development |
| RCI | Religious Commitment Inventory |
| PLS-SEM | Partial Least Square-Structural Equation Model |
| PSE | Pakistan Stock Exchange |
| PPP | Purchasing Power Parity |

| | |
|---|---|
| PFI | Parsimonious Fit Index |
| RP | Risk Perception |
| RT | Risk Tolerance |
| SDIs | deposit-taking institutions |
| SSNIT | Social Security and National Insurance Trust, |
| SEM | Structural Equation Modeling |
| SSA | Sub-Saharan Africa |
| SEM | Structural Equation Model |
| SDG | Sustainable Development Goals |
| UN | United Nations |

# CHAPTER ONE

## INTRODUCTION

The swift development, progression and expansion in the world of business have made the financial market very complex and increased competition among the players. It is therefore important for investors to know the market and securities being offered to help them evaluate the potential returns and associated risk (Alaaraj & Bakri, 2020). It is therefore expected that individuals will be proactive and make wise investment decisions in order to keep up with the rising cost of living in today's world economy (Akims & Jagongo, 2017). However, as the number and complexity of accessible financial assets increases, the financial decision-making process of investors has become "inconsistent" and "irrational" (Tomer, 2016). According to the literature, these inconsistencies and irrational decisions are caused by psychological and cognitive bias (Awais, Laber, Rasheed & Khursheed, 2016; Basta, Costa-Jussà & Casas, 2019).

Thus, it is crucial to understand the investment decision process of an individual, notably the influence the investors' biases and its effects on investment returns. These biases, alternatively referred to as beliefs and preferences, serve as lenses in the decision maker's thought process. When actual decision-makers are questioned about their views and preferences, the decision-making behaviour of an individual investor becomes apparent (Ainia & Lutfi, 2019; Ferreira, Phyffer, & Koekemoer, 2019; Pompain, 2012). With this goal in mind, an explanatory study was conducted to find out what these beliefs and preferences are.

## Background of the Study

Investment is a commitment to placing funds or other resources for a certain period with the hope of obtaining benefits in the future (Bodie, Kane & Marcus, 2018). A person who sacrifices his current benefits with the hope of future gains is called an investor (Khan, Azim & Sarwar, 2017). Investments are related to investing funds in various alternative assets, both real and financial. The forms of real assets that can be used for the placement of funds are land, buildings, machinery, commodities such as gold, silver, and diamonds, and a host of many others. The forms of investments in financial assets include bank accounts (savings and deposits), bonds, mutual funds, and shares (Ainia & Lutfi, 2019). The investment decision process describes how an investor determines the type of investment, the amount of the investment, and when it will occur. Decision-making, as a whole, is a complex phenomenon that encompasses all aspects of life and includes various dimensions, as well as the process of choosing from the many options available. Decision theory is based on the concept of satisfaction, which explains that the benefit from investment is the amount of joy or satisfaction achieved (Asandimitra, Aji & Kautsar, 2019).

Individual and corporate investment decisions are crucial to individuals and companies alike, as they are a means of achieving individual and corporate goals that support growth and development. Through these investment decisions, businesses strive to expand, progress and generate higher returns (Puka, Beganovi, & Adi, 2018). Individuals also invest in order to improve their standard of living (Paul & Upadhyay, 2018). Oluwatoyin, Osabohien, Temiloluwa, Ogunlusi, and Edafe (2019), assert that investment in

the financial sector is seen as a catalyst for the eradication of poverty in most developing countries. In line with eradicating poverty, the United Nations Sustainable Development Goals (SDG 1) seek to end poverty and hunger in a comprehensive approach with an exclusive emphasis on the role of social protection, nutrition, agriculture sustainability, resilience and sustainable management of natural resources, and investment in rural development, investment in the financial sector, and financial inclusion in the affected countries (UN 2015). The United Nations (1987) defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The goal of SDG 1 is to eliminate poverty by 2030 (Oluwatoyin et al., 2019).

Poverty and hunger are the two main problems confronting African countries. This is because the number of people suffering from hunger and poverty continues to increase (FAO, 2017; Hammer, Healey & Naschold, 2000; Matthew, Fasina, Olowe & Adegboye, 2010). Globally, the number of people going hungry increased from 459 million in 2007 to 2008 to 815 million in 2016 due to the high incidence of poverty, and it is seen as the first increase in hunger levels after the 2007-2008 food price crisis (Clunies-Ross, Forsyth & Huq, 2009; Osabohien, Osabuohien & Urhie, 2018). Similarly, there is a considerable increase from 777 million people being affected by malnutrition in 2015 to 784 million people in 2016. This proves that the poverty rate remains relatively high globally since most of the poor people are from the least developed countries (World Bank, 2017; Osabohien, Matthew, Aderounmu & Olawande, 2019). The increase in poverty, according to the FAO (2017), can be attributed to land disputes and the impacts of climate

change being witnessed in some areas in Sub-Saharan Africa (SSA), and Western and Southeast Asia. However, over the last few decades, developing countries have significantly reduced extreme poverty (Takeshi, 2018)

World Bank (2018) posits that the number of extremely poor people living on less than $1.90 a day according to 2011 purchasing power parity (PPP) prices decreased from 1.85 billion (35 percent of the world's population) in 1990 to 0.88 billion (12.4 percent) in 2012. Therefore, the international goal of halving the number of people living in extreme poverty during the period 1990 to 2015 was achieved three years before the deadline. This achievement can be attributed to many factors and s notable amongst them is the financial sector's investments and rapid economic growth (Inoue, 2018).

Inoue (2018) believes financial development, investments and remittance inflows have helped to improve poverty conditions in developing countries. Furthermore, remittances substitute for financial development in the poverty alleviation process. Remittances could have a weaker impact on poverty alleviation as the financial sector in the remittance-receiving country expands and vice versa. Therefore, developing countries should take advantage of their internal or external financial sources for their poverty reduction strategies according to their respective situations. The development of financial intermediaries is expected to help improve the lives of the poor in developing countries through various channels. For example, it is assumed that a well-functioning financial system will ease financing constraints for economic activities, promote the accumulation of physical and human capital, and increase financial investments (Denkoh, Quartey & Idriso, 2017). Additionally, financial development and investment enable people to meet

unforeseen expenses by constantly saving money at deposit-taking institutions. In fact, several empirical studies have found that financial development usually measured by bank loans and deposits, monetary aggregates, and/or banking sector assets relative to GDP contributes to poverty reduction as low as possible (Bukari, Chei, et al., 2018).

Over the last few decades, investments have become a highly debated subject. It is primarily concerned with the generation and maximisation of wealth. Investment decision-making is the act of committing funds to a project or financial asset to earn a return. It can also be described as the investment of money or financial resources into one or more assets today with the prospect of earning a profit in the future (Mahmood, 2018; Shah, Ahmad & Mahmood, 2018). Individuals frequently invest intending to earn a profit. Investments can also be used to increase one's wealth (Bellofatto, D'Hondt & De Winne, 2018). It is believed that when individuals invest in bonds, mutual funds, stocks, and other investment vehicles, their wealth appreciates and increases, and they eventually get an additional income on their premiums. Additionally, people invest in order to reach financial goals or to work on specific projects such as starting a business, purchasing land, purchasing a car, or building or purchasing a house. When investments are made appropriately, they assist people in achieving their financial goals by earning a better rate of return, thereby improving their standard of living (Avevor, Oppong-Fosu, Aidoo-Acquah & Ankomah, 2021; Ohene-Bredu, 2018).

Owing to the importance of investment and its associated benefits to poverty reduction, individual investors need to structure their investments very well and seek investment advice from the right source (Ohene-Bredu, 2018).

However, it has been observed that when making investment decisions, most investors do not need to only assess the returns on the financial instruments but also how their decisions are affected by psychological factors (Asandimitra, Aji, & Kautsar, 2019). Investment decisions are influenced by investor biases and preconceptions that influence asset prices. The presence of these psychological factors has an effect on the investment and the result achieved. Behavioural finance has emerged as a new system that seeks to understand psychological and financial interactions in order to develop models and theories to gain a deeper and better understanding of the investment decision-making process and its impact on the financial markets (Lodhi, 2014; Sukanya & Thimmarayappa, 2015).

Behavioural finance differs from classical financial theory in that the former recognises that investors are influenced by psychological and emotional factors (Singh &Bahi, 2015). Nofsinger (2016) defines behavioural finance as a study that examines how individuals behave in the financial environment. Behavioral finance examines how diverse psychological characteristics influence how individuals or groups behave as investors, experts, or managers of portfolios. It aims to comprehend how individual investors' behaviours are influenced by their emotions and cognitive errors. Behavioural Finance elucidates how investors make logical errors when making decisions, resulting in a variety of irregularities (Kengatharan, 2014; Yamini, 2016). As a result, behavioural finance is the study of the psychological influences on financial practitioners' behaviour and the consequences on markets. Additionally, he stated that behavioral finance is

interesting since it explains why and how markets may be inefficient (Ogunlusi & Obademi, 2019).

Behavioural finance recognises that heard instincts and emotions are important factors that influence an individual's investment decisions. According to Sewell (2008) (as cited in Nyamute, 2014), heuristic-driven errors and biases, frame dependence, and effects of social influence and emotions often lead to discrepancies between fundamental value and market price. Behavioural finance elucidates that when individuals make investment decisions based on emotional reactions, it shapes the financial markets, affects the prices of assets on the market, and influences financial resource allocation. This is a clear indication that one cannot have a comprehensive or holistic idea about the financial market and its associated performance without considering the pattern of behaviour of investors (Yuliani, Isnurhadi, Jie & Jie, 2017).

Prospect theory, a worth noting theory in behavioural finance, seeks to explain what influences people to take decisions when they are faced with decisions involving risk (Kheneman and Tversky, 1979). Prospect theory postulates that people value gains and losses differently and hence make decisions based on their apparent rewards rather than perceived losses (Chen, 2016). However, mental accounting is applied in financial transactions to describe how individuals assess their financial transactions. Heuristic theory, which is also known as representativeness, is used to describe the role stereotypes play in investment decisions (Nyamute, 2014).

It is established in the literature that actual investors' behaviour is different from investors described by economic theories in modern times. Rattner (2009) postulates that investor behaviour, therefore, looks at how

behaviour influences investment decisions. People arrive at unpredictable, illogical, and ineffectual decisions when they are faced with choices of uncertainty because, as Loewenstein (2000) put it, people do not consider the long-term benefits and cost of financial instruments when making investment decisions since their decisions are influenced by feelings and emotions. Barber and Odean (2011) also posit that many investors hold undiversified portfolios because most of them have little or no knowledge about financial markets and their performance. Some also suffer from overconfidence by engaging in speculation and active trading to their disadvantage.

Huzdik, Béres and Németh (2014) stipulates that personal wealth management among the upper and middle-level income earners has attracted the attention of researchers, and these groups of investors must make good investment decisions because their investment behaviour can influence their portfolio performance. Investors are also faced with growing sophisticated financial assets with their accompanying risk. It is therefore essential for investors to comprehend financial risk, risk perception, and the amount of risk they are willing to tolerate when making investment decisions (Aeknarajindawat, 2020; Nguyen, Gallery & Newton, 2017).

Nguyen, Gallery, and Newton (2017) argue that many investors turn to financial advisers when making investment decisions since it is becoming increasingly difficult and time-consuming to match their risk profile to the kind of instruments they would like to invest in. Generally, financial advisers are required to assess their customers' risk-related knowledge in the course of the counselling process. However, Angelini, Radivoyevitch, McCrae and Khorana (2019) and Anbar and Eker (2019) also argued that the most existing

risk appraisal methods used by financial advisers to evaluate their clients' mindsets on risk are nonconventional and their dependability cannot be determined.

Again, evidence suggests that in practice, advisers often focus solely on financial risk tolerance and are, therefore, likely to overlook their clients' risk perception (Costa Jr, McCrae & Löckenhoff, 2019; Tayaran, Farahi, 2019). Therefore, inexperienced investors have been found to perceive risk differently from their financial advisers. This can lead to a mismatch between financial advisers' risk perception and clients' risk perception, which may lead to advisers offering products or advice that may be inconsistent with the risk profile of the investors (Costa Jr, McCrae & Löckenhoff, 2019).

The effect of risk perception on personal investment decisions is gaining much attention in behavioural finance (Deb & Singh, 2016). Risk perception is seen as how investors ponder the risk of an asset based on their concerns and experience (Singh & Bhowal, 2008). Risk perception is the belief held by an individual, whether rational or irrational, that influences their decision-making towards risky investments (Sindhu & Kumar, 2014). Moreover, behavioural finance theories suggest that personal investment decisions are seen to be influenced by unavoidable psychological and emotional factors. The decision-making behaviour of an investor is influenced by their attitude towards risk. Investors take risks according to their perception, which ultimately affects their behaviour towards risky investment decisions.

Numerous research conducted on the influence of risk awareness on financial investment behaviour revealed that the individual's level of risk

perception alters the person's equity share investment decisions (Singh & Bhowal, 2009) and the individual's ability to take risky investment decisions is influenced by the individual's risk perceptions (Sitkin & Pablo, 1992; Sitkin & Weingart, 1995; Riaz et al., 2012). Furthermore, it has been observed that investor perceptions show substantial change during a financial crisis, whilst risk endurance and risk awareness becomes much more stable than the predictable return on assets within a fund family, which is determined by an investor's attitude towards risk (Lenard et al. 2003). Many investors want to commit to risky assets in anticipation of higher returns with less risk assumption, that is, safe liquidity (Rathnamani, 2013). It is clear from the literature that investors' risk perceptions have an enormous effect on their behaviour when it comes to investment decisions (Deb & Singh, 2016).

Another factor that has been identified in behavioural finance to affect personal investment decisions is risk tolerance. Grable (2000) defines financial risk tolerance as "the maximum amount of uncertainty someone is willing to accept when making a financial decision." This definition has been widely used in personal and consumer finance (Grable, 2008). Sulaiman (2012) argues that risk tolerance is a complex attitude and has four facets: financial, physical, social, and ethical. Whether in the context of professional practise or empirical research, risk tolerance is acknowledged as an important factor in savings and investment choices for retirement or other household goals. Choices regarding investment products, asset allocation plans, and portfolio accumulation strategies have been attributed to risk tolerance (Sulaiman, 2012). The notion that financial risk tolerance plays a key role in shaping financial behaviour is widely accepted in countries that share common market

orientations, such as the United States, Australia, and Europe (Nobre, Grable, Silva & Veiga, 2016).

Moreover, research has proven that, in making investment decisions, it is important to consider the individual's risk tolerance as part of the risk management process (Sulaiman, 2012; Nyamute, 2016). It can therefore be concluded that risk tolerance is an important factor to consider in household optimal portfolio decisions, which is also an important factor in the risk handling process (Nyamute, 2016). Socio-demographic factors such as age, gender, marital status, income, occupation, time, liquidity needs, and knowledge about investments, portfolio size, and attitude to asset volatility are used to differentiate the individual's level of financial risk tolerance (Sulaiman, 2013).

Furthermore, it has been noted in some parts of the world that investment firms and financial advisors are required by law to assess the risk tolerance level of investors before they are allowed to engage in any trade activity. It has been made a requirement because assessment of risk tolerance is generally recognised as a prerequisite to the development of a sound financial plan for the client (Nobre et al., 2016). For instance, in the United States, both the Securities and Exchange Commission and the Financial Industry Regulatory Authority require financial advisors to measure and assess each client's risk tolerance before offering them investment advice. In other parts of the world, a more laissez-faire approach to the measurement and evaluation of risk attitudes is the norm (Nobre et al., 2016). Deo and Sudar (2015) state that one of the "significant determinants" of one's investment behaviour is the level of risk tolerance.

However, while emphasis is placed on the role of financial advisers and planners in determining their clients' risk tolerance, some studies suggest that individual investors need to consider their financial literacy level (Almenberg & Widmark, 2011; Almenberg & Dreber, 2015). In line with the aforementioned statement, many scholars have researched the relationship between risk tolerance and financial literacy as well as how they influence each other separately but not in relation to each other (Almenberg & Säve-Söderbergh, 2011; Sjöberg & Engelberg, 2009). Almenberg and Widmark (2011) reported that students with financial literacy had a more prominent positive attitude towards taking financial risk than students with non-financial literacy.

Yao et al. (2019) also argue that those with limited financial experience and financial literacy may be expected to have a significantly different perception of financial risks compared to those who are active in the stock market or have a higher level of financial literacy. All in all, what is interesting is whether low financial literacy is potentially linked to poor financial decision-making, consistent with low financial risk tolerance and perception of risk or not, and has made exploring whether financial literacy is a predictor of risk tolerance more fascinating.

Financial literacy is defined by the OECD as "a combination of awareness, knowledge, skills, attitude, and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing" (OECD IFNE, 2011). It is also defined by Brown, Henchoz and Spycher (2018) as "the way people understand and use basic knowledge of financial concepts to plan and manage their financial decisions, such as in insurance,

investing, saving, and budgeting, and includes financial knowledge, financial behavior, financial awareness, and financial attitudes." Financial knowledge is seen as the major contributor to the calculation of interest rates, understanding of inflation, portfolio management, and risk diversification (Mugo, 2016). Financial behaviour is the ability of the individual to acquire loan facilities and come up with a budget (Amos, 2014). Financial attitude is described as the use of sound principles of finance that helps to produce and preserve good resource management through comprehensive financial decision-making (Ragina, Ezat, Junid, & Moshiri, 2011). It is also described as the capacity of an individual to choose between investment alternatives and actually invest in the chosen asset (Pankow, 2012; HC & Gusaptono, 2020).

Financial literacy is seen as an important determinant when it comes to investment decision-making because it has an impact on the economic well-being of an individual and his family as well as the larger economy (Oseifuah, Gyekye & Formadi, 2018). Individuals who are more financially literate are said to make good financial decisions to improve their financial position, and that can also improve the financial stability of the larger economy (OECD IFNE, 2017). As HC and Gusaptono (2020) put it, "the higher the level of understanding of financial knowledge, the higher the chances of making investment decisions." Extant literature agrees that individuals can plan better for their retirement, reduce their indebtedness, stay active in the financial market, and hold portfolios that are diversified when they have high financial literacy (Gaudecker, 2015; Lusardi & Tufano, 2015; van Rooij et al., 2012). Financial literacy is also associated with a sense of greater inclination to pull

out funds from troubled institutions (Brown et al., 2017; Deuflhard et al., 2018).

The markets for financial instruments have become more accessible to both individual and institutional investors. However, the instruments being sold on the financial markets have become more complex. Therefore, it is important for individuals and institutional investors to have better or enhanced financial literacy levels to understand these complexities to make sound investment decisions (Akileng, Lawino & Nzibonera, 2018).

There is a school of thought that believes culture, which symbolises a group of common awareness and inherent theories on the universe comprising attitudes, principles, morals, and other concepts required to deduce and traverse various environments, affects an individual's risk perception (Hong, Morris, Chiu & Benet-Martnez, 2000). Cultural knowledge forms the basis of a person's social reality and the rubrics and instructions that define this reality is passed on during child rearing and is reinforced by interactions with others (Lau, Chiu & Lee, 2001; Sharma, 2010). The argument that culture affects an individual's risk perception is embedded in the cultural theory of risk perception propounded by Douglas and Wildavsky (1982).

Douglas and Wildavsky (1982) started an argument in the early 1980's about the effect of cultural settings and values on risk perception (Johnson & Covello, 1987; Dake, 1991; Stern Dietz & Guagnano, 1995). In their opinion, risk perception and concern about the environment or social issues are socially and culturally framed and they concluded that a person's risk perception and his evaluation of risk are dependent on the values and worldviews of the social and cultural settings he/she has been exposed to. Douglas and Wildavsky

(1982) reiterated that individuals are rooted in a social setup and the social background influences their beliefs, attitudes, values, and views about the world around them. In this way, socialised cognitive patterns work like filters in the evaluation of information about risks (Stern et al., 1995).

Following this perspective, individual cognitive processes such as feelings of uncontrollability and the perception of threat to health are not essential predictors for choosing what people fear or not, but cultural biases and socially shared values (Wildavsky & Dake, 1990; Dake, 1990). For instance, research on the analysis of international risk perception concluded that there is almost no correlation between concern and individual awareness (Wildavsky, 1993). This finding can be interpreted as an indicator of the importance of socialised cognitive schemes that function as a sieve in the assessment of knowledge. It can be said that our interpretation of risk information is shaped by our values, which are products of culture. It can therefore be concluded that individuals with environmental beliefs would interpret a given piece of information on the prospect of a tragedy at a nuclear power station in a slightly different way as compared to those who support the establishment of a nuclear power plant (Ellis & Thompson, 1997; Rippl, 2002).

Cultural theory suggests that people choose what tofear based on their culture, which is a way of life or their social values (Douglas & Wildavsky, 1982; Thompson, Ellis & Wildavsky, 1990; Douglas, 1997). Douglas and Wildavsky (1982) developed the grid/group typology to identify the different types of cultures that influence an individual's perception of risk. The grid/group typology had four patterns, with each pattern consisting of

behavioural characteristics or social relations, complemented by a cultural bias or justificatory cosmology. The social configuration, as well as specific recognisable social interactions and actions, are part of the behavioural design (Gross & Rayner, 1985). The grid/group evaluation discusses ideas and beliefs as both replicating and representing the experience of both belonging to a social organisation and social differentiation within the organisation (Rippl, 2002). The four prototypical cultural types were established using two fundamental dimensions of sociality, that is, control (grid) and social commitment (group).

The four prototypical cultural types are egalitarians, individualists, fatalists and hierarchy. Egalitarians have a high interest and high identification with regards to group relations, but they dislike social relations that are shaped by social differences or hierarchic structures. In their view, social relations are open to negotiation. On the hand, individualists have both low sympathy for hierarchic structures and low sympathy for group attachment. Fatalists also have low sympathy for group attachment but have a different relation to the grid dimension. Thus, they accept externally ascribed social positions and they recognise constraint by others, although they do not feel that they are part of any social collective. People with hierarchic orientations are assumed to accept risks as long as governmental authorities or experts justify decisions about those risks. The cultural theory offers clear hypotheses about modes of risk perception for each of the four types.

Culture, which is widely believed as the set of beliefs, norms and desires held by a social group's members, influences financial literacy (Guiso, Sapienza & Zingales, 2006). From an economic perspective, culture can

influence financial awareness and decision-making through systemic variation in time or risk preferences (Falk, Becker, Dohmen, Enke & Huffman, 2018) or variation in social standards when it comes to debt accumulation and repayment, in addition to informal protection for financially distressed homes (Brown et al., 2018). From a psychological standpoint, culture can further influence financial awareness and decision-making from a standpoint through differences in financial socialisation or attitudes concerning wealth (Yamauchi & Templer, 1982).

Lusardi, Mitchel and Curto (as cited in Brown, Henchoz & Spycher, 2018) have documented significant disparities by ethnicity and race in financial literacy among young people in the US. This raises the question of how cultural context could influence the rates of financial literacy. However, they found out that race and ethnicity are often associated with differences in the socioeconomic background making it difficult to identify the impact of cultural background on financial literacy.

It can be said that with all these arguments put forward, investors take risks based on their interpretation and perception which ultimately affect their behaviour towards risky investment decisions. Due to the volatility in real and anticipated returns on investment (Sindhu & Kumar, 2014), risk is an inherent feature of all types of financial investment in this situation. Decisions on investment fall within the sphere of behavioural finance. Behavioral Finance emphasises and stresses the fact that human psychology, perception, and thinking affect our decisions. It becomes an important part of the decision-making process as it profoundly affects the decision-making conduct of investors (Abdeldayem, 2015).

The literature reveals behavioural finance information is viewed and evaluated by individual investors when making risky investment decisions. Ishfaq, Maqbool, Akram, Tariq, and Khurshid (2017) reiterated that behavioural finance describes the mental skills (in terms of concentration, memory, reasoning, problem-solving, and understanding) needed for financial and investment decision making. The above explains why Shefrin (1999) and Statman (1999) said psychology, attitudes, and cognitive errors are crucial determinants of investor and practitioner financial and/or investment decisions. Within behavioural finance, the prospect theory is commonly used to explain how people make choices in circumstances where they have to decide between options involving risk. Mental accounting is, however, used in financial transactions to describe how individuals think and evaluate their financial transactions (Nyamute, 2016). Heuristic theory, also called representativeness, explains the role of stereotypes in investment decisions. The consequences of investment process beliefs or assumptions are explained by a cognitive dissonance as the mental conflict encountered by humans when they are presented with evidence that their beliefs or assumptions are incorrect (Nyamute, 2016).

Hoffman et al. (2015) reported that investors' expectations of a particular stock or stock market's risk and return characteristics are widely regarded to be important factors in their decision-making (McInish & Srivastava, 1984; Van der Sar & Antonides, 1990). Using selection studies and investor surveys in behavioural finance have shown how investor expectations can describe stock market behaviours of individuals, hypothetical investment choices, self-reported willingness to invest in the stock market, or self-

indicated risky asset portfolio composition (Warneryd, 1996; Weber & Milliman, 1997; Siegrist, 2006; Keller & Fellner, & others). What is less understood, however, is whether shifts in these attitudes, such as the return expectations of individual investors (i.e., investor confidence about the returns of their portfolios), risk tolerance (i.e., the general attitude of investors (like or dislike) toward financial risk), and risk perceptions (i.e., investors' views of stock market risk), are also capable of explaining behavior. (Post, Pennings, & Hoffmann, 2015).

**Statement of the Problem**

Access to formal financial services allows people to make financial transactions more efficiently, and safely and helps poor people crawl out of poverty by making it possible to invest in education and business. It can also help reduce poverty and inequality by helping people invest in the future, smooth their consumption, and manage financial risk (Demirguc-Kunt & Singer, 2017). Financial inclusion has become a key pillar of development policy in most countries around the world. This stems from the realisation that financial inclusion and access are critical in reducing extreme poverty, increasing shared prosperity, and promoting sustainable and inclusive economic growth and development (World Bank, 2014; IMF, 2014; Demirguc-Kunt & Singer, 2017; Sun et al., 2020).

Generally, there is the idea that a well-functioning financial system will promote financial market development through which economic growth can be achieved and sustained, and that unless decent levels of economic development are achieved, financial market development will fail to show a meaningful impact on the living standards of people (Prasad, 2019). A well-

developed capital market facilitates the allocation of capital to an economy that is necessary for growth and economic development and provides large amounts of funding to successful entrepreneurs needed for corporate growth (McGowan, 2008; Opera & Stoica, 2018).

However, it is worth mentioning that in recent times, there have been instances of corporate failure that can be traced to bankruptcy or financial distress. (Samanhyia, Oware & Anisom-Yaansah, 2016). Housing and construction banks, Meridian BIAO bank, Bank for Credit and Commerce International, Tana Rural Bank, Ghana Co-operative Bank, Tano Agya Rural Bank, National Savings and Credit Bank, City Savings and Loans, Unity Trust Microfinance, Equip Susu Microfinance, Mfa Microfinance, Busy Fingers, Devine Microfinance, Emends Microfinance, and recently DKM Microfinance are notable examples. The collapse of these financial institutions can be attributed to inadequate funding, fraud and regulatory laxity. The failures of these financial institutions have detrimental effects on those institutions, the general public, as well as depositors. Depositors often lose their working capital, savings, source of livelihood, and livelihood, which also predisposes them to indebtedness and invariably impoverishes them (Boateng, Adam, Okoe & Anning-Dorson, 2016; Samanhyia, Oware & Anisom-Yaansah, 2016).

With the experience of corporate failure in Ghana and the world as a whole, investors need to be concerned about their financial behaviour because investors need to have good financial behaviour to enable them to manage their personal finances and businesses as well (Andarsari & Ningtyas, 2019). Personal financial behaviour in this study is measured by financial literacy,

risk tolerance, and risk perception. Most studies done on personal financial behaviour have focused on retirement planning (Adam, Boadu & Frimpong, 2018; Lusardi & Mitchell, 2011) and firm performance (Agyei 2018; Adomako, Danso & Damoah, 2016; Owusu, Ismail, Osman & Kuan, 2019) financial planning among university students (Ansong, Gyensare, 2012; Atakora, 2013; Sarpong-Danquah, Gyimah, Poku, & Osei-Poku, 2018), financial distress (Karakara, Sebu, & Dasmani, 2021; Tuffour & Amoako, 2020), less prone to over-indebtedness (Huston, 2012) participate in financial markets (van Rooij et al., 2011), hold better-diversified portfolios (Von Gaudecker, 2015), wealth accumulation (Ahunand, & Van Hove, 2020; Lusardi 2019) and quality of people's financial choices (Sekita 2011; van Rooij, Lusardi & Alessie 2011; Stolper, 2018). These studies have been silent on personal financial behaviour and the extent to which it influences the investment decisions of households in the Ghanaian context (HC & Gusaptono, 2020; Oteng, 2019; Mitchell, 2008). This gives rise to further research because households' investment decisions serve as a catalyst for poverty reduction, and economic growth, and help to achieve the goal of financial inclusion. This study extends the literature by investigating how personal financial behaviour influences investment decision-making in the Ghanaian context.

Previous studies have used religion as a proxy for culture (Agyei 2018; Saputra, Natassia, & Utami, 2020), while other studies have used language as a proxy for culture (Arrondel, Debbich, & Savignac, 2012; Brown, Henchoz, & Spycher, 2018) and Hofstede's cultural dimensions (national culture) (Ahunov, & Van Hove, 2020; De Beckker, De Witte, & Van Campenhout,

2020; Zhao, Sun, Devasagayam, & Clendenen, 2018). These studies concentrated on the effects of culture on personal financial behaviour without considering the mediating role of cultural adherence on personal financial behaviour and investment decision making. Agyei (2018) and Ahunov and Van Hove (2020) argued that there is a need for further theories to explain the effects of culture on personal financial behaviour and investment decision making. This study adopted cultural adherence against the many studies which used religion (Agyei 2018; Shah & Malik, 2021); language (Brown, Henchoz & Spycher, 2018) and national culture (Ahunov, & Van Hove, 2020) as proxy for culture in investment decision making because cultural adherence measures culture at a cross-national level, national level, and variations within national culture, a situation which can be compared to Ghana's cultural variations (Cornia, Dressel & Pfeil 2016; Heims, 2016; Maleki & de Jong 2014; Maleki & Hendriks 2015; Nakamura 2016; Olli, 2012).

Finally, even though there have been several studies on culture and personal financial behaviour (Ahunov & Van Hove, 2020; Brown, Henchoz & Spycher, 2018; De Beckker, De Witte & Van Campenhout, 2020; Zhao, Sun, Devasagayam & Clendenen, 2018), much attention has not been focused specifically on Ghana. This makes it difficult to situate the issues of personal financial behaviour, culture and investment decision-making within the Ghanaian context where our cultural setting is different from the western. This study seeks to fill the gap by utilizing primary data to determine the influence of culture on personal financial behaviour and investment decision making to help appreciate issues concerning financial literacy, risk tolerance, risk perception and culture in Ghana in recent times.

**Purpose of the Study**

The purpose of the study was to investigate the mediating role of culture on personal financial behaviour and investment decision making in households in Ghana.

**Research Objectives**

The specific objectives of the study were:

1. to assess the influence of personal financial behavior on investment decision making
2. to investigate how adherence to culture can influence personal financial behavior
3. to examine the mediating role of personal financial behaviour on cultural adherence and investment decision-making
4. to investigate how demographic characteristics can moderate between personal financial behavior, cultural adherence and investments decision making

**Research Hypotheses**

1. Ho: Financial literacy has an influence on investment decision-making.
2. Ho: Risk Tolerance has an influence on making investment decisions.
3. Ho: Risk perception has an influence on making investment decisions.
4. Ho: Hierarchism has an influence on financial literacy.
5. Ho: Hierarchism has an influence on risk perception.
6. Ho: Hierarchism has an influence on risk tolerance.
7. Ho: Egalitarianism has an influence on risk tolerance.
8. Ho: Egalitarianism has an influence on risk perception.
9. Ho: Egalitarianism has an influence on financial literacy.

10. Ho: Individualism has an influence on risk tolerance
11. Ho: Individualism has an influence on risk perception.
12. Ho: Individualism has an influence on financial literacy.
13. Ho: Fatalism has an influence on risk tolerance.
14. Ho: Fatalism has an influence on risk perception.
15. Ho: Fatalism has influence on financial literacy.
16. Ho: Hierarchism has influence on investment decision making.
17. Ho: Egalitarianism has influence on investment decision making.
18. Ho: Individualism has influence on investment decision making.
19. Ho: Fatalism has influence on investment decision making
20. Ho: Financial literacy mediates the relationship between hierarchism and investment decision making.
21. Ho: Risk perception mediates the relationship between hierarchism and investment decision making.
22. Ho: Risk tolerance mediates the relationship between hierarchism and investment decision making.
23. Ho: Financial literacy mediates the relationship between Egalitarianism and investment decision making.
24. Ho: Risk perception mediates the relationship between egalitarianism and investment decision making.
25. Ho: Risk tolerance mediates the relationship between egalitarianism and investment decision making.
26. Ho: Financial literacy mediates \ the relationship between individualism and investment decision making.

27. Ho: Risk perception mediates the relationship between individualism and investment decision making.
28. Ho: Risk tolerance mediates the relationship between individualism and investment decision making.
29. Ho: Financial literacy mediates the relationship between fatalism and investment decision making.
30. Ho: Risk perception mediates the relationship between fatalism and investment decision making.
31. Ho: Risk tolerance mediates the relationship between fatalism and investment decision making.
32. Ho: Age moderates the relationship between financial literacy and investment decision making.
33. Ho: Age moderates the relationship between risk perception and investment decision making.
34. Ho: Age moderates the relationship between risk tolerance and investment decision making.
35. Ho: Gender moderates the relationship between financial literacy and investment decision making
36. Ho: Gender moderates the relationship between risk perception and investment decision making.
37. Ho: Gender moderates the relationship between risk tolerance and investment decision making.

## Significance of the Study

The findings of the study will contribute to theory and empirical studies in the area of behavioural finance and policy formulation by the institutions concerned.

### *Contribution to Theory*

The findings of this study will add value to the theory in the area of behavioural finance. Theories such as the Life-Cycle Theory, the Models Underlying Financial Risk Perception and the Behavioural Theoretical Foundation for Risk Tolerance states that personal financial behaviour plays a critical role in investment decision making. However, as it is now, fewer studies have paid attention to the relationship between personal financial behaviour and investment decision-making and how socio-demographics such as gender and educational attainment impact this relationship. Thus, these theories have not been substantially validated in theoretical studies in Ghana, and this makes it difficult to ascertain the true impact of personal financial behaviour on investment decisions in Ghana. These research findings will contribute to the debates about personal financial behaviour and investment decision-making in Ghana.

### *Contribution to Empirical Studies*

This study would add to the empirical literature on the importance of personal financial behaviour in investment decisions. This would also help to settle ongoing controversies in the empirical literature on the impact of personal financial behaviour on investment decision-making, as many studies revealed controversial findings.

***Contribution to Policy***

Companies going public can use the findings of this study to understand how an investor's behaviour influences the price of securities and hence be able to set realistic IPO prices that appear neither undervalued nor overvalued from the point of view of investors. Stockbrokers and mutual fund companies promise to maximise the wealth of investors who are their clients. They seek to satisfy the preferences of investors, and hence the findings of this study would help them understand investor behaviour and advise them appropriately.

The findings of this study would provide evidence-based information to investors and potential investors on viable investments and factors to consider when making investment decisions. Investment decisions are key as many factors come into play when making such decisions. Without being guided by empirical information, investment decisions cannot be viable, leading to unprofitable investment and waste of scarce funds. This study, informs investors and potential investors whether or not they need to consider their personal behaviour, risk tolerance level and cultural adherence when making investment decisions in order to earn optimum returns from the investment.

The study's findings would be informative to policymakers and regulators of capital markets, especially with regard to the role played by individual demographic characteristics and investor behaviour in capital market developments. One of the key functions of regulators of the capital market is to ensure the sustainable development of the capital market. This is possible through the formulation of effective policies to guide the operations

of and protect the actors in the market. This current study helps in this direction. The findings of this current study would provide evidence-based information to policymakers in the capital market to understand how investment decisions are taken by individual investors and corporate investors, thereby helping them to initiate policies that are consistent with these behaviours for an effective capital market.

**Delimitations**

The study falls within the realm of behavioural finance. Behavioural finance is the application of psychology in finance by individual investors, which has the power to influence the outcomes of the securities markets as well as market fluctuations. It is a major notion that the behaviour of irrational investors may impact asset pricing and will not always be eliminated quickly by rational arbitrageurs. The study focused specifically on the influence of personal financial behaviour on investment decision making; how adherence to culture can influence personal financial behavior; the interactive effect of cultural adherence on personal financial behaviour and investment decision-making; and how demographic characteristics can mediate between personal financial behavior, cultural adherence, and investment decision making.

The study was conducted among households in the Accra Metropolitan Assembly. AMA was chosen because of its diverse cultural background and the heavy concentration of financial institutions and investors. For example, Accra is a cosmopolitan city comprising individuals from all parts of Ghana, though it is a Ga-speaking community (Agyei-Mensah & Owusu 2010; Frimpong, 2017).

**Limitations**

First, the data collection will be limited to the Accra Metropolitan Assembly because of its cosmopolitan nature, where almost all tribes and ethnic groups can be found, which limits the scope of the study. Ghana has sixteen regions with sixteen regional capitals. Thus, AMA cannot be a true representation of all the sixteen regions in Ghana. As a result, the findings of this study should be interpreted within its scope unless they are confirmed by larger studies.

Lastly, COVID-19 posed a challenge to data collection. Covid-19 protocols recommend social distancing, washing of hands with soap under running water or sanitising of hands and wearing nose masks. Fulfilling these protocols during the data gathering process increased the financial cost of the study. The researcher had to provide nose masks for himself, the field assistants and the respondents to avoid the spread of COVID-19 from one person to another in case some of the respondents had COVID-19. Aside from the increased financial cost, COVID-19 delayed the data collection exercise since the researcher had to use the substantial time to assure the participants of not contracting COVID-19 through the data collection exercise. Some people declined to participate in the study, despite the assurance given to them.

**Definition of Terms**

The key terms in this study include cultural adherence, personal financial behaviour, investment decision-making, and demographic characteristics. These terms are defined as used in this study as follows:

1. *Cultural adherence*: This is the extent of attachment or commitment to culture. Hierarchy, egalitarianism, individualism, and fatalism are

examples of cultural adherences used in this study.

2. *Culture:* This is a set of beliefs, norms, and desires held by a social group's members.
3. *Demographic characteristics*: These are the characteristics of respondents of this study. It comprises characteristics such as age, sex, educational attainment, employment status and monthly income.
4. *Financial literacy*: This is the extent to which people have acquired the knowledge and skills to make sound financial decisions.
5. *Financial risk tolerance*: This is the maximum amount of uncertainty someone is willing to accept when making a financial decision.
6. *Investment decision-making*: These are decisions about how an individual's funds should be invested in various assets for the individual to earn the highest possible return.

**Organization of the Study**

The thesis is organised into 9 chapters. The first chapter considers the background of the study and offers the perspective within which the study is undertaken. Chapter two is made up of the theoretical review and the general literature on culture, risk tolerance, financial literacy, risk perception, and investment decision-making. The empirical review and the conceptual framework are discussed in Chapter 3. The methodology was considered in chapter four. Chapters five, six, seven, and eight discussed the analysis of the objectives, and finally, Chapter nine is made up of findings, summaries, conclusions, and suggestions.

# CHAPTER TWO

# THEORETICAL REVIEW

## Introduction

Chapter two presents various theories relating to financial behaviour, culture and investment decision-making. The review provides an unambiguous road map for the establishment of the various difficulties in the extant literature for necessary courses of action. The study outlined the theoretical review in response to the objectives under consideration. The study investigated the influence of personal financial behaviour and culture on investment decision-making. Accordingly, the chapter reviews theories that are relevant to behavioural finance and investment decision-making, as well as key concepts such as behavioural finance, cultural adherence, and investment decision-making. The chapter ends with a summary of the theories and concepts reviewed.

## Theoretical Review

This section reviews theories underlying the assessment of the influence of personal financial behaviour and culture on investment decision-making. The sub-theories and factors defining the human behavioural foundation (heuristic theory, prospect theory, herding effect, and market factors) were reviewed. The section presents the following personal financial behavioural theories: The Life-Cycle Theory, the Models Underlying Financial Risk Perception, and the Traditional and Behavioural and Theoretical Foundation for Risk Tolerance The heuristic-systematic models were also reviewed in relation to objectives one, three and four in question. The cultural theory was also examined in order to provide a more

comprehensive explanation of the importance of cultural adherence in individual investment decision making.

**The Culture Theory**

Douglas and Wildavsky (1982) began to address the effect of values and cultural settings on risk perception in the early 1980's (Johnson & Covello, 1987; Dake, 1991; Stern et al., 1995). They agree that perceived risk and social problems are socially and culturally oriented. This implies that the beliefs and worldviews of certain social or cultural backgrounds form the person's understanding and risk assessment. Douglas and Wildavsky (1982) emphasise that humans are part of a social system and that the social background of people influences their values, behaviors, and ideologies. By so doing, socialised cognitive trends function like detectors in analysing risk information (Stern et al., 1995).

Based on this viewpoint, the most significant predictors of choosing what people fear or do not fear are not human cognitive processes such as risk perception but shared social worldviews - so much so that cultural biases decide on individuals' perceptions (Wildavsky & Dake, 1990; Dake, 1992). For example, an analysis of global risk perception research has shown that there exists almost no association between people's knowledge and interest (Wildavsky, 1993). This can be explained as a sign of the importance of socialised cognitive schemata that act as a filter in information evaluation. Accordingly, principles are used to shape the perception of information. For instance, people with environmental values will analyse available information on the likelihood of accidents at nuclear power plants in a slightly different way than those who favour it. Ellis and Thompson (1997) maintained that

concern is rooted in broader socio-cultural spectrums and is not simply a feature of information on the protection of specific technologies.

Douglas and Wildavsky (1982) have created a grid/group categorization (topology) to classify various types of cultures, consisting of a characteristic pattern of action (pattern of social relations), followed by a cosmology of justification (or cultural bias). The grid/group dynamism revealed two essential social dimensions: "grid" for the degree to which relations are assigned and "group" for the degree to which interpersonal patterns are linked ("us" vs. "them"). The existence of the interaction of these parameters resulted in four relational patterns or institutions, namely hierarchism, egalitarianism, fatalism, and individualism.

*Hierarchism:* Risks are believed to be accepted by people with hierarchical orientations as long as decisions on certain risks are supported by public authorities or professionals (Thompson et al., 1990). Focus is centred on the distinction between authorities, responsibilities, and resources. Their fear of risk threatens the political hierarchy. Hierarchism originated from a high grid and a group. Decision-makers in hierarchical societies are wholly accountable for decision-making. When society is both mastery and hierarchical, there seems to be little concern for the effect of decisions on other individuals (Wildavsky, 1993). Those who make decisions for the group as a whole are advised to make choices for the perceived gains of the group as a whole.

*Egalitarianism:* Egalitarians are believed to be opposed to dangers that pose irreversible risks to certain people or coming generations (Douglas & Wildavsky, 1982). They fear the risks that are placed on them by the actions of

a privileged elite of professionals or policymakers. Egalitarianism focuses on equality and opportunity for all people (Wildavsky, 1993). Decision-makers may weigh how their actions impact the welfare of society.

*Fatalism:* Fatalists exercise an unambiguous orientation towards socially referred classifications, albeit without group identity. They are careless about stuff that they do not think they will do anything about (Douglas, 1997). Here, people are much more interested in things that border on their interests.

*Individualism:* Individualists see risk as an incentive. Technological advances, for example, are perceived more as prospects than as threats (Thompson et al., 1990). They are afraid of risks that might limit their independence. Individualism focuses on the specialty of a person in relation to a social group.

**Human Behavioural Theories**

A chunk of the economic and financial theories assume that agents in the economy make rational decisions while facing a course that demands specific actions (Kim & Nofsinger, 2008). But, broadly speaking, investor behaviour is founded on an analytical framework that incorporates various factors relating to psychology, sociology, and finance. Agents of behavioural models are not seen to be rational because investors' expectations and desires lead them to act irrationally (Farlin, 2006). Macgoun (1992) cited culture, religion, emotions, and ideology as the fundamental factors that contribute to the irrational behaviour of investors when making decisions in various circumstances. While there are many investigations in this field, most people are not aware of the theories of financial behaviour and the factors that

contribute to irrational financial behaviour (Montier, 2002). In response to this study, the following theories are being considered: heuristic theory, prospect theory, herding effect, and market factors.

**The Heuristic Theory**

Heuristics are, on a lighter note, unquestionable rules of thumb that have been supposed to show how individuals make decisions, come to judgments, and address problems, usually when working with challenging problems or insufficient information. Heuristics are characterised by principles that make decision-making easier, particularly in dynamic and ambiguous settings, by reducing the difficulty of evaluating probabilities and predicting values to simplify decisions (Kahneman & Tversky, 1974; Ritter, 2003). Such rules perform admirably in most situations; however, in some cases, the results are subject to systematic cognitive biases (Parikh, 2011). In general, these rules are very beneficial, particularly regarding time limitations, but sometimes they contribute to prejudices. Kahneman and Tversky happened to be the first writers to investigate heuristic factors by introducing three parameters, namely representativeness, availability bias, and anchoring (Kahneman & Tversky, 1974). Waweru et al. (2008) also introduced two factors: Gambler's fallacy and overconfidence.

*Representativeness:* Representativeness is the magnitude or degree to which an occurrence is identical to its parent population and is often referred to as the degree of similarity or connection to the population. Representativeness can be referred to as “the degree of similarity that an event has with its parent population” (DeBondt & Thaler, 1995) or “the degree to which an event resembles its population” (Kahneman & Tversky, 1974).

Under representativeness bias, the sample size is often ignored, and this happens when individuals refer to very few samples (Luu, 2014). Representativeness is the extent to which occurrences and instances within the population are identical (DeBondt & Thaler, 1995). Representativeness is capable of leading to bias in making decisions because, as a result of selectivity, people attempt to value relatively current developments and disregard long-term events (Ritter, 2003). In circumstances where there is so much ambiguity, individuals make their decisions based on similarities with their parent population, and that event also has the features from which it is produced. This makes investors assess firms based on their different features, such as returns, advertising, products, and, in particular, their management and investment, which are mostly based on these attributes if they are good (Onsomu, 2014).

*Anchoring:* Anchoring is a phenomenon used in situations where people use some early strategies or values to make projections that are biased towards the initial ones, as distinct guiding principles yield different estimates (Kahneman & Tversky, 1974). This occurs in the financial market when an economic dimension is fixed by recent experiences. Investors often refer to the original purchase price when evaluating it. As a consequence, today's prices are always dictated by those of the past. Anchoring allows investors to determine the scope of share price or company income by looking at historical patterns, resulting in an under-reaction to unforeseen situations. Anchoring does have a link with representativeness, as it often represents the fact that people frequently rely on recent history and appear to become more positive

when the market rises and more negative when the market falls (Waweru et al., 2008).

*Availability Bias:* Availability bias comes to the fore when people use general guidelines or mental shortcuts to forecast the likelihood of events and the degree to which they happen in their lives (DeBondt & Thaler, 1995). In this case, people tend to deviate from easily remembered incidents rather than those that are difficult to visualize. It is anchored on the tendency of human beings to very quickly remember recent and inspiring incidents (Hvide, 2002). The method of assessing events that are at the close of each month is easy to recall, instead of those that are at the beginning of the month, so that recent events more readily affect memory (Sadi et al., 2010). Overconfidence: The overestimation of the reliability of one's knowledge and abilities constitutes a sign of overconfidence (DeBondt & Thaler, 1995; Hvide, 2002). Several studies have shown that excessive trading is one of the consequences for investors. Available information suggests that financial professionals are slowly updating their scope of work, even though there is a clear indication that the evaluation is no longer beneficial. Analysts and investors are frequently overconfident in areas where they have the expertise (Evans, 2006). Overconfidence is assumed to boost endurance and commitment, mental fitness, and risk tolerance. In other words, overconfidence may help encourage professional efficiency. Again, it has been established that overconfidence can help strengthen the perception of one's abilities by others, which may contribute to ensuring a quick promotion and a longer duration of investment (Oberlechner & Osler, 2004).

*Gambler's Fallacy:* The gambler's fallacy entails a biased behaviour that develops when a person presumes that the sample is identical in appearance to the parent population from which the sample was obtained (Statman, 1999). This bias happens in the stock market when investors make erroneous assumptions about the reversing points, which are thought to be the ends of good or bad outcomes. The actors try to foresee the reversal of stock prices because they suffer from this bias since they expect that the pattern will be overturned (Waweru et al., 2008). In the fallacy of gamblers, investors believe random events in the market are self-correcting.

**The Prospect Theory**

Prospect theory stresses the subjective nature of investor decisions, which are primarily affected by the value systems of investors, unlike the expected utility theory (EUT), which emphasises an investor's reasonable expectations in deciding relating to their investments (Filbeck, Hatfield & Horvath, 2005). The normative rationale choice framework, representing economic thought, is the key driver of EUT, which involves the assessment of risk-based decisions. Prospect theory demonstrates people's actions in circumstances where they face uncertainties and risks. Individuals usually want certainty, so they prefer results that are more reliable and likely. Waweru et al. (2008) describe prospect theory as a major mental state that greatly ensures that individual decision-making processes can be influenced. Its elements include loss of aversion, regret aversion, and mental accounting.

*Regret Aversion:* Regret is a feeling that happens when people make errors. Investors escape regret by refusing to sell declining stocks and being ready to offer rising shares. In addition, investors appear to be more

remorseful about retaining stock losses for too long than about disposing of high-performing stocks too fast (Forgel & Berry, 2006; Lehenkari & Perttunen, 2004). A psychological mistake that results from additional thought or relies on feelings and emotions of guilt in circumstances where choices are to be made is often bad when other outcomes tend to be better for the decision maker. The source of regret aversion bias is that most people do not accept their errors. In this case, people are trying to avoid making decisions because they believe that any decision, they make will be problematic.

*Loss Aversion:* Loss aversion can be explained as having the opportunity to prevent losses as opposed to gains. When this problem is portrayed negatively, the loss aversion will become more severe, so that the person will suggest a new decision when confronted with a negatively conceived issue. In this case, there will be less bargaining whenever the vulnerability to loss is greater and more effective because people are not conscious of the loss (Chira, Adams & Thornton, 2008). Loss aversion is also known as an individual's mental punishment for the same amount of loss or benefit (Barberis & Huang, 2001). Most people seem to be more distressed about the possibility of losses than the enjoyment they have seen of equivalent benefits (Luu, 2014). Losses that happen after gains are perceived to be less severe than losses that occur after previous losses (Barberis & Huang, 2001).

*Mental Accounting:* The mechanism by which people interpret and evaluate market transactions in relation to their financial decisions is alluded to as mental accounting (Barberis & Huang, 2001). It can also be defined as "the process by which people think about and evaluate their financial transactions" (Barberis & Huang, 2001, p.1248). Mental accounting is led by

investors controlling and arranging their portfolio investments in separate accounts (Ritter, 2003). Rockenbach (2004) indicates that there is often no link between different alternative investments as it is beneficial for free arbitrage pricing.

**The Market Factors Theory**

It is widely known that market factors are not part of behavioural factors because they are external in nature and affect investor behaviour. They, however, influence behavioural and rational investors in several ways, such that they are not sufficient if market variables are not considered when assessing the behavioural factors influencing investment choices. DeBondt and Thaler (1995) assert that "financial markets can be affected by investors' behaviours in the way of behavioural finance."

According to the authors, investors have mixed reactions, either overreaction or underreaction to price changes, any news, predicting the future in terms of past patterns, and less emphasis on the dynamics of the stock market. Thus, these market conditions have an impact on people's decision-making. Some of the factors influencing market decision-making by investors include market information; past stock patterns; price shifts; customer preferences; over-reaction or under-reaction to stock price changes; and the dynamics of stocks (Waweru et al., 2008). Usually, variations in the fundamentals of stocks, rates and information in the market lead to investors' over and under-reaction to price fluctuations. These variations have a significant effect on the decision-making behaviour of investors. Over or under-reaction by investors brings about diverse investing techniques, which has an impact on their investment decisions.

Investors' choices are heavily affected by market information as they try to concentrate on those stocks that are well-known and often place emphasis on those developments that draw high interest in the markets (Waweru et al., 2008). Diverse attention-snatching events affect investors' decisions even if they do not know whether or not they will lead to improved future outcomes (Barber & Odean, 2000). Investors prefer to rely on the information on stocks as they make decisions. Price movements in markets affect investor behaviour (Waweru et al., 2008). Investors buy and sell stocks that have gone through increased price volatility in the recent past; hence, price fluctuations are perceived to be an attention-grabbing phenomenon in the market (Odean, 1999).

Caparrelli et al. (2004) also decided that decision-makers are seeking to move with the stream of others if there is a price movement. As a result, investors will wrongly predict the returns of shares, which may have a major effect on their investment decisions (Waweru et al., 2008). Odean (1999) notes that buyers and sellers are interested in those stocks that lure them, but the choice of investment stocks is often affected by investor perception and expectations. Some of them go for those securities that display satisfactory outcomes, but most logical investors want to sell those that have suffered losses in the past. That helps investors escape taxes.

**The Herding Effect**

A herding effect on the stock market is characterised as a propensity for investors to imitate the behaviour of others. Experts carefully move through the herding process because investors are choosing to give more attention to collective information rather than to private information, which

results in a change in prices from their central value. Academic investigators often give a premium to herding since its effect on market volatility can affect the characteristics of risk and return models, and this influences the outlook of theories on asset pricing (Tan, Chiang, Mason & Nelling, 2008).

From a behavioural viewpoint, herding can trigger certain emotional biases like conformity, congruity, and cognitive conflicts, like home bias and gossip. Investors would prefer herding if they assume that herding will enable them to obtain useful and convincing information. The output of financial experts, such as fund managers or financial analysts, is typically measured by a highly subjective systematic assessment on a relative basis and by reference to their colleagues. Here, herding may lead to the evaluation of expert performance as low-capacity peers may duplicate the actions of their high-quality colleagues to improve their professional credibility (Kallinterakis, Munir & Markovic, 2010).

In the markets, herding investors base their decisions on those of the crowds to buy or sell stocks. On the other hand, educated and rational investors generally disregard the movement of the masses, making the market productive. Herding, on the other hand, results in a dysfunctional market, as evidenced by speculative bubbles. Generally, herding investors behave in just the same manner as primitive men who had no education and no knowledge about the immediate environment and assembled in groups to help each other and to ensure protection (Caparrelli et al., 2004). Several factors influence investor herding behavior, including overconfidence, investment volume, and so on. The more optimistic buyers and sellers are, the more they focus on their own information to decide. Here, they tend to be less active in herding

practices. If investors spend a significant amount of money, they prefer to mimic the actions of others to minimise the threat, at least in the way they think. Moreover, herding preference often relies on classes of investors. For example, individual investors appear to imitate the crowd in making investment decisions more than institutional investors (Goodfellow, Bohl & Gebka, 2009).

Waweru et al. (2008) suggest that herding is capable of driving trading activities and building impetus for business. However, the effect of herding can be decreased when it exceeds a certain amount since the expense of pursuing the herd could rise in order to achieve an increasing excess gain. Waweru et al. (2008) describe the investment decisions that buyers and sellers might be influenced by: buying, selling, selection of stock, period of time to retain stock, and amount of stock in the market. The researchers maintained that the buying and selling decisions of investors are greatly influenced by those of others, and herding behaviour allows investors to feel regretful about their choices. For other decisions, such as stock preferences, length of time to hold stock, and amount of stock to trade, the conduct of herding seems to have less effect on investors. That being said, these observations are focused on the case of institutional investors; thus, the outcome could differ from that of individual investors because, as noted above, the former prefer to invest more than the latter.

**The Life-Cycle Theory**

The life-cycle concept appears first in two research studies carried out in the early 1950s by Franco Modigliani with Richard Brumberg, a graduate student (Modigliani & Brumberg, 1954; 1980). The theory provides a clear

account of consumption and savings, but it is based on fundamental underlying rules that could be used to expand the model to deal with a wide variety of consumer and savings problems, most of which were not considered in 1950 (Ando & Modigliani, 1963). For example, social security and many other investment choices are now prevalent in contemporary times and, while they were not included in the original framework, the structure can easily be expanded to help explain the implications of alternative policies (Bodie, Treussard & Willen, 2011; Hagemann, 2005). Ando and Modigliani (1963) extended the life-cycle theory with the conception that financially literate people are generally rational and diligent in buying decisions, including consuming far less to ensure that there exists a match between earnings and consumption. The generalisation of the life-cycle hypothesis brings to the fore the relevance of financial literacy as a financial behaviour factor in explaining investment decision making.

Ando and Modigliani (1963) suggest that financial savings arrangements are put in place in order to provide an incentive even when profits decline. In so doing, the individual can achieve a greater standard of living throughout his or her life. The life-cycle theory was included in this study to build another solid foundation for the examination of an individual's decision-making concerning investment. The study investigated the influence of personal investment behaviour and culture on investment decision making and identified financial literacy as one of the variables explaining personal investment behaviour. Therefore, this concept was adopted to evaluate the effect of financial literacy on an individual's investment decision-making as it offers comprehensive awareness of the challenges in the research.

**The Models Underlying Financial Risk Perception**

The analysis of financial risk perception studies over the years has made available two essential theories in the analysis and evaluation of the subject matter: the classical decision framework (traditional finance) and the psychometric model (behavioural finance). The classical decision theory shows that risk perception is affected by quantitative factors such as probabilities and outcomes (Koonce et al., 2005; Cohen et al., 2008). The psychometric paradigm, on the other hand, is a psychological study championed by Fischhoff et al. (1978), which holds that "risk is subjectively defined by the individuals who may be influenced by a wide array of psychological, social, institutional, and cultural factors" (Slovic, 2000, p. xxiii). The two frameworks made references to some inevitable factors and circumstances influencing the individual perception of risk, which are relevant to explaining decision-making, for instance, investment decisions.

The extant literature on risk perception is mainly focused on fields such as technology and health rather than on the financial/investment sense. Even so, such preliminary studies provided a strong foundation for investigations into the perception of financial risks, especially from a psychological or behavioural viewpoint. In this regard, Fischhoff et al. (1978) assessed the perceived risk of 30 different activities and technologies by asking the respondents to score each activity on a seven-point scale. The researchers derived two factors from nine items (for example: control, newness, common dread, and severity) and, along with perceived gain, 67% of perceived risk variance was defined. Most notably, Fischhoff et al. (1978) reported that risk perception can be modelled and measured using a

psychometric paradigm. Extending the risk features and activities adopted in Fischhoff et al., Slovic, Fischhoff and Lichtenstein (1980) designed a detailed risk perception test in which 90 distinct hazards are measured on 18 risk characteristics. The risk characteristics assessment via the factor analysis resulted in three factors: dread, unknown/familiarity, and the number of people affected. Slovic (1987), given previous psychometric studies, presented a risk perception analysis that adopted two key factors: dread and unknown. Each of the factors involves several risk characteristics.

**The Traditional and Behavioural Theoretical Foundation for Risk Tolerance**

The importance of risk tolerance in explaining individual financial investment decision-making has widely been touted and confirmed in the literature. According to Snelbecker, Roszkowski and Cutler (1990), as cited in (Grable, 2008, p.4), "Risk tolerance is an important factor that influences a wide range of personal financial decisions". Two conceptual perspectives in the literature have primarily demonstrated risk tolerance and its relationship to financial/investment decision making. They include traditional finance (normative models) and behavioural finance (descriptive theories) (Grable, 2008; Guillemette et al., 2012). All in all, while the normative models describe how individuals can make decisions under the assumption of rationality in the personal decision-making process, the descriptive theories explain how and why people actually make decisions, including irrational ones (Grable, 2008).

The theoretical association between risk tolerance and investment decisions is connected to obtaining enormous backing from the traditional financial frameworks, most of which presume that individual investors are rational. The EUT presented by Von Neumann and Morgenstern (1947) is one

of the most widely used theories to explain the nexus between investor risk tolerance and asset allocation decisions from this viewpoint (Grable, 2008). Theoretically, people should make choices to optimise their anticipated utilities and risk aversion forms part of the utility function (Hanna & Cheng, 1997; Yao, Hanna & Lindamood, 2004). From the EUT viewpoint, risk aversion is seen as a concave utility function, while risk tolerance is shown as a convex utility function (Grable, 2008). Respectively, for any amount of expected return, the risk has to be reduced, and for any degree of risk, the expected returns should be greatly increased (Elton & Gruber, 1999).

Even so, reality has shown that investors do not embrace such normative theories; rather, they prefer to use heuristics to build their investments (de Dreu & Bikker, 2012). As a consequence, another line of thought focused on behavioral or psychological theories has been designed to explain this occurrence. Behavioural theorists generally believe that people's decisions are not always rational and can often include "behavioural biases or cognitive errors" (de Dreu & Bikker, 2012, p. 2146). Investors have been found to take inspiration from the 1/n asset allocation rule, which essentially distributes their contributions evenly between various funds without adopting any of the traditional financial frameworks (Benartzi & Thaler, 2001; Huberman & Jiang, 2006). These behavioural biases in investment decisions are traced to limited attention, memory, education, and processing skills (de Dreu & Bikker, 2012) related to investors' financial illiteracy (Gallery et al., 2011). Therefore, the investment decisions of individual investors can be connected to the financial literacy level of such people.

The prospect theory, as reviewed above, also explains individuals' irrational behaviour and the associated variation in risk tolerance. Theoretically, people view benefits and losses differently. People prefer to prioritise losses relative to gains (i.e., loss aversion), so their risk toward gains is distinct from losses (Kahneman & Tversky, 1979, 1984). In addition, they are more likely to take actions based on benefits and losses instead of their asset states, against the traditional financial frameworks (Kahneman & Tversky, 1979; 1984). The preceding analogy, investment decision optimization, depends on individuals' takes for risk depending on the number of gains or losses.

**The Dual Process Theory**

The dual process framework depicts the influence of either managed or unmanaged cognitive processes on human decisions and covers the elaboration likelihood and heuristic-systematic models (Greene et al., 2001). In the elaboration likelihood model proposed by Petty and Cacioppo (1986), individuals differ in how information is processed. Their level of motivation and ability are affected by their varying thoughts, often referred to as elaboration. The ways of processing information as conceived in this framework include central and peripheral routes. The central route provides insight into how people are motivated and how they think about the message. Here, they are evaluating the message to assess whether it makes sense or not and determine its potential gains. With respect to the peripheral route, people have no intention of processing the message and indeed have no interest in the subject matter. Consequently, they end up adopting mental shortcuts in processing such information carried in the message in question. They may be

influenced by emotional states such as being happy in the course of taking a decision and exercising herding behaviour by mimicking others' responses to similar issues.

The heuristic-systematic model developed by Chaiken (1980) suggests two possible ways of assessing information, namely systemic and heuristic processing. With heuristics, people are ruled by availability, accessibility, and applicability. This shows how selective individual investors are with respect to the kind of information available for investment decision making, which may bring about systematic biases, as enshrined in Kahneman and Slovic (1982). Consequently, an individual tends to rely on what others have adopted in such decisions without any assessment of the content of the decision-making message, which results in irrationality. With systematic processing, "an individual understands the available information through careful analysis, which reduces their vulnerability to behavioural biases" (Onsomu, 2018).

The preceding analysis suggests the form of thinking that people leverage, whether they are affected by biases or otherwise. Objective information processing emanates from rational thoughts, which serve as a yardstick for efficient decision-making. It constitutes a holistic assessment of stocks, sectoral performance, and the gathering of relevant information of special interest. Such decisions demand information relating to the governance of the firm and its future investment plans for prospects. Other than that, decision-makers may resort to mental shortcuts, which may result in irrational decisions engineered by biases. It leads to the selection of inappropriate securities, which are not bankable.

The distinction between the two models under the dual process framework has been questioned severally in the literature on the ground of their overriding each other (Onsomu, 2018). According to Neys (2006), the systematic model mostly tends to override the heuristic model. Initially, the individual investors may be unable to properly process the information but build momentum in the processing as time passes, suggesting the impossibility of categorising investors as being systematic or heuristic. But they can work together at the same time. Advocates for the theory maintain that the extent of information processing has a significant effect on decision-making. For instance, the inappropriate processing of information is believed to have an association with irrational decision-making. This points to why investors ought to be considering information processing in order to arrive at an optimal decision. This theory serves significantly in this study by providing the relevant investors' financial literacy level with respect to the assessment and processing of such information for value maximization.

## Review of Related Concepts

This section provides the conceptual literature review, defining various concepts and issues relevant to the course of the study. It covers the concept of behavioural finance, the concept of culture, and the concept of decision-making.

### The Concept of Behavioural Finance

Even though the concept of finance has been at the forefront of research for centuries, behavioural finance has just in recent years begun to gain attention. Given the fact that behavioural finance remains a new phenomenon, it has been defined in diverse ways but points to the study of

human behaviour in finance (Luong & Ha, 2011). To examine the interaction of individuals' financial behaviour with culture and investment decision making, it was highly unacceptable to escape the provision of a vivid definition of the concept of behavioural finance.

Psychologists, Daniel Kahneman and Amos Tversky, contributed to the study of psychology and finance with the introduction of behavioural finance in the 1960s, which is primarily about how individuals behave in financial systems and markets (Anum & Ameer, 2017). Essentially, behavioural finance is all about how decisions about the financial well-being of individuals and firms are influenced by psychology in financial establishments (Nofsinger, 2001). Also, behavioural finance is "a branch of finance that studies how the behaviour of agents in the financial market is influenced by psychological factors and the resulting influence on decisions made while buying or selling the market, thus affecting the prices" (Agarwal, Verma, & Agarwal, 2016, p.211). The definition suggests the relevance of both socio-economic and psychological factors in personal financial decision-making. It also attempts to clarify why it is logical to say that markets are inefficient.

According to Sewell (2007), behavioural finance is an analysis of the effects of psychology on the actions of financial professionals and their resulting impact on markets. This restricts psychology's influence on the practises of experts in finance while observing the underlying impacts on the various instruments in the market. Shefrin (2000) also levelled behavioural finance to the actions and inactions of financial practitioners in the markets based on psychological factors.

Belsky and Gilovich (1999) refer to behavioural finance as' behavioral economics' and assert that it incorporates the two fields of psychology and economics to clarify why and how people tend to make irrational or unreasonable decisions when spending, investing, saving, and borrowing money. According to Barber and Odean (1999), this concept relaxes the conventional principles of financial economics by integrating these apparent, structural, and very human deviations from rationality into mainstream financial sector models. The propensity of humans to be overly confident triggers the initial prejudice of investors, and the second is caused by the human desire to escape remorse. Thus, behavioural finance can be seen as a field of finance that offers an interpretation of market anomalies using established psychological biases instead of ignoring them as "possible results aligned with the market productive hypothesis" (Fama, 1998). It is believed that individual investors and market dynamics are affected by the information conditions and specific features of market players (Banerjee, 2011).

The concept of behavioural finance or financial behaviour is related to three main concepts, namely financial literacy, risk perception, and risk tolerance.

***Financial Literacy***- In daily life, financial knowledge and skills in personal money management are important (Arianti, 2018). Financial literacy is widely recognised as a critical tool for development; for instance, budgeting, saving, investing, and managing risk, all of which are critical for people, families, and businesses in their growth. Financial literacy has become a major issue for most economists around the world, among the various types of literacy. Financial literacy has been shown in research to have a role in making wise

investment decisions (Fazal, 2017). Financial literacy, according to Krishna, Rofaida and Sari (2010), helps people avoid financial problems. According to the Financial Services Authority (2013), financial literacy is a set of procedures or activities aimed at improving the knowledge, confidence, and competence of customers and the general public so that they can better manage their money.

Financial literacy, according to Sabri (2011), is the fundamental information that individuals need to thrive in contemporary society. This fundamental understanding entails being aware of and comprehending the complicated concepts of spending, saving, and investing. Financial literacy is often seen as a specialised kind of consumer competence related to how to properly handle one's financial affairs or as a type of human capital focused on personal money. According to Nye, Pete and Cinnamon (2013), "financial literacy is a measure of one's ability and confidence to handle one's own money via appropriate short-term decision-making and wise, long-term financial planning while being aware of life events and changing economic conditions".

In recent years, several large banks, government agencies, grass-roots consumer and community interest groups, and other organisations have focused on financial literacy. Policymakers and others are concerned that customers do not know the basic understanding of the tools and financial ideas they need to make the greatest financial decisions possible (Arianti, 2018). Deficits in financial literacy can affect a person's or a family's daily money management and savings capacity for long-term aims such as buying a home, attending college, or funding a pension. Unproductive money management

will perhaps lead to consumer behaviours that force them to be in danger of financial ruin (Mandell & Lewis, 2006). Competitive pressures and market operations are jeopardised when customers cannot properly handle their money. Well-informed participants contribute to the creation of a market that is more efficient and competitive (Monticone & Chiara, 2010).

***Risk Perception*** – People's subjective judgments about the probability of undesirable events such as damage, sickness, disease, and death are referred to as risk perception (Paek & Hove, 2017). In health and risk communication, risk perception is essential because it affects the dangers people are concerned about and how they respond to them. The cognitive dimension, which refers to how much individuals know and comprehend hazards, and the emotional dimension, which refers to how they feel about them, are the two major aspects of risk perception (Paek & Hove, 2017). Investing choices are inextricably linked to an individual's risk perception. Because risk is the most important financial element, investors exhibit a variety of risk-taking behaviours. Some investors, despite their risk aversion, choose hazardous positions because of their risk perception (Nguyen et al., 2017).

Risk perception, according to Pidgeon et al. (2012), includes people's beliefs, attitudes, judgments, and emotions, as well as broader societal or cultural values and dispositions. Because risk perception is extremely subjective and influenced by social factors and cognitive biases, the same danger will mean different things to different individuals in various situations. Risk perception is a unique kind of interpretation, a way of making sense of a complicated environment in order to plan, select, and act in it. A variety of qualitative variables may impact risk perceptions. According to Kahneman

and Riepe (2018), these include the potential for huge catastrophic losses, the unpredictability of outcomes, knowledge or familiarity, and affective or emotional responses. Many writers have followed Fischhoff et al. (1978) in suggesting that risk perceptions are a result of a mix of uncertainty (i.e., a lack of information) and the severity of the consequences.

Individual actors' risk perceptions are critical in a setting where they have little knowledge and are only partially rational, and when there is no generally agreed-upon notion of how risk should be conceived or assessed (Diacon & Ennew, 2011). A good example of such an environment is the personal financial services industry. Financial risk perceptions are based on the well-known psychometric paradigm, which uses psychometric scaling techniques to provide quantitative measurements of perceived risk and reward. The findings add to the growing body of knowledge in behavioural finance by demonstrating that individual risk perceptions in personal financial services may be classified into five major categories (Wagner & Wagner, 2015). These are mistrust in the product and/or supplier, the severity of negative effects, return volatility, lack of knowledge and/or observability, and regulatory failure.

***Risk Tolerance*** -Financial risk tolerance, according to Cordell (2001), is the greatest degree of uncertainty someone is prepared to tolerate while making a financial decision that involves the chance of loss. In financial planning, risk tolerance refers to the amount of variation in investment returns that an investor is prepared to accept. When it comes to investing, risk tolerance is crucial (Twin, 2020). A person's capacity and desire to accept fluctuations in the value of their assets should be reasonable (Grable, 2017).

**The Concept of Culture and Cultural Adherence**

Culture is a loaded word that has various conceptual descriptions from different perspectives (Laban, 2014). The current study referred to culture (Glazer & Karpati, 2014, p.23) as "the character of a group of people who share a common history and perception of appropriate normative behaviors, values, and beliefs." The basic attributes of culture are transmitted from one person to the next through the mechanisms and processes that people have built into the culture. Cultural entities, including countries, communities, organizations, departments, sex groups, families, etc. Culture is the accumulation of a group of people's meanings, knowledge, values, dispositions, hierarchies, experience, beliefs, religion, ideas of time, roles, geographical connections, cosmic concepts, and material items and belongings gained through generations via individual and collective effort (Zimmermann, 2017). A culture is a group of people's ways of life—the behaviours, beliefs, values, and symbols that they simply accept and pass down via communication and imitation from generation to generation. Culture is a way of connecting with others via symbols (Spradley, 2016). Some of the symbols utilised include skills, knowledge, attitudes, beliefs, and motivations.

The cultural values of a country are the desirable ideals that govern the behaviour, feelings, and thoughts of individuals. They describe why we perceive phenomena (e.g. organisational processes) or experience incidents (e.g., someone's late appearance at an event or a meeting) as we do (Leung, 2002). The social axioms of culture – that is, elevated fictions of universal beliefs that people hold about how people communicate with each other or with things around them – provide a basis for understanding the fundamental

assumptions that govern people's attitudes, emotions, and perceptions of incidents. Social axioms reflect what people consider to be correlational facts and help people communicate with their surroundings and other people. Cultural values and social axioms are important in shaping what people wear when they collect information on a decision-making situation, how they perceive information, and what kinds of reasons people provide to explain their choice.

Adherence is the “degree to which a person's behaviour conforms to the standard ethical prescription” (Matthey et al., 2010). Thus, cultural adherence is the method and degree to which an individual's belief system conforms to what is socially acceptable as a group's or society's way of life (Siegel et al., 2012). Cultural adherence can be grouped as egalitarianism, hierarchism, individualism, and fatalism. Egalitarianism is a societal attitude in which individuals are expected to regard each other as moral equals (Steckermeier & Delhey, 2018). Egalitarianism is a political, social, and economic ideology that argues for the abolition of social and economic inequalities in areas such as labour, legal systems, gender issues, and wealth. According to most research in political philosophy (Bell & Zagumny, 2013), justice and fairness are often associated with equality. The basis of domestic social activity and contact, as shown in households, hamlets, and non-discrete groupings, is characterised by trade and reciprocity systems based on a strong belief in equality. Egalitarianism is the philosophical idea that everyone is born equal and should be treated as such. When people's income and wealth levels are equal, society is characterised as "egalitarian." Some nations have a higher level of equality than others (Siegel et al., 2012).

Cultural distinctions serve as a social foundation for creating and ranking civilizations based on their similarities and variances. This strategy, also known as cultural hegemony or hierarchy, suggests that culture is not self-contained but rather dictated, regulated, and controlled by powerful organisations (Kennedy, 2019). When a community has several different kinds of people, one group is usually larger or more powerful than the rest. Most civilizations are made up of a dominant culture, subcultures, and countercultures. The dominant culture in a society is the group whose members make up the majority or have more clout than other groups (Society and Culture, 2020). A subculture is a group of individuals who live in a manner that differs from but is not in opposition to, mainstream society. A subculture is a subculture inside a larger society (Society and Culture, 2020).

Individual needs are prioritised above the requirements of the community as a whole in cultural individualism. People in this society are regarded as self-sufficient and autonomous. Individual attitudes and preferences have a strong influence on social behaviour. Individualistic cultures predominate in North America and Western Europe (Cherry, 2013). Individualistic culture is a civilization defined by individualism or the priority of the individual above the whole community. Individualistic cultures are focused on the individual, rather than associating with a collective mindset (Charlotte Nickerson, 2021).

**The Concept of Investment Decision Making**

Economic agents are in the business of making decisions regarding what matters to them. Glazer and Karpati (2014) believe decision-making consists of analysing information relevant to a problem and a situation in order

to select the desired course of action. The information to be assessed is focused on what is true and accurately interpreted, as well as on the scope in which it is collected. In addition, main information and situational variables trigger schemas (Weber & Morris, 2010) that direct individuals' thinking via the decision dilemma. The fact that investigators are even examining decision-making processes indicates that decision-making can be guided, that it is supposed to be rational, and that people could learn to become more efficient and successful deciders (Lipshitz, Klein, & Carroll, 2006). More often, the decision-making process is guided by a tightly rational economic concept. Getting to a decision allows the decider to assess the pros and cons of the different choices and to draw a decision that measures possible losses against future benefits (Tversky & Kahneman, 1992).

Countless considerations, including the existence of options, the level of the decider's accountability, the connections between stakeholders (e.g., who is influenced by the decision, how beneficial the decision is to a person's character), the identification of common patterns, and how people create the story (i.e., justify the circumstance to oneself), are all knowingly or unknowingly weighed. Besides this, the cultural context determines the extent to which these added variables influence decisions taken, and whether or not an individual understands that culture plays an important role in making a decision. The interaction of the underlying factors leads to how people make sense of events.

In the view of Paek and Hove (2017), investment decision-making is the analysis of information in relation to investing in a given financial product or service. The Investment Choice refers to the decision taken by investors or

top-level management about the amount of money to be invested in various possibilities (Business Jargons, 2015). Simply put, the investment decision is the choice of assets in which the company or individual will invest its money. This may be a long-term or short-term situation. For this research, individual-level investment decisions are considered. The long-term growth potential of an investor who invests all of his or her money is maximised. If that investor, on the other hand, does not have enough cash on hand, he or she will be unable to pay their bills and will soon go out of business. As a consequence, investors must find the right mix between long-term and short-term investments. Choosing an investment also entails choosing which investment to make.

Christanti and Mahastanti (2011) added that two factors influence an individual's investment choices: a) the degree to which decisions may maximise wealth (economic); and b) behavioural incentive (investment decision based on an investor's psychological aspect). Jose, Rugimbana and Gatfield (2012) indicate that a person's investment choice revolves around the spending of cash on assets that generate the greatest return over time. As a consequence, the choice is about which commodity to buy in order for the individual to make the most money. To do so, a person must establish a balance between his or her short-term and long-term goals. An individual needs money to pay off his obligations promptly. Keeping all of the money, on the other hand, indicates that the individual is not investing in commodities that will aid the company's growth. However, there might be a long-term view (Jappelli & Padula, 2011).

**Summary of the Chapter**

This chapter provided relevant works of literature on the subject matter, in response to the research objectives. The study investigated the influence of personal investment behaviour and culture on investment decision-making. The review covered the conceptual literature review, theoretical/conceptual frameworks, and empirical review.

This section provides the conceptual literature review, defining various concepts and issues relevant to the course of the study. It covers the concept of behavioural finance and the concept of culture. The others include the concept of decision making and the financial sector development of Ghana.

The theories underpinning the assessment of the influence of personal investment behaviour and culture on investment decision-making and the sub-theories and factors defining the human behavioural foundation were reviewed. They include heuristic theory, prospect theory, herding effects, and market factors. The dual process theory, explained by the elaboration likelihood and heuristic-systematic models, was also reviewed in relation to the objective in question. Cultural adherence was also examined in order to provide a more comprehensive explanation of the importance of cultural adherence in individual investment decision-making.

# CHAPTER THREE

# EMPIRICAL LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

## Introduction

This chapter focused on the review of related empirical studies on each of the research objectives. Based on the empirical studies and theories highlighted in the previous chapter, a conceptual framework was developed to guide the direction of the study. The review begins with empirical studies on behavioural finance factors and investment decision-making, followed by cultural adherence and investment decision-making, personal financial behaviour and investment decision-making, and demographic characteristics. Personal financial behaviour, cultural adherence, and investment decision making are discussed in depth. The chapter also contains the conceptual framework of the study, which explains all the key concepts in this study and their relationships. The chapter ends with a summary of the empirical studies reviewed.

## Financial Literacy and Investment Decision Making

Abdeldayem (2016) assessed the financial literacy level of people who invest in Bahrain. Also, in the study area, there was a nexus between financial literacy and investment decisions. The primary data collection covered 228 investors in Bahrain. The approach of Lusardi and Mitchell (2006) was adopted to determine investors' degree of financial literacy. The data analysis was carried out using the Pearson Correlation, T-test, and Chi-square test. The findings suggest that the investor possessed poor financial literacy (38.6%) and was far from the average needed. With the analysis of the

degree of financial literacy regarding individuals' demographic factors, the study found that women are predominantly less financially literate than men; participants between the ages of 41 and 50 are much more educated than all other age groups and financial literacy is strongly associated with education. In addition, respondents in a high financial literacy section have a greater degree of knowledge of all financial instruments, with the exception of deposit certificates and post office savings products. Furthermore, respondents in the weak financial literacy group primarily showed an interest in investing in conventional and safe financial instruments and did not engage much in complex instruments that are relatively more volatile and can have higher returns. The study, therefore, established a significant association between financial literacy and investment decision-making. Theoretically, the conceptual framework failed to capture other financial behavioural factors in the literature. The sample size used for the study does not support the statistical standards required for a social science investigation. Furthermore, the findings are limited to individual investors in Bahrain and areas with similar market features.

Sabri (2016) offered an analysis of the impacts of financial literacy on financial investment decisions by Millennials in Malaysia. This research, published in 2015, carried out an online survey using questionnaires to explain the underlying issue. The sample size obtained was 101, covering those ages 18 and 35 years (the millennial age group). The Chi-square and cross-tabulation techniques were used to assess the association between the financial literacy level and investment decision-making among the investors in Malaysia. The Pearson chi-square value derived was 3,010, suggesting that it

was statistically important at 10%. It has been established that the degree of financial literacy is linked to investment decision making. The Millennials in the country have greater numeracy literacy and are not financially literate with respect to inflation problems. That being said, while investors are highly literate when it comes to stocks, they are unable to distinguish between stocks and mutual funds. The sample size adopted in the analysis does not meet the statistical criteria needed for such studies. Moreover, results are limited to individual investors in Malaysia and areas with similar market characteristics.

Aloudi et al. (2017) assessed the influence of financial literacy on employee retirement plan decisions in the Kenyan insurance market. The study adopted an explanatory research design with participants selected using a stratified and proportionate random sampling technique. The analysis was done using ANOVA and Pearson correlational techniques to evaluate the data derived from questionnaires. In addition, multiple linear regression and multinomial logistic regression were used to test the hypotheses adopted in the conceptual framework. The results affirmed that financial literacy does not contribute substantially to retirement preparedness. The report stated that, due to the sufficient availability of various financial services and products among employees within insurance companies, they are making sensible financial choices to boost their trust in retirement.

**Risk Perception and Investment Decision Making**

Sindhu and Kumar (2014) determine the effect of the risk perception of individual investors in Kerala State on their decisions in mutual funds. Based on existing literature and conversations with professionals in the field, a range of factors have been established that affect investor risk perception and,

ultimately, investment decisions. The study adopted both descriptive and explanatory research designs. It relied on both secondary and primary data to obtain relevant data. The secondary data for the study was gathered from books, journals, periodicals, publications of various mutual fund organizations, websites, government publications, etc. The primary data required for the study was collected from 900 individual investors in the area who are investing in mutual funds. Multi-stage sampling was employed for the collection of participants' responses. The finding suggests a significant positive association between individuals' risk perception and investment decisions in mutual funds ($p = 0.000$). The findings in this report cannot be generalised since the study failed to address specific risk variables and the exclusion of other factors such as those relating to culture.

Muthuswamy and Devi (2015) investigated the influence of investors' risk perception and information seeking behaviour on investment decisions. The study adopted the quantitative researcher design and used questionnaires in the collection of data from selected investors in India. The questionnaire was submitted for content validity assessment, which was judgmental. The data obtained from the pretesting was also subjected to a reliability test through the Cronbach Alpha technique. Two key observations were made, the first based on how risk perception, investors' information seeking behaviour, and decision-making vary across their demographic features, and the second suggests that risk perception and investors' information seeking behaviour affect investment decisions. This work also utilised a small sample size just like the other empirical studies, making the analysis statistically deficient.

Bairagi and Chakraborty (2018) tested the impact of risk perception on an individual investor's decision-making. The study is descriptive and exploratory in nature. It adopted both secondary and primary data sources for the analysis. Secondary data was collected to support different topics, such as what is supported by the risk perception predictor. The primary data was gathered from retail investors, with 437 fully completed responses, using a self-administered questionnaire, and the survey was also undertaken in the NCR area of Delhi, India. The results indicate that decision-making by investors in equity investments is heavily affected by the individuals' level of perception. The reason for this is that such investors are extremely fiscally conservative, which reflects sentiment, affective, and cognitive traits. The sample size taken in the study does not comply with the statistical requirements necessary for such studies.

**Risk Tolerance and Investment Decision Making**

Nguyen, Gallery and Newton (2016) looked at key risk tolerance predictors like client financial literacy, trust in the financial advisory service, and length of service relationship. The authors also evaluate the effect of financial tolerance for risk on decision-making in the sense of financial advice. A conceptual framework and related hypotheses were developed and assessed using survey data from 538 financial adviser clients in Australia. The findings suggest a positive association between clients' risk tolerance and investment decision-making. In addition, client trust and the length of the interaction with the service were found to be directly correlated with clients' financial literacy and risk tolerance.

Ainia and Lutfi (2018) ascertained the effects of risk perception, risk tolerance, loss aversion, and overconfidence on individual investment decision-making. The staff at Surabaya and Jombang, East Java, were sampled in this report. The survey design included 400 participants using self-administered questionnaires. The PLS-SEM (Partial Least Square-Structural Equation Model) was adopted in the data analysis. The findings showed that perceived risk had a negative and substantial impact on investment decision-making, that risk tolerance and overconfidence had a positive and significant influence on investment decision-making, and that loss aversion had no impact on investment decision-making.

Pak and Mahmood (2015) analysed the association between personality traits, risk-taking and investment decisions of potential private investors in a post-Soviet transition country, i.e., Kazakhstan. The research offers useful insights for investment analysts and public officials to consider the behaviour of investors in the study area. The quantitative approach was adopted to assess the personality characteristics, risk-taking actions, and investment decisions of the participants. The survey covered school teachers and students in Kazakhstan. Based on the literature, two multiple regression analyses were applied and tested in response to the hypotheses in the study. The SPSS and EViews software packages were used to analyse the data. The study's results suggest that personality characteristics have some amount of effect on the individual's risk-tolerance behaviour, which in turn affects investment decisions on stocks, shares, and bonds. The findings of this study indicate that investment advisors should consider, among other factors,

personal attributes and their risk tolerance when offering investment advice to investors.

**Other Personal Behavioural Financial Factors Influencing Investment Decision**

Luong and Ha (2011) investigated behavioural factors affecting the decisions of individual investors on the Ho Chi Minh Stock Exchange. Then they further examined the nexus between underlying factors and investment performance. The hypotheses for the study were premised on relevant behavioural theories. These hypotheses were submitted to various tests by means of a questionnaire administered to 172 selected individual investors. The data obtained was analysed using SPSS and AMOS tools. Semi-structured interviews were also administered to selected managers of the Ho Chi Minh Stock Exchange to ensure a better understanding of these behaviours. The result shows five behavioural variables influencing individual investors' investment decisions on the Ho Chi Minh Stock Exchange. They include herding, market, prospect, overconfidence-gamble's fallacy, and anchoring-ability bias. Almost all of these factors have modest impacts, while the market effect has a profound influence. The study also found a significant correlation between the behavioural factors and investment performance, except for market factors. The three factors found to influence investment performance include herding (including buying and selling; stock preference; stock trading volume; herding speed), prospect (including loss aversion, regret aversion, and mental accounting), and heuristic (including overconfidence and gambler's fallacy). Given the fact that the study sampled relatively high respondents (N = 172) and satisfies the criteria of statistical methods, it is proposed that a much larger sample size be used in further research to better represent the

practical situation of personal investment decision making. With the participants being chosen from the ten largest securities firms, the generalisation for the entire population would amount to a catastrophe regardless of applying the random sampling technique.

Shiundu (2009), in a study of individual investment decision-making, confirmed that there appears to be a certain amount of association between the variables defined in the behavioural finance theory and previous empirical establishments as the average equity investor. The focus of the research was to identify the factors that influence investment decisions on the Nairobi Stock Exchange (NSE). The study covered 42 investors out of the 50 investors sampled. A structured questionnaire was self-administered to obtain data from the participants. The questionnaire consisted of 28 items. The obtained data was analysed using frequencies, percentages, mean values, standard deviations, Friedman's test, and factor analysis techniques. The study found that the following are the most significant factors that affect individual investment decisions: the prestige of the company; the position of the firm in the market; the expected earnings, profit, and statement status of the firm; the performance of the previous stock, price per share, sentiments about the economy, and expected dividend by investors. The methodology adopted is flawed with sampling limitations as a result of using just 42 participants out of approximately 1.8 million individual investors on the NSE.

Mahanthe and Sugathadasa (2018) studied the influence of behavioural factors on the financial decisions of individual investors on the Colombo Stock Exchange (CSE) in Sri Lanka, leveraging overconfidence, bias in availability, conservatism, and herding to understand individual investment

decision-making. The structured five-point Likert scale questionnaire was used to collect data from 75 investors in the Western Province using a convenient sampling technique. Multiple regression analysis was used as the key statistical technique to evaluate the study's hypothesis, while the internal consistency of the variables on the questionnaire (mostly greater than 0.70) was carried out using the Cronbach's Alpha test, suggesting a sufficient degree of reliability. The findings indicate that overconfidence, availability bias, and herding effects have a significant positive influence on individual investment decision making in the CSE. Conservatism exhibited a negative relationship with investment decision making but was statistically significant at the 0.01 level. The authors' work does not only suffer from the small sample size syndrome; they also failed to conduct a pilot survey to assess the reliability of the constructs under investigation.

Anum and Ameer (2017) also analysed the influence of behavioural factors on investors' decision-making and investment performance on the Pakistan Stock Exchange (PSE). This research focused on current behavioural finance theories that contributed to the formulation of the hypotheses. The author obtained data from investors via the use of questionnaires from the (PSE). The data was analysed using the SPSS software for both descriptive and inferential statistical analysis. The results of this study indicate that behavioural factors such as heuristics, herding, prospects, and market, have a significant impact on the investment decisions of investors in the PSE. Moreover, the findings show that three variables (heuristic, market, and herding) have a positive influence on investment outcome, but that prospect is the only variable that has an inverse effect on investment performance. With

regard to the application of Cronbach's Alpha test, the researchers conducted a generalised or a one-time test by lumping up all the constructs irrespective of the variables in the specific objectives and the conceptual framework. The principle underlying Cronbach's Alpha test suggests the segregation of the factors according to their specific objectives and subsequently running the test on each of them. This means that items under each objective will produce individual Alpha values and must be more than 0.70.

Antony and Joseph (2017) assessed the effects of behavioural factors influencing investors' investment decisions. Five behavioural variables, including overconfidence bias, representative bias, regret aversion, mental accounting, and herd effect, were analysed to assess investor behavioural biases. The research data (primary data) was drawn from Kerala investors using self-administered structured questionnaires (919 participants) and the analytical hierarchy process (AHP) was adopted to evaluate the strength of the behavioural factors influencing the investors' decisions. The findings suggest that Kerala investors were largely influenced by overconfidence bias and regret aversion. Herd actions had little impact on their decision-making. The design is flawed by the lack of a pilot survey test for the assessment of the reliability of the constructs under study.

Bashir et al. (2013) examined the factors that affect the behaviour of individual investors in Pakistan. Five categories of variables with 34 items were considered as independent factors affecting investment decision-making behaviour of self-image or firm image, neutral information, accounting information, individual financial demands, and various suggestions. Data collection was conducted using self-administered structured questionnaires

covering a 125-sample size (40 finance students from the University of Gujrat, 30 finance teachers from different colleges, and 55 bank employees from Sialkot, Gujranwala, Lahore, and Gujrat). In response to the specific objectives, the data analysis was done using mean, standard deviation, and frequency distribution tables. The mean analytical tool shows that all variables have a small impact on the investor's decision-making behaviour and the accounting information variables were the most dominant, while the recommendation advocate was the least influential category. The frequency distribution showed that out of a total of 33 items, the 6 most influential items belonging to self-image/company image and accounting information were dividends paid, the reputation of the company, feelings about the products and services of the firm, getting rich quickly, the firm's participation in solving social problems, and the firm's position in the industry. The other variables that were noticed to have minimal effect on the order of priority were the advice of a friend or coworker; the thoughts of the majority owner of the firm; the recent movements in the company's stock prices; the religious motive; the opinion of the member of the family; and the suggestion of the broker concerning other variable categories. The design adopted for this study is also limited by the sample size, as in the number of individuals selected to take part in the exercise.

Grover and Singh (2015) looked at the behavioural factors that affect investors' investment decisions in real estate; a case study of Udham Singh Nagar (Uttrakhand) was presented. The research adopted a structured questionnaire for the data collection, covering a sample of 200 real estate investors drawn from the prestigious locations of the Udham Singh Nagar

district of Uttrakhand. To meet the research objective, both descriptive and inferential statistical analyses were adopted. The factor analysis suggests that the 18 questions utilised to evaluate the investment behaviour of the participants were narrowed to seven, i.e., Property Information, Logical Approach, Market Dynamic, Regret Aversion, Hindsight Bias, Herding Bias, and Over Expectation. The findings, therefore, established that the investors of Udham Singh Nagar are motivated by behavioural factors. The Cronbach Alpha value of 0.613 found in this study falls below the 0.70 benchmarks for a meaningful statistical analysis. Furthermore, the findings of this study are restricted to the goods market, specifically the real estate market, and thus cannot be generalized. results cannot be applied in the financial market investment scenario as in this current study.

**Culture Adherence Factors and Investment Decision Making**

The development of cultural theory by Douglas and Wildavsky in the 1980s paved the way for the assessment of risk across the globe. Given the two questions that emerged from the 1990 work of Dake on a measurement instrument for quantitative studies on culture and risk perception, Rippl (2002) proposed a measurement tool in that regard. Firstly, "Can Douglas and Wildavsky's theoretical concept be tested based on data obtained from individuals, as is done by Dake and many other authors?" Secondly, "does the instrument introduced by Dake (Journal of Cross-Cultural Psychology, 22, 61–82, 1991) show sufficient validity, in the sense that hypotheses which could be derived from CT hold when Dake's scales are used?" Six hypotheses were formulated in relation to the instrument framed by Dake, which has been widely utilised in the literature. The instrument was compared with that of

Marris et al. (1996) and then with a pilot survey test conducted in Chemnitz, a mid-sized city in Germany in 1997. The author gathered data from 106 students doing sociology during daily classes where their professors were able to take time for the study to take off. The measurements used by Marris et al. were slightly changed to increase their respective reliability. The measurements with an item-total coefficient of correlation of less than 0.30 were omitted. The sums of the items were determined to make the findings equivalent to those of Dake and Marris et al. for each scale. In response to the first question, individual assessment cannot be a measure of culture but rather a function of processes linked to culture. To provide such an indirect measure of culture, the researcher put forward the following "To test this idea empirically, it should be possible to show their correlations to structural variables such as family structure or preferred social contexts." Regarding the second question, in order to assess the validity of the instrument, a simple theory of measurement was explained in the sense of cultural theory. Using structural equation modelling (SEM), the results show that the measuring instrument provided in Dake (1990, 1991) has been enhanced. Given the capacity of the enhanced instrument to overcome the weaknesses and inconsistencies of the more or less arbitrary usage of diverse measuring instruments in the study of cultural theory, it also failed to link cultural adherence to risk-taking or investment decision making. Rippl (2002) only validated an existing instrument for a much more comprehensive assessment in the literature on cultural theory and decision-making.

Boye (2005) empirically and explicitly examined the influence of culture on the investment decision-making process of selected individuals in

Ghana. The study reported and documented how investors decide, paying special attention to the characteristics of the factors determining investors' perspectives and the choice of investment instruments. The survey research design was adopted using the quantitative data collection strategy with the help of self-administered questionnaires. The primary data was collected from 165 out of the 200 individuals selected from the commercial centre of Accra, the tennis clubs in Accra and Tema, and all the popular Achimota golf clubs in Ghana. The obtained data was analysed using descriptive statistical analysis. The findings suggest that Ghanaians invest because of profit or return on investment. The investment instruments discovered include investing in forex, trading, insurance policies, fixed assets—properties, fixed deposits, "susu schemes", investing in bonds, buying stock, and buying treasury bills. The most secure instruments found include property investment, treasury bills, trading, and investing in foreign currency. Ultimately, the study found that individuals' investment decisions are capable, even though non-conclusive, of being influenced by cultural factors such as uncertainty avoidance, cultural logic, time conception, and decision rules. The inconclusiveness of the effect of cultural factors on individual investment decision making demands a holistic empirical investigation into the matter.

Saputra, Natassia and Utami (2020) assessed the impact of the influence of religious belief that moderates loss aversion on individuals' decisions to invest in stock-type securities, using the Stock Security in Padang City. The research involved 120 individual investors who were picked at random. The analytical approach used made use of a moderation analysis that was processed utilising Smart PLS. The findings suggest that religiosity exerts

zero effect on individual investors' decisions on stock-type securities, whereas loss aversion influences the investment decisions of individual investors on stock-type securities. The hypothesis-testing process shows that religiosity moderation concerning loss aversion seems to have had a significant negative effect on the individual investors' investment decisions in Padang's share securities. The findings in this study cannot be generalised since it covered just investors investing in the stock security in Padang City.

Kiss, Montpetit and Lachapelle (2020) adopted the cultural theory in the assessment of religion and ideology in explaining risk perception in Canada. To adjust cultural theory measures in the Canadian context, the authors conducted four focus group discussions—two each in French and English. The group respondents were asked to explain their impressions of a set of Likert items taken from extant cultural theory and cultural cognition theory studies. The findings of the study indicate that participants' commitment to egalitarianism was highly linked with technological risks, while respondents' commitment to hierarchism was significantly associated with the risks of illegal or dangerous behaviour. Participants' adherence to individualism was also associated with the risks of crime and unhealthy conduct but varied from hierarchism, in that the former was not related to risk perceptions of prostitution and marijuana consumption. Participants' commitments to fatalism were closely associated with the perception of vaccine risk.

Jamaludin (2013) studied the role of religion in the choices and decisions of individual investors. A survey covering 440 workers from Malaysia was used. The results of the Chi-Square test revealed a vast variation

in investment preferences between Muslim and non-Muslim participants. The study found an equal number of Muslims retaining their savings in the default fund and spending a portion of the savings in a unit trust fund. On the other hand, most non-Muslims opted to invest part of their savings in unit trusts. Religious belief was interpreted from a multidimensional perspective and thus two pairs of instruments have been used: the Religious Commitment Inventory (RCI-10) and the Muslim Religiosity. The results showed no substantial differences in investment decisions between people with distinct levels of RCI and Muslim religiosity. These findings indicate that religiosity does not dramatically affect personal investment choice decisions, especially when it comes to spending part of their retirement money in a unit trust.

**Culture Adherence, Personal Financial Behaviour and Investment Decision Making**

Nair and Ladha (2014) examined the fundamental features of Indian investors that affect them in order to achieve their non-economic investment objectives. The conceptual framework suggests that investors' preference for non-economic goals (NEG) is dictated by their beliefs and values, as assessed by a survey conducted with 342 participants who have previous experience in investing in stocks. A structural equation model was specified for estimating the measurement model. Also, the study assessed the mediating influence of social investment efficiency on the effects of investor values and beliefs and their pursuit of NEG. Religiosity and the conviction that progress in society emanates from one's actions are the two main predictors of Indian investors' search for a NEG. The conceptual framework disregards aspects of the financial health of an investor that may affect the desire to follow NEGs.

Regarding the role of values in shaping people's behavioural processes and decisions, Otuo, Agyemang, Abraham and Ansong (2016) looked at the role of values in the decision-making process of share-buying using Ghana as a case study, between 2011 and 2013. In an attempt to comprehend whether self-centred or other-centred personal values influence the processes of investment decision-making of individual shareholders, the researcher adopted both qualitative and quantitative approaches to determine the effect of these variables. The report points out that Ghanaian investors have value preferences and that honesty, living a comfortable life and family safety has the most significant role to play in their affairs and decisions when it comes to investment. But mostly, Ghanaian individual investors are impacted by a stable life compared to share-buying decision-making mechanisms. That being said, these two values have different impacts on the perceptions of Ghanaian investors, which ultimately affect their share-buying decision-making and the companies they want to buy shares from. The study used only a limited sample of 503 individual shareholders, which does not allow for generalisation of the results to other investors. However, through the use of inductive reasoning, the findings can be extended to other individual investors who have similar features and views to those who took part in this study.

Mien and Thao (2016) examined factors influencing individual financial management behaviours by evaluating the nexus between four variables such as personal financial attitude, financial knowledge or literacy, control locus and financial management behaviour. The adopted model was analysed using the survey research design with the help of primary data from 307 selected youth in Vietnam. Cronbach's alpha, exploratory factor

analysis and confirmatory factor analysis were adopted to assess the measuring instrument, while structural equation modelling was used to calculate the statistical relationship. The results indicate that all three main variables have a direct influence on the conduct of financial management, which explains 62.1% of the variation in the behaviour of financial management participants. Financial behaviour and financial knowledge exert a notable positive influence on financial management behaviour. In addition, an individual with a greater external control locus relates to worse financial management behaviours. However, the findings have zero support for the indirect influence of financial knowledge on financial management activity through the control locus and the moderate role of the former in the nexus between financial behaviour and financial management behaviour.

Pasewark and Riley (2010) examined the role of personal values in investment decisions in a controlled experimental environment. Respondents were asked to choose between an investment in a bond being sold by a tobacco company or a non-tobacco company bond, offering an equivalent or often lower return. The sample size comprised 235 undergraduate and graduate business students from two major public universities. The study and follow-up assessments were performed in class, and participation was voluntary, non-compensated, and confidential. Using factor analysis, we established the investment-and tobacco-related dimensions about which respondents' reactions appeared to be loaded. Two of them contribute to the social effects of investment decisions and the health consequences of tobacco were very important in deciding whether respondents preferred tobacco or non-tobacco-related investments. Notably, when the return on investment on tobacco-

related packages exceeds those investments not involving tobacco by 1%, the strength of the participants' reservations about the social impact of their investment decisions was particularly significant in deciding. The results suggest that the conventional approach to wealth maximization, which does not take into account the investor's personal beliefs, omits other major factors that affect investment decision making.

**Demographic Characteristics, Personal Financial Behaviour, Culture Adherence and Investment Decision Making**

Investor behaviour is affected by several factors when faced with investment decision making. Just like the behavioural and cultural factors reviewed in this chapter, the demographic composition of investors is an influencer on investment decisions. Sadiq and Ishaq (2014) examined the influence of socioeconomic characteristics on investor behaviour in investment choice using Twin Cities in Pakistan. The survey research design comprising a sample size of 100 investors from the twin cities of Pakistan (Rawalpindi and Islamabad) was adopted. Various statistical tests, including the chi-square test and correlation, were performed to evaluate the influence of demographic variables on investor risk tolerance levels for investment decisions. The findings suggest that investor demographic variables such as academic qualification, level of income, investment knowledge and investment experience have an impact on investors' risk tolerance level, whereas individual investors' sex, marital status, occupation and family size seem to not influence investors' risk tolerance level. The framework used in this study excluded the mediating role of socioeconomic factors in the

interaction among personal financial behavior, cultural adherence, and investment decision making.

Chadha, Mehta and Lonare (2018) assessed demographic factors of investors, such as gender, age, education, occupation, income, savings, and family size, over several aspects of investment decision making, such as targets for investment features, length of investment, source of information, rate of investment, and analytical skills. In response to the objectives of the study, a survey was carried out to explore the behavioural dimensions of a person while investing and, in turn, to build predictive models that can serve as a guide to firms to predict what type of person their clients are and their level of hostility. The key drawback of the research is that it addresses just the behavioural patterns of individual investors utilising questionnaires. Another limitation arises from the fact that India is a large country, and this study has only been performed in Mumbai and Udaipur, which constitute just a small part of the population of the country.

Shinde and Zanvar (2015) investigated the influence of demographic variables on the individual investor's risk tolerance level for investment decisions. Six hundred and seventy investors in Pune City, Maharashtra State, India were identified as samples. ANOVA, Mann-Whiteny 'U' test, and Kruskal-Wallis test were used to analyse the impact of socio-economic factors on the investor's risk tolerance level for an investment choice. The findings suggest that the demographic characteristics of investors, such as age, educational qualifications, and level of income, have an impact on the investor's level of risk tolerance. These findings are relevant for managers to

help their clients choose a good investment area and risk level based on their social economic features.

Patel and Modi (2017) also looked at the influence of demographic factors such as gender, age, marital status, education, income and family members on investor risk tolerance and investment choice. The study made use of primary data obtained using a convenience sampling technique to administer a structured questionnaire for 100 South Gujarat investors. The report demonstrates that the underlying socioeconomic factors have a major impact on some of the investment decision-making elements and are often negligible in others. The research also reveals a common view of an investor's understanding of the different investment options. Such decisions are affected by several factors, such as risk, return, market dynamics, and past outcomes. Demographic variables such as age, gender, and income have varying degrees of impact on investment decision-making. Despite explaining the relevance of risk, return, market dynamics, and past outcomes as well as the role of demographic factors in the assessment of individual investment decision making, the authors excluded the role of personal values from their framework.

**The Conceptual Framework and Hypotheses**

Following the assumptions underlying the cultural theory developed by Douglas and Wildavsky (1982) and measurement instrument validated by Rippl (2002) and the behavioural finance theory also advocated in several studies (Kahneman & Tversky, 1974; Macgoun, 1992; Ritter, 2003), the current study built a new framework (see Figure 2 below) to explain the influence of personal finance behaviour and cultural adherence on individual

investment decision-making in holding various instruments (shares, bonds, commercial paper, debenture, treasury bills, managed funds, and bank term deposits). The new framework also presents the interactive effect of cultural adherence on personal financial behaviour and investment decision-making. It also provides how demographic characteristics mediate personal financial behavior, cultural adherence, and investment decision-making.

The cultural theory of risk (Dake, 1991, 1992; Douglas & Wildavsky, 1983; Marris, Langford, & O'Riordan, 1998) has identified culture as one of the most important elements influencing risk perception and investment decision making. This line of research identifies cultural biases as a way to explain people's reactions to danger or risk. Cultural biases are defined as the organising of views and experiences of the world by a society or a community (Douglas & Wildavsky, 1982). Cultural biases provide a window into how hazards are perceived by individuals concerning their cultural surroundings.

According to Johnson and Swedlow (2020), risk analysts using cultural theory claim that there exist some variations in the judgement of risk by individuals from different cultural backgrounds and this ultimately affects their perception of risk (Grendstad, 1999, 2003; Hendriks 1999; Heims, 2016; Hood et al. 2004; Lockhart, 1997, 1999, 2011; Lodge & Wegrich, 2011a; Nakamura, 2016; Olli, 2012; Peters & Slovic, 1996; Verweij, 2000; Wildavsky, 1986, 2001; Cornia Dressel & Pfeil 2016). Risk is said to be a socially constructed term that changes among people who have inadvertently internalised culture as a way of thinking while also being influenced by other institutional or societal pressures (Rowe & Wright, 2001). It is clear in the literature that culture or cultural bias greatly influences or shapes an investor's

attitude, especially their perception of risk (Dragojlovic & Einsiedel, 2014; Kiss, Montpetit & Lachapelle, 2020; Perrella & Kiss, 2014).

A growing body of studies suggests that financial literacy is linked to better personal financial decision-making. Individuals with a higher level of financial literacy perform better in retirement planning (Lusardi and Mitchell, 2007; van Rooij et al., 2012); are less prone to over-indebtedness (Lusardi & Tufano, 2015) and engage in financial markets more frequently (van Rooij et al., 2011) with better-diversified portfolios (Gaudecker, 2015). Stronger deposit account yields (Deuflhard et al., 2018) and a higher proclivity to withdraw money from distressed banks are also linked to financial literacy (Deuflhard et al., 2018; Brown et al., 2017).

From an economic standpoint, culture may influence financial knowledge and decision-making through systematic variations in time or risk preferences (Falk et al., 2018) or variations in social norms regarding debt incurrence and repayment, as well as informal insurance for financially distressed households (Lindbeck, 1997). From a psychological standpoint, cultural differences in financial socialisation or attitudes toward money may further influence financial understanding and decision-making (Yamauchi and Templer, 1982). According to Lusardi et al. (2010), there are significant disparities in financial literacy among teenagers from different cultural backgrounds. This raises the issue of how a person's cultural heritage influences their financial literacy from a young age. However, because race and ethnicity are frequently linked to disparities in socioeconomic status, it's difficult to pinpoint the impact of cultural background on financial literacy.

The conceptual framework presents individual investment decision making as the dependent variable with the following as the independent variables: personal finance behaviour (financial literacy, risk perception, and risk tolerance) and cultural adherence (hierarchism, egalitarianism, individualism, and fatalism). Meanwhile, the study also included the demographic profile of the individual investors as the moderator in the interaction among personal financial behavior, cultural adherence, and investment decision making. Cultural adherence also serves as an interactive variable in the effect of personal financial behaviour on investment decision-making.

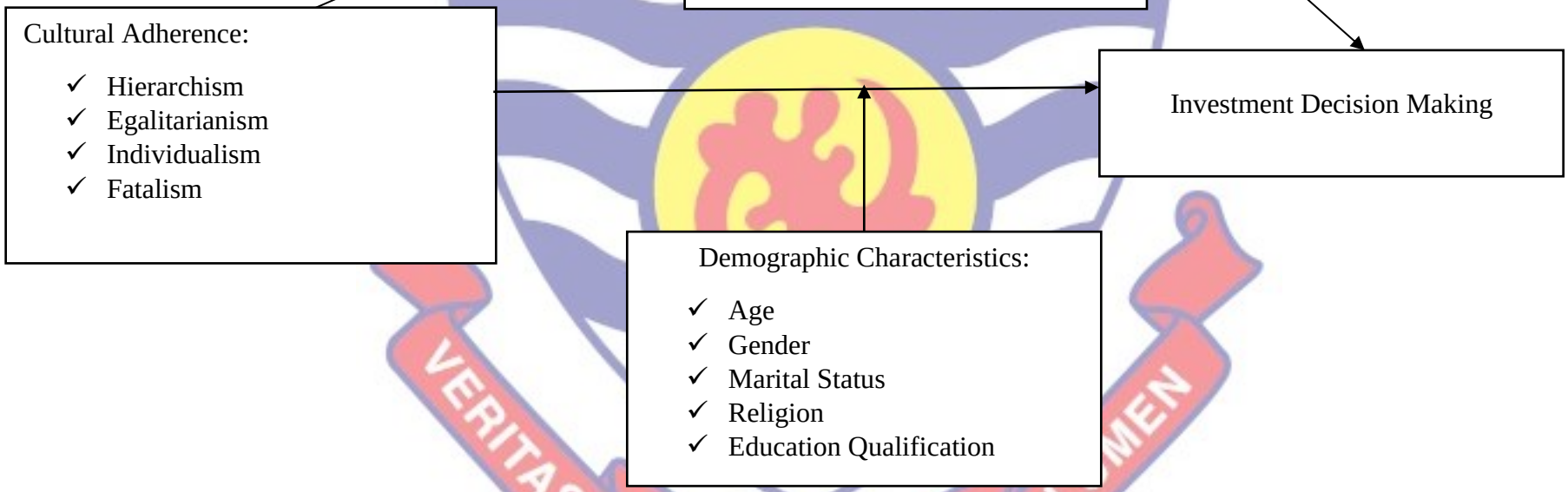


*Figure 1*: The Conceptual Framework

Source: Author's own construct

## Chapter Summary

This chapter provides relevant works of literature on the subject matter, in response to the research objectives. The study investigated the influence of personal investment behaviour and culture on investment decision-making. The empirical review on behavioural finance, culture and investment decision-making provides a fertile ground for identifying flaws in the existing literature and offering justifiable criticism. The review covered the following: Behavioural Financial Factors and Investment Decision Making; Culture Adherence Factors and Investment Decision Making; Culture Adherence, Personal Financial Behaviour and Investment Decision Making; and Demographic Characteristics, Personal Financial Behaviour, Culture Adherence and Investment Decision Making.

# CHAPTER FOUR

# RESEARCH METHODS

## Introduction

Chapter four presents the methods used to address the research hypotheses. Research methodology is the means through which a study is carried out (Burns & Grove, 2003; Kumar, 2011; Mouton, 1996). A research methodology can be defined as a coherent group of methods that complement one another and that can deliver data and findings that will reflect the research question and suit the researcher's purpose (Henning, 2004). It entails the approach, design, sources of data, study population, sampling, limitations, data collection, data processing, and analysis in response to a set of research objectives (Bhattacherjee, 2012; Burns & Grove, 2003).

The study investigated the influence of personal financial behaviour and culture on investment decision-making. Respectively, the study addressed the following specific objectives: assess the influence of personal financial behaviour on investment decision making; investigate how adherence to culture can influence personal financial behaviour; examine the mediation effect of cultural adherence on personal financial behaviour and investment decision-making; and ascertain how demographic characteristics can moderate between personal financial behaviour, cultural adherence, and investment decision-making.

Per the study's objectives, this chapter presents an overview of the study area, research design and approach, study design, population, sampling technique, and sample size. It also covers sources of data, data collection

instruments, and piloting. The others include ethical issues, data collection procedures, field challenges, and data processing and analysis.

**Study Area**

The study was conducted in the Accra Metropolitan Area (AMA), which hosts the capital of both the Greater Accra Region and Ghana as a country. According to the District Analytical Report of the 2010 Population and Housing Census, the AMA is part of the 16 MMDAs in the Greater Accra Region of Ghana, established under the Local Government Act, 1993 (Act 462) and Legislative Instrument 1615 in 1898, with six (6) initial Sub-Metropolitan District Councils and ten (10) other Assemblies later on (Ghana Statistical Service [GSS], 2014). It is headed by the Metropolitan Chief Executive, appointed by the President of the Republic, and a Metropolitan Coordinating Director as the administrative head.

Accra is enclosed by the Ga South Municipal in the West, Ga West Municipal in the North, La Dadekotopon Municipal in the East and the Gulf of Guinea in the South, with a total land area of 139.674 km2. The AMA is comprised of three sub-metros, each containing 20 electoral areas (Brinkhoff, 2016). The communities under the AMA include Chorko, Mamprobi, Dansoman, Ngleshie, Abbossey, Bubuashie, and Kaneshie (GSS, 2014). The map of Accra Metropolis that shows the boundaries and major communities is shown in Figure 2.

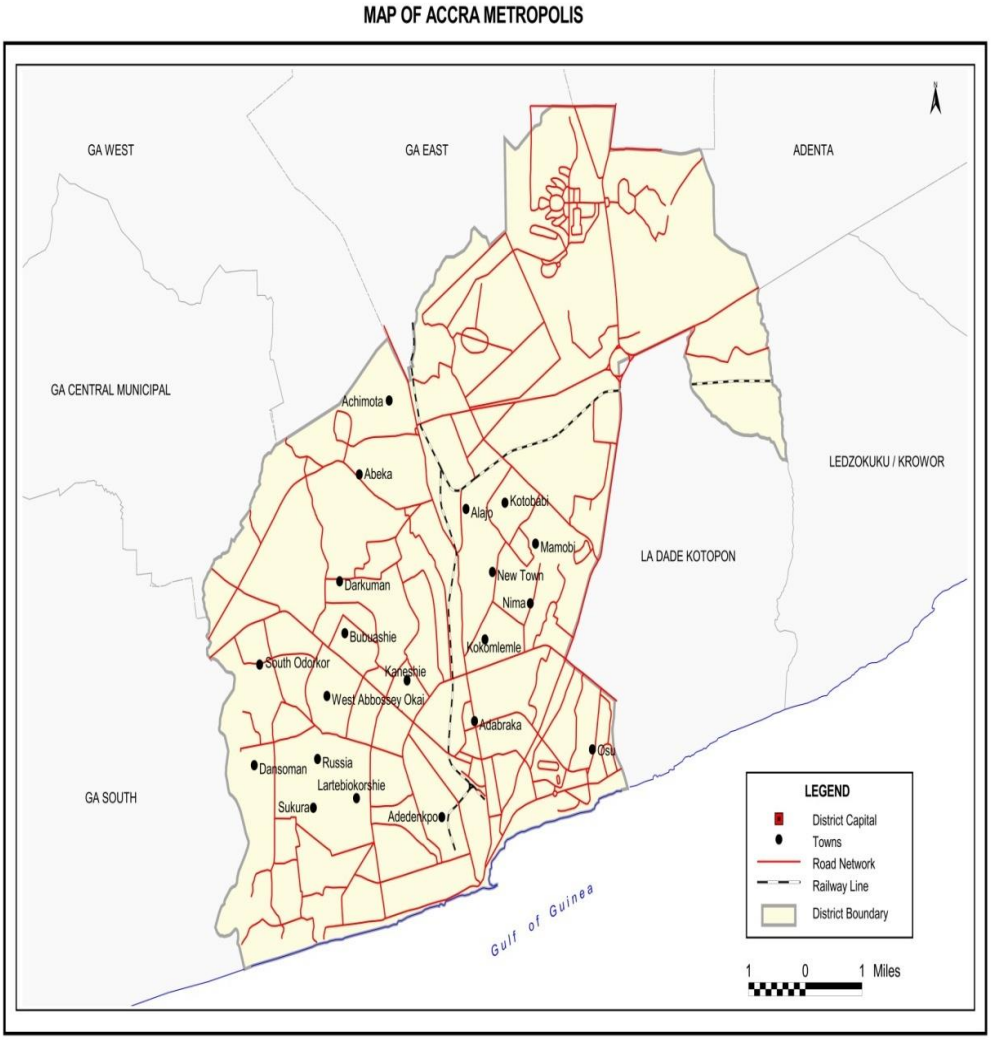


*Figure 2*: Map of Accra Metropolitan Assembly

Source: Ghana Statistical Service (GSS, 2014)

The geological composites of AMA suggest the presence of Precambrian Dahomeyan Schists, Granites, Gneiss, Granodiorites, and Amphibolites, with others comprising mainly Phylitones, Quartzite, Phillites, and Quartz Breccias. Palaeozoic Accraian Sediments-Sandstone, Shales, and Interbedded Sandstone-Shale with Gypsum Lenses are also found in the area. A series of resistant rock outcrops and sandy beaches are found at the banks of the lagoons in the Metro. The coastline is open and subject to extreme erosion due to the proximity of the territorial waters and the intense tidal and wind

pressure. The soil types in the area consist of deposits of drift materials from windblown erosion, motted clays from alluvial and marine-derived from shales, gravels, and residual clays from quartzites, gneiss and rocks, and lateritic sandy clay soils (GSS, 2014; UN-Habitat, 2015).

The AMA is situated in the dry equatorial climatic region. The area experiences two rainy seasons, with the first starting in May and ending in mid-July, while the second begins in mid-August and ends in October. On average, it records annual rainfall of about 730mm, the lowest in the country (UN-Habitat, 2015). Temperature fluctuations appear to be minor throughout the year. In August, the average monthly temperature ranges from 24.7°C to 33°C, with an annual mean temperature of 26.8°C (UN-Habitat, 2015). As the region lies near the equator, daytime temperatures are almost uniform during the year (GSS, 2014).

Accra Metropolis has a population of 1,665086 with females accounting for 51.9% (GSS, 2014). However, the sex ratio of the Metropolis is lower than the national ratio of 95.2 (GSS, 2014). This is attributable to mortality being higher among males than females and the emigration of males to other regions in Ghana (GSS, 2014). In the metropolis, 89% of people aged 11 years and above are literate in English or any Ghanaian language or French. The metropolis has about 52% of people who can read and write in English or any Ghanaian language (GSS, 2014).

The AMA is the economic centre of the Greater Accra Region and Ghana (Brinkhoff, 2016). It serves many manufacturers, oil firms, commercial banks and other financial institutions, healthcare facilities and institutions, telecommunications, tourism, education, and other significant institutions and

facilities. These industries and institutions create job opportunities for residents and people from across all regions of the country and beyond to undertake multiple engagements. Most people living in the area are employed generally in the primary, secondary, and tertiary economic sectors (Brinkhoff, 2016). The AMA was chosen for the study because, due to unbridled urbanization, it attracts a huge number of residents with different cultural and economic backgrounds and also hosts the head offices of most financial institutions. AMA boasts of high population density and variability in terms of income levels in the country. The Metropolis also features high levels of diversity in terms of education and ethnic clusters because of rural-urban migration (Agyei-Mensah & amp; Owusu 2010; Frimpong, 2017).

**Research Design**

This section presents the design of the study, spelling out the research philosophy and the approach to the study. A research design presents the foundation for the collection and analysis of data (Bhattacherjee, 2012; Ghauri & Gronhaug, 2010). It is the specific method a researcher uses to collect, analyse, and interpret data. It is a plan governing the conduct of research (Babbie & Mouton, 2009; Kumar, 2011). According to Saunders, Lewis and Thornbill (2013), there are four main types of research philosophy, namely positivism, interpretivism, pragmatism, and realism, which have been extensively used in social science studies. Interpretivism ensures appreciating individual/group differences since it interprets issues following experience, expectations, and memories, while pragmatism permits adopting methods suitable to addressing the study problem (Chawla & Sondhi, 2016). Realism also allows interpretation of the truth and information via social conditioning,

while positivism paves the way for generalising empirical findings emanating from hypothesis testing (Saunders, Lewis & Thornbill, 2013).

The study adopted the positivist philosophy. Positivism desired to quantify the influence of personal financial behaviour and culture on investment decision making through the establishment of various statistical determinations. It also allows for the generalisation of statistical relationships through hypothesis testing using various statistical techniques (Sarantakos, 1998; Saunders, Lewis, & Thornhill, 2009; 2008). Positivism comprises the reality and truth that can be assessed objectively. (Sarantakos, 2005, 1998). Accordingly, it thrives on an empiricist epistemology and drives the technique of quantitative study. Simply put, the positivist philosophy tries to establish a general rule for behavioural forecasting, making it most relevant for the determination of the influence of personal financial behaviour and culture on investment decisions of selected households residing at the AMA, unlike the others.

With respect to the research approach, the extant literature mainly follows three approaches to social science studies, namely the qualitative, quantitative, and mixed methods approaches (Bhattacherjee, 2012; Bryman, 2008, 2012; Chawla & Sondhi, 2016; Donald, Cooper, & Schindler, 2001). Quantitative and qualitative approaches refer to "the type of data being collected (quantitative data involves numeric scores, metrics, and so on, while qualitative data includes interviews, observations, and so forth) and analysed (i.e., using quantitative techniques such as regression or qualitative techniques such as coding)" (Bhattacherjee, 2012). The combination of qualitative and quantitative research approaches constitutes the mixed methods research

approach. Usually, the type of research questions and the conceptual demands under investigation determine the kind of approach to adopt.

Considering the hypotheses defining the study, the study leveraged the quantitative research approach in order to determine statistical associations between the variables defining personal financial behaviour and culture on one hand and those of household investment decisions (Bhattacherjee, 2012; Kothari, 1966). Cooper and Schindler (2011) also noted that a quantitative approach is undertaken when the primary emphasis is to depict, clarify or forecast, while the investigator distances himself from the research to prevent skewing the findings. Thus, the use of a quantitative research approach in data analysis makes the results and findings in this study more objective and true reflections of reality than they would have been if a qualitative research approach was used (Cooper & Schindler, 2011). Another characteristic of quantitative research is that the design is established before starting the study. It also utilises probability sampling techniques and provides findings that could be applied to the study population (Bhattacherjee, 2012; Kumar, 2011). Quantitative research is the most suitable strategy for examining large data sets and is comparatively cost less and time-saving. Moreover, it permits the generalisation of the study results when they are accurate and reliable (Leedy & Ormrod, 2010).

Cooper and Schindler (2011), on the other hand, warn that a quantitative approach may be limited by the ability to query participants for additional information. Sarantakos (2005) further asserts that the prescribed research procedure could restrict the efficacy of the study process. Despite the underlying precautions given against the use of the quantitative research

approach, it best served the interests of this investigation in the assessment of the influence of personal financial behaviour and culture on investment decision making other than the qualitative approach (for exploration using qualitative means of data collection and analysis) and the mixed methods approach (which involves the application of both quantitative and qualitative means of data collection and analysis).

**Study Design**

The study adopted a cross-sectional design because the data for the study was gathered at one point in time. A cross-sectional study can be descriptive or analytical. Analytical studies try to determine relationships between various parameters whiles descriptive studies typically aim to provide estimates of illness prevalence, attributes like smoking behaviour, people's attitudes, knowledge, or health behaviour (Kesmodel, 2018). The study used a descriptive survey design. Onsomu (2018) used a descriptive design to assess the behavioural biases, demographics, investment strategy, and portfolio performance of individual investors at the Nairobi Security Exchange. While being guided by the three research designs (descriptive, explanatory, and exploratory designs) put forward in Saunders et al. (2013), the present research leveraged the descriptive type in the assessment of socio-economic characteristics of household investors and the explanatory type (correlational) for the establishment of the influence of personal financial behaviour and culture on investment decision making. The former describes a phenomenon via profiling while the latter enables the determination of a causal relationship between two or more variables (Bhattacherjee, 2012; Kothari, 2004; Saunders et al., 2013).

Singh (2010) states that a descriptive study seeks to describe and assess a phenomenon. According to Kumar (2011), a descriptive study "attempts systematically to describe a situation, problem, phenomenon, service or programme or provides information about, say, the living conditions of a community, or describes attitudes towards an issue." It mainly focuses on description rather than relationship assessment. Using a descriptive design in a survey of a large sample size would permit the determination of the features of a situation or occurrences that are consistent with the underlying objectives.

Meanwhile, the correlational design, also known as the explanatory design (analytical), seeks to find out why and how certain phenomena occur (Singh, 2010). The correlational analysis addresses the relationship between two or more variables using hypothesis testing and other statistical techniques (Kothari & Garg, 2014). Using both factor analysis and structural equation models, this design was chosen to provide a valid platform for assessing the influence of personal investment behaviour and culture on investment decision making of individual household heads living in the Accra Metropolitan Assembly.

This study adopted the post-positivist and quantitative study design and employed a cross-sectional survey design because the effect of personal financial behaviour and culture on investment decision making was studied at one particular time and not over several years. The study covers a wide geographical area; therefore, a cross-sectional survey design was suitable for collecting data from a large sample, which improves the generalisability of the results. A self-administered structured questionnaire was developed for the data collection based on the adapted scales.

**Population**

The findings of a study are of immense benefit to the population. The population under investigation constitutes one major motivation for the study. The researcher is interested in making generalisations about or theoretically defined collection of study elements (Adom, 2015). According to Babbie (2010), a target population can be referred to as "the group of elements from which a sample is selected." It is the universe from which a sample is drawn for statistical inferences (Bhattacherjee, 2012; Chawla & Sondhi, 2016). For this investigation, the total number of heads of households living in the AMA in the Greater Accra Region constituted the sample frame of the study, and the total number of households within the AMA formed the population of the study (see table 1).

The heads of the households in the area have a great interest in assessing the influence of personal financial behaviour and culture on investment decision making because they are in charge of domestic decisions regarding paying utility bills, investing for the future, feeding, school fees, rent, hospital bills, etc. They are mostly adult men and women of parental status. In a typical Ghanaian household, the main decision maker is the household head (Bruce & Lloyd, 1997). Naturally, the head of the household has financial and social responsibilities and therefore takes the financial and investment decisions for the household (GSS, 2014). Based on the 2020 population and housing census, a household includes "husband, wife, children (son or daughter), grandson, parents, brother or sister, other relatives and relatives who live together in the same housing unit, share the same housekeeping and cooking arrangements and are considered as one unit, who

acknowledge an adult male or female as the head of the household." The composition is a reflection of the social structure of the population and may consist of a man, his wife or wives, children and some relatives or non-relatives who may be living with them. Members of a household are not necessarily related by blood or marriage.

**Table 1: The population of Sub Metros and Electoral Areas in AMA**

| Sub Metro | Electoral areas | Number of households |
|---|---|---|
| **Ablekuma South** | 1. Korle Gonno | 11,561 |
| | 2. Korlebu | 13,121 |
| | 3. Chorkor | 19,155 |
| | 4. Mamprobi | 15,032 |
| | 5. New Mamprobi | 10, 532 |
| | **Sub Total** | **69401** |
| **Ashiedu Keteke** | 1. Ngleshie | 5920 |
| | 2. Mudor | 4972 |
| | 3. Kinka | 3756 |
| | 4. Nmlitsagonno | 4211 |
| | 5. Amamomo | 5023 |
| | 6. Korle Wonkon | 5515 |
| | 7. Korle Dudor | 5567 |
| | **Sub Total** | **34964** |
| **Okaikoi South** | 1. Awudome | 2340 |
| | 2. Goten, | 3021 |
| | 3. Kaatsean | 3922 |
| | 4. Mukose, | 4350 |
| | 5. Bubuashie, | 5112 |
| | 6. Bubui, | 5351 |
| | 7. Avenor | 4078 |
| | 8. Kaneshie. | 6626 |
| | **Sub Total** | **34800** |
| ***GRAND TOTAL*** | | ***13,9165*** |

**Source: Accra Metropolitan Assembly website, 2019 ama.gov.gh**

**Sample size and Sampling Procedure**

The determination of an appropriate sample size that is representative of a population is seen as one of the major challenges in social science research (Adam, 2020). To be able to generalise a sample from a population and avoid sampling errors or bias, a random sample needs to be representative enough to make inferences. It is impossible to make accurate inferences about the population when a test sample does not truly represent the population from which it is drawn due to sample bias (Taherdoost, 2017). This makes the appropriate sample size important in planning the design and conduct of survey research (Bujang & Baharum, 2017). An adequate or suitable sample size contributes to observing the true relationship. The difficulty in obtaining a good estimate of population variance has increased the popularity of sample size based on proportion. The Taro Yamane (1967) formula, which is a simplified formula for proportion, has become popular with researchers for these reasons. Yamane's sample size determination formula in its form is seen as the best suited for categorical and continuous variables and is only applicable when the confidence coefficient is 95% with a population proportion of 0.5 and 0.3 (Adam, 2020). Since the variables used for this study consist of both categorical and continuous variables, the study adopted the adjusted Taro Yamane formula for the sample size determination, which caters to the two groups of variables (Adam, 2020).

Using n to denote the sample size, the sample size of the study was determined by using the adjusted Taro Yamane formula by Adam (2020).

$$n = \frac{N}{1+N\varepsilon^2}$$

Where n = minimum sample size

N=population size of 139,165

Ɛ = adjust margin of error [ε = ( $\frac{pe}{t}$ )] ε = $\frac{2(0.05)}{1.96}$ = 0.051

e = degree of error expressed as a proportion = 0.05

$\rho =$ the number of standard deviations that would include all possible values = 2

t = t-value for the selected alpha level of confidence level = 1.96

Ɛ = adjust margin of error [ε = ( $\frac{pe}{t}$ )] ε = $\frac{2(0.05)}{1.96}$ = 0.051

Scholars, Rasmussen (1989), Owuor (2001) and Norman (2010) agree that continuous data should consist of a five-point or more Likert-type scale questionnaire, and a Likert-type scale questionnaire of less than five can be deemed as categorical data. Cochran (1977) and Adam (2020) further posit that, for the avoidance of doubt in a very tight sample size range, that is, a study that has both categorical and continuous variables (as observed in this study), it is best for researchers to choose the sample size determination formula that will give the highest minimum sample to be certain of reaching the necessary precision. They recommended that for categorical data, it is best to use = 2 and for continuous data, = 4.

Based on their recommendations, the study calculated the minimum sample size using the adjusted Yamane formula for categorical data by Adam (2020).

$$n = \frac{139{,}165}{1 + 139{,}165(0.051)^2} = 383$$

Based on the above determined sample size, table 2 below shows the number of respondents chosen from each cluster to represent the sample size.

The sampling procedure defines the various techniques used in the determination of a suitable sample size for the study. A sample can be defined as "a small number of instances that were selected from the study population (Babbie, 2007). Sampling can be defined as "a process of selecting an adequate number of elements from the population so that the study of the sample will not only help in understanding the characteristics of the population but will also enable us to generalise the results" (Chawla & Sondhi, 2016). In the view of Adom (2015), sampling should be planned in such a way that the collection of samples from the target group accordingly reflects the overall population from which the elements are chosen.

Considering the objectives of the study, a systematic random sampling design was chosen for the study. Because the Accra Metropolitan Assembly is divided into three sub-metros, Ablekuma South, Ashiedu Keteke, and Okaikoi South, and the sub-metros have been further divided into twenty (20) electoral areas and the households within these electoral areas form clusters. However, clusters are homogeneous, hence the choice of systematic random sampling for the study. According to Etikan and Bala (2017), a systematic sample entails picking one of the first elements from the population list at random. Other sample items are found by starting with the first sampled element and picking every n'th element in the population list that follows. After the first randomly selected element, the sample of n is identified by working systematically across the population and identifying every nth element.

Mostafa and Ahmad (2018) also opine that the popularity of systematic random sampling is mainly due to its practicality. Compared with simple random sampling, it is easier to draw a systematic sample, especially when the

selection of sample units is done in the field. In addition, systematic sampling works best when the population is homogeneous; that is, most people share the same characteristics. Accordingly, the study chose every first house on a street as a random house and continued with every third house on the same street.

**Data**

The guarantee of a meaningful empirical study lies in the source, type, and quality of data of interest. The current study needed data from selected households living in the AMA, covering demographic characteristics, culture, personal financial behavior, and investment decision-making. Accordingly, the study relied on primary data sources, apart from a few secondary data points obtained from the AMA's District Analytical Report of the 2010 Population and Housing Census compiled by the GSS. The 766 household heads selected were the source of the primary data for various determinations.

Kothari (2004) differentiates between primary and secondary data by implying that the former are objects or units of information that have been newly obtained and for the first time, and therefore tend to be original in nature, while the latter are those that have been already gathered by someone else and are conducted using statistical procedures. The need for primary data in this study was compelled by their incredible benefits relevant to the research questions over secondary data, as noted by Leedy and Ormrod (2010) and Cooper and Schindler (2011), that the former provides proximity to reality and allows the investigator to control for anomalies.

Precisely, the study obtained quantitative data from the participants who determined the influence of personal investment behaviour and culture on the investment decision-making of selected household heads living in the

AMA. Zikmund et al. (2013) indicate that quantitative data reflect phenomena that are quantified in an organised and sensible manner for various establishments. The primary quantitative dataset comprises both numerical and categorical data. Lind, Marchal, and Wathen (2005) describe categorical data as values or factors based on distinct classes, either by a label such as sex or by grade such as educational level. Meanwhile, numerical data are values measured in figures (Leedy & Ormrod, 2010). In the context of this study, the former was of great interest in the assessment of the various constructs under culture, personal financial behaviour, and household investment decisions as well as some aspects of the demographic profile of the participants such as gender, employee status, and education level. On the other hand, the numerical data also dealt with some aspects of the demographic profile of the participants, such as age and income.

**Data Collection Instruments**

This section describes the tool(s) used to collect the primary data. The identification of an appropriate research instrument for the collection of data relevant to its course cannot be taken lightly since the study would be largely irrelevant without gathering data to make a meaningful determination. This quantitative study adopted a questionnaire to obtain data from the selected household heads from 20 electoral areas in the AMA to provide various information on culture, personal financial behaviour, household investment decisions, and demographic profile.

A self-administered questionnaire was most appropriate for the course of the investigation because the study sought to quantify the defined variables and determine the statistical relationship between them via hypothesis testing.

A self-administered questionnaire is among the most popular tools for quantitative studies (Chawla & Sondhi, 2016; Kumar, 2011; Luong & Haq, 2011). With a self-administered questionnaire, participants are given the freedom to complete the questionnaire themselves. They are easier to administer and relatively less costly (Bryman & Bell, 2007; Chawla & Sondhi, 2016). More profoundly, it is easier to process and analyse data obtained through the use of questionnaires (Kothari, 2004; Luong & Ha, 2011).

A questionnaire is “a written list of questions, the answers to which are recorded by respondents" (Kumar, 2011). With the use of a questionnaire, participants read the questions on its face, decode them and then respond accordingly. Kumar (2011) provides a clear-cut difference between an interview schedule and a questionnaire in that he establishes that in the former it is the researcher who asks the questions (and, if possible, explains them) and documents the participants' answers on an interview schedule, while in the latter, responses are provided by the participants themselves. Bhattacherjee (2012) defines a questionnaire as “a research instrument consisting of a set of questions (items) intended to capture responses from respondents in a standardised manner. Questions may be unstructured or structured. "Unstructured questions ask respondents to respond to their own words, while structured questions ask respondents to select an answer from a given set of choices”. Following the preceding classification, the researcher adopted the structured self-administered questionnaire with multiple choice questions for the participants to tick.

The questionnaire was prepared following the variables outlined in the conceptual model. It is made up of seven parts, namely: Demographic Profile

of the Participants; Cultural Adherence; Risk Perception; Risk Tolerance; Investment Decision Making Measurement (Product); Investment Decision Making Measurement (Institution) and Financial Literacy (see Appendix A1). The items under investigation were adapted from existing studies as follows; financial literacy scale (Adam, Frimpong & Boadu, 2017; Organization for Economic Co-operation and Development [OECD], 2015); risk tolerance scale (Grable & Lytton, 1999), risk perception scale (Nguyen, 2016), investment decision-making scale (Rasheed, 2017; Sarwar & Afaf, 2016) and cultural adherence scale (Rippl, 2002).

The demographic variables adopted from the extant literature include age, gender, employment status, type of company worked for, if any, income per month, and level of education. The study used both nominal and ordinal measurement scales in preparing the participants' background information, with the former classifying the objects and the latter for both classification and orderly ranking as suggested in Ghauri and Gronhaug (2010). Table 2 presents the types of measurement scales for the respondents' demographic profiles.

**Table 2: Types of Measurement Scales for the Respondents' Demographic Profile**

| Demographic Profile | Questions | Types of Measurement Scale |
|---|---|---|
| Gender and type of company working with if any | 2 & 4 | Nominal Scale |
| Age, employment status, income level and level of education | 1, 3, 5 & 6 | Ordinal Scale |

Source: Author's construct (2022).

Table 3 presents the types of measurement scales adopted to define the other study variables (cultural adherence, risk perception, risk tolerance, financial literacy, and investment decision-making). The study adopted the

Cultural Adherence scale by Rippl (2002); the Risk Perception scale by Nguyen (2016); the Risk Tolerance scale by Grable and Lytton (1999); the Financial Literacy scale by Adam, Frimpong and Boadu (2017); the Investment Decision Making scale by OECD (2015), Sarwar and Afaf (2016), and Rasheed (2017).

**Table 3: Types of Measurement Scales for Conceptual Variables**

| Variables | Dimensions | Questions | Measurements |
|---|---|---|---|
| **Cultural Adherence** | Hierarchy | 7, 8, 9, 10, 11 & 12 | 7-Point Likert |
| | Egalitarianism | 13, 14, 15 & 16 | 7-Point Likert |
| | Individualism | 17, 18, 19 & 20 | 7-Point Likert |
| | Fatalism | 21, 22 & 23 | 7-Point Likert |
| **Risk Perception** | No Dimension | 24, 25, 26, 27, 28, 29, 30, 31, 32, 33 & 34 | 7-Point Likert |
| **Risk Tolerance** | No Dimension | 35, 36, 37, 38, 39, 40, 41, 42 & 43 | 7-Point Likert |
| **Investment Decision Making (Product)** | No Dimension | 44, 45, 46, 47, 48, 49, 50, 51, 52 & 53 | 7-Point Likert |
| **Investment Decision Making (Institution)** | No Dimension | 54, 55, 56, 57 & 58 | 7-Point Likert |
| **Financial Literacy** | Financial Wellbeing | 59, 60, 61, 62 & 63 | 7-Point Likert |
| | Financial Behaviour | 64, 65, 66, 67, 68 & 69 | 7-Point Likert |
| | Financial Knowledge | 70, 71, 72, 73 & 74 | 7-Point Likert |
| | Financial Attitude | 75, 76, 77, 78 & 79 | 7-Point Likert |

Source: Author's construct (2022)

**Pilot Study**

Having designed the instrument for the study, it was demanded of the researcher, as in other empirical studies, to pilot it to guarantee the reliability and validity of the constructs adopted in measuring the various variables under investigation. Even more imperative is the frequent challenge that has been largely cited in the extant literature regarding participants' misinterpretation of questions (Hilton, 2017; Hunt, Sparkman & Wilcox, 1982). Pretesting can be defined as "a method of checking that questions work as intended and are understood by those individuals who are likely to respond to them" (Hilton, 2017). It has also been argued that piloting a survey questionnaire tends to reduce sampling drawbacks and perhaps increase the response rate (Drennan, 2003; Kumar, 2011). Accordingly, the study piloted the instrument in Cape Coast. The study sampled 100 households from the municipality for the pilot survey.

The face and content validity approaches were adopted for the pretesting to validate the operationalized items on the face of the study instrument. Saunders and colleagues, 2013). It is about how accurate a measure is, and valid measurement is generally a reliable adoption. (Bhattacherjee, 2012). Concerning face and content validity, Kumar (2011) explains that "the verdict that an instrument is measuring what it is supposed to be primarily based upon the logical link between the questions and the objectives of the study." Hence, one of the main advantages of this type of validity is that it is easy to apply. Each question or item on the research instrument must have a logical link with an objective. Establishing this nexus is considered as face validity. It is equally critical that the constructs and

questions address the full spectrum of issues or attitudes being assessed. In this regard, the evaluation of the items of the instrument is referred to as content validity.

The study, therefore, carried out face and content validity, where the expert advice of both academics and practitioners was sought to validate the items on the face of the questionnaire (Devellis, 1991; Jagongo & Mutswenje, 2014). Five academicians (including the project supervisor) with economic, financial, and mathematical backgrounds and a professional financial analyst were consulted to assess the questionnaire after the investigator thoroughly examined the items under consideration. Following the remarks made by the academicians and the analysts, the investigator corrected errors revealed and addressed every fundamental issue raised. The instruments were forwarded back to the experts for their final approval before administering them.

Reliability, on the other hand, ensures the reusability of the findings of a study (Onsomu, 2018). It establishes the degree to which a study tool is devoid of bias and guarantees the consistency of the constructs under investigation over time (Bhattacherjee, 2012; Kumar, 2011; Chawla & Sondhi, 2016). Reliability checks are vital to ensure that the same internal construct is measured by the items comprising each scale (Leedy & Ormrod, 2010; Pallant, 2011). The reliability of the measures was assessed using Cronbach's alpha test. It consists of estimates of the proportion of variance in the scores of various variables that is due to chance (Selltiz et al., 1976). As a rule of thumb, a coefficient greater than or equal to 0.7 is considered suitable and is a clear indicator of construct reliability (Cronbach & Meehl, 1995; Maree & Fraser, 2004). This approach was most appropriate for this because of its

ability to test for different categories. The results from the pilot survey test suggest Alpha values greater than 0.7, making the items under consideration internally consistent for adoption.

**Ethical Procedures**

The process of data collection in undertaking social science research demands a cautious examination of ethical issues. During data collection and its analysis, “the study population may be adversely affected by some of the questions (directly or indirectly); deprived of an intervention; expected to share sensitive and private information; or expected to be simply experimental "guineapigs," according to Kumar (2011). The effect of ethical issues on the study population and how such concerns can be resolved should be a matter of great concern. Leedy and Ormrod (2010) suggest that investigators are supposed to respect ethical standards such as secrecy, confidentiality, and informed consent and must also seek rightful entry before data collection.

The study made conscious efforts toward the eradication of such predicaments that were capable of undermining the integrity of the findings of the study. Ethical clearance was taken from the Institutional Review Board of UCC on July 9th, 2021, prior to the data collection. During the data collection exercise, the participants were notified of all the objectives of the study and the information before requesting their voluntary participation in the study. More precisely, the questionnaire had an introductory section that provided the participants with ample details on the nature of this study. Concerning anonymity, the research assured the participants of the protection of their identity. The names of the household heads were not written; neither were the questionnaires tagged. The participants were approached at their respective

homes without unnecessary interference to avoid invasion of the exercise by any third party. Finally, concerning the confidentiality of the information given by the respondents, the investigator again pledged to keep the returned questionnaire to only him and the supervisor, preventing any interception by a third party. The information provided through the questionnaires was used only for the purpose outlined in the objectives of the study.

**Data Collection Procedures**

Five field research assistants were recruited and trained before the collection of data from the 766 selected household heads of the twenty electoral areas cited in the AMA of the Greater Accra Region for the study. A field research assistant was assigned to a community while the researcher supervised the entire exercise. Their data collection took place between July 15th, 2021 and October 15th, 2021.

The participants were systematically selected following the clustering determined in table 2. Upon selecting a household, the data collectors enquired from the members of the household as the first step to unravelling the head for the exercise to take off. When the household head is discovered, the objectives of the study are explained to him or her either in the local dialect or English language. Upon accepting to take part in the study, he or she is given a questionnaire to fill out in less than 30 minutes. Participants who were not able to respond instantly were left with copies of the questionnaire to administer at their own convenience and return to the team during the next visit to the area.

**Field Challenge**

Despite the excellent execution of the data collection exercise, one cannot forget the complexities of the data coming from households. It was

very disbursing in identifying the 766 selected household heads of the twenty electoral areas in the AMA. In addressing situations, the team always made it a point to establish contact with an informant by taking his or her mobile phone number, including those of the households at the time that was not available.

The researcher's limited knowledge of the various routes in the AMA made the supervision of the work tedious and threatening. Nonetheless, the supervisor did his best to make sure that the questionnaires were administered and that the data collected was error-free. The researcher also recruited a native driver to lead him to various locations throughout the exercise.

**Data Processing and Analysis**

In social science studies, "data may be collected from a variety of sources: mail-in surveys, interviews, pretest or posttest experimental data, observational data, and so forth." According to Bhattacherjee (2012), "This data must be converted into a machine-readable, numeric format, such as in a spreadsheet or a text file so that it can be analysed by computer programmes like SPSS or SAS." The author presents the following as the steps to preparing data for analysis: data coding, data entry, identifying missing values and data transformation. After, the data collected from the field was coded, entered with missing numbers checked, and transformed for appropriate analysis. The study used the IBM SPSS 21 version, Smart PLS 3, and Microsoft Excel. The study adopted both descriptive and inferential statistical analyses in response to the study questions. The demographic profile of the participants was analysed using tables through frequency distribution. With the inferential statistical analysis, the study adopted factor analysis and a structural equation

model (SEM). According to Sarstedt, Ringle, and Hair (2017), SEM is useful for estimating models with many construct and indicator variables, which are complex, especially when the analysis aims to find the predictors. It also offers a lot of adaptabilities as far as information requirements are concerned and the determination of relationships between indicator variables and constructs. SEM is also compatible with many software, such as SmartPLS, Stata, WarpPLS R and many others. The study contains many constructs and indicator variables, which seek to establish relationships and predictor variables, which thus makes SEM the ideal model for the analysis.

**Factor Analysis**

The availability of numerous factors defining a variable makes it necessary to streamline the analysis to core dimensions. Factor analysis is a well-known term for multivariable statistical techniques that seek to establish the core structure of a given dataset. It assists in determining the structure of interdependence between several variables by defining a set of core measurements, often referred to as factors (Ghauri & Gronhaug, 2010). Items on the face of the questionnaire are used in uniform environments that have similar features. The two key methods of factor analysis include exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). While the EFA seeks to explore the defined structure of a relatively wide range of variables, the CFA plays a significant role in confirming the consistency between the variety of factors derived by the analysis method and those generated by predetermined theories (Liua & Salvend, 2009; O'brien, 2007).

The EFA was adopted to identify the contributing factors or objects that overwhelmingly supported the computation from each of the constructs, namely: Cultural Adherence, Risk Perception, Risk Tolerance, Investment Decision Making Measurement (Product), Investment Decision Making Measurement (Institution), and Financial Literacy. It was used to examine the factors that fall under the underlying variables of the questionnaire. The EFA was used to minimise the number of items under consideration that did not satisfy the review criterion (O'brien, 2007).

The study used factor loadings, Measure of Sampling Adequacy (KMO-Kaiser-Meyer Olkin), Total variance explained, and Eigenvalue for the EFA. Factor loadings are the interrelationships between each measurement and the factor to which it is assigned. Factor loading of measurement on a factor higher than 0.5 with an appropriate sample size ensures that the EFA has realistic relevance to the data under consideration. The KMO provides the degree of appropriateness of using the EFA for the data gathered. The KMO should fall between 0.5 and 1.0 (95% significant level) to ensure that the evaluation of the factor is acceptable for the dataset. Total variance explained assesses the number of preserved variables under which the factors can be maintained until the very last factor gets a tiny proportion of the underlying variance. It is proposed that the overall total variation should be greater than 50%. Eigen-value is the property of the factors that is specified as the proportion of variance in every item explained by the factor. The value should be higher than one because if it is less than one, it implies that the information defined by the factor is less than one item.

### Structural Equation Model

The combination of the CFA and multiple regression analyses constitute the SEM. SEM examines the possibility of associations between latent variables and includes two parts: the measurement framework (essentially the CFA) and the structural model (the multiple regression models) (Hair & Sarstedt, 2019). In response to the objectives of this study, the SEM was used to validate which of the variables of Cultural Adherence, Risk Perception, Risk Tolerance, and Financial Literacy impact the investment decision-making of individual investors. It also helped in estimating the weight of the estimate of regression. Some indices are used to assess the overall model fit of SEM. The model must be acceptable with a squared approximation error (RMSEA) less than or equal to.10, the comparative fit index (CFI) higher than or equal to.90, and a parsimonious fit index (PFI) also greater than or equal to.60. SmartPLS was used for the SEM.

### Empirical Model Specification

The study sought to establish the influence of Cultural Adherence (CA), Risk Perception (RP), Risk Tolerance (RT) and Financial Literacy (FL) on the investment decision making of individual investors (IDM). It was about the establishment of a statistical effect of Personal Financial Behaviour (PFB) variables measured by RP, RT, and FL on IDM. The study also examined the influence of CA on RP, RT, and FL. Moreover, it also addressed the mediating effect of CA on the nexus between PFB (aggregation of RP, RT, and FL) and IDM. Finally, the study determines the moderating effect of demographic characteristics (DC) in the interaction among PFB, CA, and IDM.

*Personal Financial Behavior and Investment Decision Making*

The first research objective sought to assess the influence of PFB on IDM with three distinct hypotheses, namely:

1. *Financial Literacy has a significant statistical influence on Investment Decision Making.*
2. *Risk Perception has a significant statistical influence on Investment Decision Making.*
3. *Risk Tolerance has a significant statistical influence on Investment Decision Making.*

The influences of FL, RP and RT on IDM are specified in the empirical model below:

$$IDM = \beta_0 + \beta_1.FL + \beta_2.RP + \beta_3.RT + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2$$

Here, IDM denotes the composite mean value for Investment Decision Making of individual investors. Where $\beta_0$ represents the constant term, $\varepsilon_1$ is the random error term and $\beta_1, \beta_2$ , and $\beta_3$ respectively stand as the regression coefficient for FL, RP and RT.

*Culture Adherence and Personal Financial Behaviour*

The influence of adhering to culture on personal financial behaviour was assessed with respect to the second research objective. This captured three specific research hypotheses namely:

1. *Culture Adherence has a significant statistical influence on Financial Literacy.*
2. *Culture Adherence has a significant statistical influence on Risk Perception.*

3. *Culture Adherence has a significant statistical influence on Risk Tolerance.*

The variables explaining the nexus between CA and the PFB variables (FL, RP and RT) are specified in the regression model below:

$$FL = \propto_0 + \propto_1 . CA + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3$$

$$RP = \propto_0 + \propto_2 . CA + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4$$

$$RT = \propto_0 + \propto_3 . CA + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 5$$

Where $FL$, $RP$ and $RT$ represent the composite mean scores for PFB of individual investors. Where $\propto_0$ and $\varepsilon_1$ are constant term and random error term respectively, $\propto_1$, $\propto_2$ $and$ $\propto_3$ respectively stand as the regression coefficient for CA in each of the three stages.

*The Mediation Effect of Cultural Adherence on Personal Financial Behavior and Investment Decision Making*

The third study objective addressed the mediation effect of cultural adherence on the nexus between personal financial behavior (predictor) and investment decision-making (dependent variable) with the hypothesis;

1. *The Mediation Effect of personal financial behaviour in the nexus between cultural adherence and Investment Decision Making.*

A mediator determines how two or more variables are related (Fairchild & MacKinnon, 2009; MacKinnon, 2011). Here, the predictor influences the mediator, which in turn affects the dependent variable. The study adopted the mediation framework propounded by Baron and Kenny (1986), which has been tested in Onsomu (2018) in the assessment of behavioural biases, demographics, investment strategies, and portfolio performance of individual investors. In the case of this study, it was assumed that PFB (predictor

covering FL, RP, and RT were determined separately in the data analysis) causes CA (mediator) to influence individual investors' IDM (dependent variable) as demonstrated in the models below:

$$IDM = \gamma_0 + \gamma_1 . PFB + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots .6$$

$$CA = \gamma_0 + \gamma_2 . PFB + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots .7$$

$$IDM = \gamma_0 + \gamma_3 . CA + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots .8$$

$$IDM = \gamma_0 + \gamma_4 . PFB + \gamma_5 . CA + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots .9$$

Where $\gamma_{0,s}$ and $\varepsilon_1, s$ are the constant terms and random error terms respectively, $\gamma_1, \gamma_2, \beta_3, \gamma_4$ and $\gamma_5$ denote the regression coefficients of their respective variables. The rule of thumb for the determination of the mediation effect is that "If the mediator is not associated with the predictor variable, then it cannot intervene in anything." In the case of this study, if the CA failed to associate with the PFB variables (FL, RP and RT) then the former cannot mediate between the latter and IDM. In other words, mediation holds if there exists a statistically significant nexus between IDM and PFB ($\beta_1 < 0.05$), CA and PFB ($\beta_2 < 0.05$), IDM and CA ($\beta_3 < 0.05$), and PFB, CA and IDM ($\beta_4$ and $\beta_5 < 0.05$). Another promising technique for unraveling the mediation effect is that the slope of PFB in equation 9 must be lower than that of equation 7.

*The Moderation Effect of Demographic Characteristics on Personal Financial Behavior, Cultural Adherence and Investments Decision Making*

Concerning the fourth study objective, the study ascertains how demographic characteristics can moderate the interactions between personal financial behavior, cultural adherence and investment decision-making. The hypothesis guiding this is given as;

2. *The Demographic Characteristics have Statistically Significant Effect on the Interactions between Personal Financial Behavior, Cultural Adherence and Investments Decision Making.*

The study leveraged the estimation technique of Baron and Kenny (1986). The authors refer to a moderator as a qualitative variable that determines the direction and/or strength of the association between two or more variables. The study assumed that both CA and PFB affect the IDM of individual investors depending upon their socio-economic characteristics such as age, gender, income level, etc. This means the moderating effect of each of the demographics was tested separately to avoid making the model complicated. Equation 3.4 below suggests the moderating role of Demographic Characteristics (DC) in the interactions among CA, PFB and IDM:

$$IDM = \infty_0 + \infty_1.PFB + \infty_2.CA + \infty_3.DC + \infty_4.PFB.DC + \infty_5.CA.DC + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots 10$$

Here, IDM is still regarded as a composite value for individual investors' Investment Decision Making, $\infty_2$constitutes the regression coefficient for the moderator. The regression coefficient for the moderation effect includes $\infty_4$and$\infty_5$. The underlying assumption is that both $\infty_4$ and $\infty_5$ must be statistically different from zero for the moderation effect of the interactions among CA, PFB and IDM to be significant and hold.

# CHAPTER FIVE

# PERSONAL FINANCIAL BEHAVIOUR AND INVESTMENT DECISION-MAKING

## Introduction

This chapter discusses the results of objective one, which, among other things, was to assess the influence of personal financial behaviour on investment decision-making. The chapter first discusses the construct validity and reliability tests, followed by the discriminant validity, collinearity diagnosis, common method bias, the path coefficient, and finally the coefficient of determination.

**Table 4: Construct Reliability and Validity of the measurement model of personal financial behaviour and investment decision making**

| | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|---|
| Financial attitude | 0.904 | 0.908 | 0.940 | 0.838 |
| Financial behavior | 0.853 | 0.870 | 0.896 | 0.634 |
| Financial knowledge | 0.628 | 0.621 | 0.799 | 0.570 |
| Financial literacy | 0.896 | 0.909 | 0.915 | 0.502 |
| Financial wellbeing | 1.000 | 1.000 | 1.000 | 1.000 |
| Investment decision-Institution | 0.902 | 0.906 | 0.931 | 0.772 |
| Investment decision-product | 0.845 | 0.855 | 0.881 | 0.516 |
| Risk perception | 0.943 | 0.953 | 0.952 | 0.688 |
| Risk tolerance | 0.856 | 0.866 | 0.892 | 0.580 |

Source: Field Survey, (2022)

The measurement model in Table 4 provides information in respect of the quality criteria for the structural model in terms of the construct validity

and reliability of the primary data collected on the items in the structured questionnaire. The reliability of the instruments employed for measuring the personal financial behavior of respondents when it comes to their investment decision-making was done through the calculation of the Cronbach Alpha coefficient (depicted as α). Hair et al., (2018) argue that a Cronbach alpha value greater than 0.7 ($\alpha > 0.7$) is regarded as acceptable reliability. From the Table, all α values are above 0.7 except for financial knowledge ($\alpha = 0.621$). This depicts that the instruments used to measure investment decision, in totality, is reliable.

The values of the composite reliability are consistent with Cronbach Alpha values, with each factor above 0.7 ($\alpha > 0.7$). Similarly, with composite reliability measures, values greater than 0.7 are considered acceptable (Peterson & Kim, 2013; Diamantopolos & Siguaw, 2000). This, therefore, confirms the Cronbach Alpha, indicating that both factors employed in the study are measured with very good reliability.

The average variance extracted presents the construct validity of the instruments used in measuring the personal financial behaviour and investment decision-making of respondents (Valentini & Damasio, 2016). All constructs included in the study are good constructs for the personal behaviour and investment decision-making of respondents because AVE values for each component are above 0.5 (dos Santos & Cirillo, 2021).

**Table 5: Discriminant Validity of the measurement model of personal financial behaviour and investment decision making**

| | Financial attitude | Financial behaviour | Financial knowledge | Financial literacy | Financial wellbeing | Investment decision-Institution | Investment decision-product | Risk perception |
|---|---|---|---|---|---|---|---|---|
| Financial behaviour | 0.725 | | | | | | | |
| Financial knowledge | 0.858 | 0.682 | | | | | | |
| Financial literacy | 0.919 | 1.040 | 1.028 | | | | | |
| Financial wellbeing | 0.563 | 0.775 | 0.585 | 0.815 | | | | |
| Investment decision-Institution | 0.674 | 0.750 | 0.759 | 0.812 | 0.592 | | | |
| Investment decision-product | 0.505 | 0.609 | 0.545 | 0.624 | 0.429 | 0.560 | | |
| Risk perception | 0.432 | 0.303 | 0.463 | 0.401 | 0.241 | 0.427 | 0.305 | |
| Risk tolerance | 0.502 | 0.409 | 0.625 | 0.524 | 0.290 | 0.494 | 0.574 | 0.401 |

Source: Field survey, (2022)

Table 5 presents the discriminant validity of constructs used in the model. The discriminant validity was assessed by comparing constructs in the diagonal with the correlation coefficients (off-diagonal) for each construct in the relevant rows and columns. A value of less than 0.85 indicates that discriminant validity likely exists between the two scales (Campbell, 2014; Kline, 2011). From Table 5, except for the financial attitude construct and the financial knowledge construct, as well as the financial literacy, construct (with values greater than 0.85), all other constructs have values of less than 0.85. This demonstrates that this measurement supports the discriminant validity that exists between the constructs; thus, discriminant validity can be accepted for this measurement model overall.

**Table 6: Collinearity Diagnostics of the measurement model of personal financial behaviour and investment decision making**

| | VIF |
|---|---|
| FA1 (financial attitude item 1) | 2.683 |
| FA1 | 3.712 |
| FA2 (financial attitude item 2) | 3.932 |
| FA2 | 3.288 |
| FA4 (financial attitude item 4) | 2.843 |
| FB1 (financial behaviour item 1) | 2.210 |
| FB1 | 3.483 |
| FB2 (financial behaviour item 2) | 2.145 |
| FB2 | 2.346 |
| FB3 financial behaviour item 3) | 3.068 |
| FB3 | 3.478 |
| FB4 (financial behaviour item 4) | 1.624 |
| FB4 | 1.629 |
| FB5 (financial behaviour item 5) | 1.657 |
| FB5 | 1.700 |
| FK1 (financial knowledge item 1) | 1.598 |
| FK1 | 1.668 |
| FK2 (financial knowledge item 2) | 1.547 |
| FK2 | 1.775 |
| FK5 (financial knowledge item 5) | 1.087 |
| FK5 | 2.382 |
| FL5 (financial literacy item 5) | 1.000 |
| FL5 | 3.031 |
| ID10 (investment decision item p | 2.153 |
| ID3 | 2.296 |

**Table 6 contiuned**

| | |
|---|---|
| ID5 | 2.356 |
| ID9 | 2.075 |
| IDI1 | 2.945 |
| IDI2 | 3.301 |
| IDP2 | 2.675 |
| IDP3 | 2.722 |
| IDP4 | 1.611 |
| IDP5 | 1.520 |
| IDP7 | 1.697 |
| RP10 | 3.314 |
| RP11 | 2.807 |
| RP2 | 2.689 |
| RP3 | 3.319 |
| RP4 | 2.090 |
| RP5 | 3.018 |
| RP6 | 4.935 |
| RP7 | 4.035 |
| RP9 | 2.454 |
| RT1 | 1.758 |
| RT2 | 1.835 |
| RT3 | 1.784 |
| RT5 | 1.639 |
| RT6 | 2.396 |
| RT7 | 2.024 |

Source: Field survey, (2022)

Table 6 presents the variance inflation factor (VIF) for the linear regression. VIF measures the amount by which the variance of a parameter estimator is inflated due to predictor variables being correlated with each other (Campbell & Fiske 1959). According to (Heiberger & Holland, 2015; Khan et al., 2013; Jung et al., 2011), a VIF value of 10 indicates a serious multi-collinearity problem, which needs redress. Results from the model (Table 6) show that all VIF values are less than 10 (VIF $<$ 10). This shows that the study variables are free from serious serial collinearity problems.

**Table 7: Inner VIF of common method bias of the measurement model of personal financial behaviour and investment decision making**

| | Financial literacy | Investment decision-Institution | Investment decision-product |
|---|---|---|---|
| Financial attitude | 2.380 | | |
| Financial behavior | 2.650 | | |
| Financial knowledge | 1.924 | | |
| Financial literacy | | 1.361 | 1.361 |
| Financial wellbeing | 2.209 | | |
| Risk perception | | 1.232 | 1.232 |
| Risk tolerance | | 1.356 | 1.356 |

Source: Field survey, (2022)

Table 7 presents the common method bias results generated from the model. The common method bias (CMB) is identified through a full Collinearity assessment approach (Kock, 2015). Hair et al., (2017) postulate that for inner VIF to be free from bias, the values should be lesser than the 3l#.3 threshold. The VIF values obtained in Table 7 indicate that all the inner VIF values are within the threshold (INNER VIF $<$ 3.3). This is indicative that the model is free from common method bias.

**Table 8: Outer Loadings of the structural model of personal financial behaviour and investment decision making**

| | Loading | t-Statistics | p Values |
|---|---|---|---|
| FA1 <- Financial attitude | 0.905 | 41.859 | 0.000 |
| FA1 <- Financial literacy | 0.787 | 21.820 | 0.000 |
| FA2 <- Financial attitude | 0.944 | 99.503 | 0.000 |
| FA2 <- Financial literacy | 0.800 | 21.613 | 0.000 |
| FA4 <- Financial attitude | 0.898 | 31.623 | 0.000 |
| FB1 <- Financial behaviour | 0.829 | 34.862 | 0.000 |
| FB1 <- Financial literacy | 0.787 | 27.544 | 0.000 |
| FB2 <- Financial behaviour | 0.807 | 27.034 | 0.000 |
| FB2 <- Financial literacy | 0.757 | 19.825 | 0.000 |
| FB3 <- Financial behaviour | 0.903 | 57.590 | 0.000 |
| FB3 <- Financial literacy | 0.862 | 33.480 | 0.000 |
| FB4 <- Financial behaviour | 0.706 | 12.969 | 0.000 |
| FB4 <- Financial literacy | 0.594 | 9.785 | 0.000 |
| FB5 <- Financial behaviour | 0.719 | 15.166 | 0.000 |
| FB5 <- Financial literacy | 0.639 | 11.395 | 0.000 |
| FK1 <- Financial knowledge | 0.792 | 18.077 | 0.000 |
| FK1 <- Financial literacy | 0.521 | 6.863 | 0.000 |
| FK2 <- Financial knowledge | 0.755 | 14.613 | 0.000 |
| FK2 <- Financial literacy | 0.504 | 6.689 | 0.000 |
| FK5 <- Financial knowledge | 0.717 | 19.695 | 0.000 |
| FK5 <- Financial literacy | 0.653 | 14.013 | 0.000 |
| FL5 <- Financial wellbeing | 1.000 | | |
| FL5 <- Financial literacy | 0.786 | 28.434 | 0.000 |
| ID10 <- Investment decision-product | 0.717 | 15.641 | 0.000 |
| ID3 <- Investment decision-Institution | 0.840 | 27.816 | 0.000 |
| ID5 <- Investment decision-Institution | 0.868 | 31.246 | 0.000 |
| ID9 <- Investment decision-product | 0.715 | 14.947 | 0.000 |
| IDI1 <- Investment decision-Institution | 0.898 | 53.023 | 0.000 |
| IDI2 <- Investment decision-Institution | 0.907 | 41.760 | 0.000 |
| IDP2 <- Investment decision-product | 0.742 | 21.005 | 0.000 |
| IDP3 <- Investment decision-product | 0.772 | 24.012 | 0.000 |
| IDP4 <- Investment decision-product | 0.633 | 11.914 | 0.000 |
| IDP5 <- Investment decision-product | 0.699 | 16.213 | 0.000 |
| IDP7 <- Investment decision-product | 0.741 | 20.798 | 0.000 |
| RP10 <- Risk perception | 0.831 | 29.090 | 0.000 |
| RP11 <- Risk perception | 0.817 | 23.115 | 0.000 |
| RP2 <- Risk perception | 0.811 | 22.578 | 0.000 |
| RP3 <- Risk perception | 0.853 | 33.784 | 0.000 |
| RP4 <- Risk perception | 0.750 | 18.102 | 0.000 |
| RP5 <- Risk perception | 0.856 | 46.668 | 0.000 |
| RP6 <- Risk perception | 0.897 | 48.802 | 0.000 |
| RP7 <- Risk perception | 0.864 | 34.858 | 0.000 |
| RP9 <- Risk perception | 0.779 | 20.519 | 0.000 |
| RT1 <- Risk tolerance | 0.777 | 29.977 | 0.000 |
| RT2 <- Risk tolerance | 0.783 | 20.149 | 0.000 |

**Table 8 contiuned**

| | | | |
|---|---|---|---|
| RT3 <- Risk tolerance | 0.765 | 17.332 | 0.000 |
| RT5 <- Risk tolerance | 0.727 | 17.652 | 0.000 |
| RT6 <- Risk tolerance | 0.793 | 18.200 | 0.000 |
| RT7 <- Risk tolerance | 0.720 | 14.090 | 0.000 |

Source: Field survey, (2022)

Table 8 present the outer loadings for respective constructs used in the model. A loading factor above 0.4 indicates the sufficiency of items included in the model (Hair, 2006). The outer loading factors reported in Table 8 show that all the values obtained are above the threshold of 0.4. The findings indicate that all items included in the model reliably measured their respective constructs given their obtained loadings (outer loading > 0.4) and level of significance ($p<0.05$). This implies that the individual items were sufficient in measuring the respondents' investment decisions.

**Table 9: Path Coefficient of the measurement model of personal financial behaviour and investment decision making**

| | Beta | $f^2$ | t-Statistics | p Values |
|---|---|---|---|---|
| Financial attitude -> Financial literacy | 0.254 | 9.413 | 17.443 | 0.000 |
| Financial behaviour -> Financial literacy | 0.526 | 36.254 | 22.633 | 0.000 |
| Financial knowledge -> Financial literacy | 0.238 | 10.264 | 12.068 | 0.000 |
| Financial literacy -> Investment decision-Institution | 0.630 | 0.664 | 11.420 | 0.000 |
| Financial literacy -> Investment decision-product | 0.418 | 0.213 | 5.257 | 0.000 |
| Financial wellbeing -> Financial literacy | 0.152 | 3.616 | 10.703 | 0.000 |
| Risk perception -> Investment decision-Institution | 0.130 | 0.031 | 2.394 | 0.008 |
| Risk perception -> Investment decision-product | 0.024 | 0.001 | 0.343 | 0.366 |
| Risk tolerance -> Investment decision-Institution | 0.108 | 0.020 | 1.760 | 0.039 |
| Risk tolerance -> Investment decision-product | 0.303 | 0.112 | 4.521 | 0.000 |

Source: Field survey, (2022)

Table 9 present the path coefficient of constructs used in the model. The path results show that financial attitude is a significant predictor of respondents' financial literacy (Beta=0.254; p<0.001) with a moderate effect size ($f^2$=9.413). This finding confirms a study by Atkinso and Messy (2012), highlighting that an individual's positive financial attitude (including appropriate financial planning and expenditure) enhances the individual's financial literacy level. In addition, Banerjee, Kumar and Philip (2017) argued that the financial attitude of individuals increases with a positive influence of financial literacy on financial awareness.

The path results also depict that financial behavior is a significant predictor of respondents' financial literacy (Beta=0.526; p<0.001) with a relatively high effect size ($f^2$=36.254). According to Bhushan and Medury (2014), building positive behavior and attitude of individuals enhances their financial literacy level. Moreover, Banerjee, Kumar and Philip (2017) highlight that the all-inclusive financial behavior of individuals rises with a positive influence of financial literacy on financial awareness.

Also, the path results depict that financial knowledge is a significant predictor of financial literacy (Beta=0.238; p<0.001) with a moderate effect size ($f^2$=10.264). This finding confirms a study by Van Rooij, Lusardi and Alessie (2011) which reveals that financial knowledge tends to have a significant influence on individuals' financial literacy; for instance, financial literacy enables individuals to make future investment plans, including retirement plans.

The path results also depict that financial literacy is a significant predictor of respondents' investment decision-making (Beta=0.630; p<0.001)

with a small effect size ($f^2$= 0.644). Financial literacy provides individuals with the skill to exploit knowledge and understanding to enforce valuable financial decisions (Kumari, 2020; Kumari & Ferdous, 2019; Oteng, 2019). The finding confirms a study by Oteng (2019) that an individual's capability to make rigorous and relevant investment decisions and consequently invest more depends on the individual's financial literacy level.

Furthermore, the path results also depict that financial literacy is a significant predictor of respondents' investment decision-product (Beta=0.418; $p<0.001$) with a small effect size ($f^2$= 0.213). Financial literacy provides individuals with the skill to exploit knowledge and understanding to enforce valuable financial decisions (Kumari 2020; Kumari & Ferdous, 2019). The finding is consistent with studies highlighting that improved levels of financial literacy result in increased levels of individuals' participation in the stock market (Yoong, 2011), increased wealth assets (Lusardi et al., 2013) and increased retirement savings (Van Rooij et al., 2011).

In addition, the path results depict that financial literacy is a significant predictor of respondents' financial well-being (Beta=0.512; p= 0.008) with a relatively high effect size ($f^2$=3.616). Investors with a higher financial literacy level contribute most frequently to financial market investments (van Rooij et al., 2011) and also accomplish better retirement planning (Rooij et al., 2012). Bhushan and Medury (2014) believe building positive behavior and attitude of individuals enhance their financial well-being of people. Similarly, financial decision-making through financial literacy has been found to influence financial capability and financial well-being (Janor et al., 2016). Individuals' financial literacy and apt financial attitude are crucial for their financial well-

being as well as their economic empowerment (Haque & Julfiqar, 2016). Proper investment and effective management of money are therefore relevant for improved livelihood and well-being of individuals (Haque & Julfiqar, 2016).

Moreover, the path results also depict that risk perception is a significant predictor of respondents' investment decision-institution (Beta=0.130; p=0.366) with a small effect size ($f^2$= 0.031). Individuals' investment decisions are greatly affected by their risk perception of investment companies they intend to invest with (Gallery, & Newton, 2016; Sindhu, & Kumar, 2014). According to Nofsinger (2017), investors face a certain level of trade off, between expected returns and risk, in an attempt to make investment decisions; hence individual investors' perspectives on risk can impact their investment decisions (Pompian, 2012). Investors with higher risk perception prefer low-risk assets and avoid channelling funds to high-risk assets (Hariharan, Chapman & Domian, 2000). On the other hand, investors with a lower risk perception prefer investments in high-risk stocks (Aren & Zengin, 2016).

Also, the path results depict that risk perception is not a significant predictor of the respondent's investment decision-product (Beta=0.024; p>0.366) with a moderate effect size ($f^2$=0.001). Individuals' decision on investment products is necessarily not determined by their respective risk perception on investment ventures. This finding is, however, inconsistent with research by Gallery and Newton, (2016) that shows that individuals' investment decisions are greatly affected by their risk perception of investment products they intend to invest in.

With regards to risk tolerance, the path results indicate that risk tolerance is a significant predictor of respondents' investment decision-institution. (Beta=0.108; p=0.039) with a moderate effect size ($f^2$=0.020). The results indicate that respondents' decision to invest in financial institutions depends on their tolerance of investment risk. This finding per Ainia and Lutfi (2019) shows that investors with high-risk tolerance are more willing to accept the risk of loss from an investment institution provided the investment provides an avenue of providing a higher level of profit; investors strive to minimize risk to allocate funds to low-risk assets (Corter & Chen, 2006).

Lastly, the path results show that risk tolerance is a significant predictor of respondents' investment decision-product (Beta=0.303; p<0.001) with a moderate effect size ($f^2$=0.112). According to Snelbecker, Roszkowski and Cutler (1990), as cited in (Grable, 2008, p.4), "Risk tolerance is an important factor that influences a wide range of personal financial decisions". In addition, this finding confirms studies, such as Pak and Mahmood, (2015) whose study found that risk tolerance has a great influence on investors' decisions in opting for alternative investment ventures. Investors with high-risk tolerance invest in high-risk assets, whereas investors with low-risk tolerance avoid high-risk asset investments (Nguyen et al., 2016).

**Table 10: Co-efficient of Determination of the measurement model of personal financial behaviour and investment decision making**

| | R Square | R Square Adjusted |
|---|---|---|
| Financial literacy | 0.997 | 0.997 |
| Investment decision-Institution | 0.561 | 0.555 |
| Investment decision-product | 0.397 | 0.390 |

Source: Field survey, (2022)

The information recorded in Table 10 represents the co-efficient of determination ($R^2$) obtained in the linear regression model. The co-efficient of determination measures the proportion of variation in the outcome variable explained by the predictor variables included in the model (Jones, 2021; Zhang, 2017). The results show that financial literacy accounts greatly for the variation in the investment decision making of respondents. About 99.7% of the variation in respondents' investment decision-making is explained by financial literacy. Similarly, respondents' investment decision-institution and investment decision-product account for about 56.1% and 39.7% respectively in variations in investment decision-making.

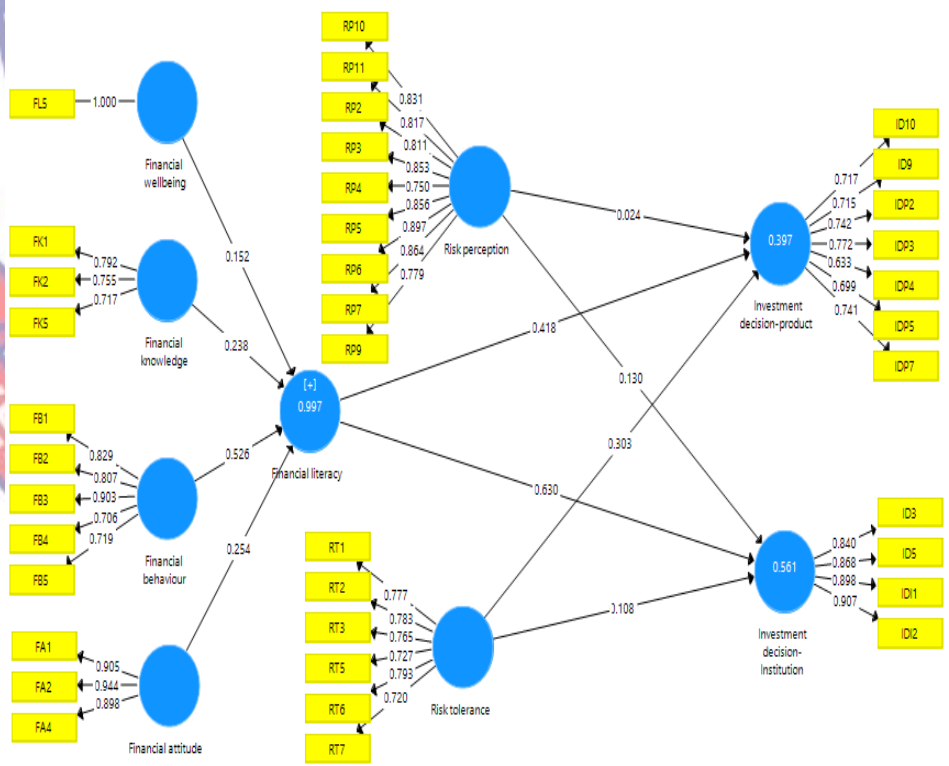


*Figure 3*: Structural Model for personal financial behaviour and investment decision making

Source: Field survey, (2022)

# CHAPTER SIX

# ADHERENCE TO CULTURE AND PERSONAL FINANCIAL BEHAVIOUR

## Introduction

Chapter six discusses the results of objective two which was seeking to investigate how adherence to culture can influence personal financial behaviour. The model was reflectively configured and evaluated based on the two-step approach recommended for such analysis. The chapter first discusses the construct validity and reliability test, followed by Discriminant Validity (Heterotrait-Monotrait analysis), collinearity diagnosis, common method bias, outer loadings, the path coefficient and finally the coefficient of determination. The results in respect of the measurement model and structural model are presented as follows;

**Table 11: Construct reliability and validity for the measurement model of cultural adherence and personal financial behaviour**

| | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|---|
| Egalitarianism | 0.772 | 0.790 | 0.868 | 0.688 |
| Fatalism | 1.000 | 1.000 | 1.000 | 1.000 |
| Financial literacy | 0.903 | 0.926 | 0.920 | 0.565 |
| Hierarchy | 0.894 | 0.898 | 0.926 | 0.759 |
| Individualism | 0.688 | 0.723 | 0.826 | 0.616 |
| Risk perception | 0.943 | 0.944 | 0.952 | 0.690 |
| Risk tolerance | 0.856 | 0.862 | 0.893 | 0.581 |

Source: Field survey, (2022)

The measurement model in Table 11 provides information in respect of the quality criteria for the structural model in terms of the construct validity

and reliability of the primary data collected on the items in the structured questionnaire. The reliabilities for the primary data in respect of the constructs under investigation are adequately measured (rho_As>0.7) except in the case of financial knowledge which is recorded a little below the threshold (rho_A=0.621). composite validity for each construct is achieved (CRs>0.7). Convergent validity for each construct is adequately measured (AVEs>0.5). These evaluation criteria are well documented in extant literature (Benitez, Henseler, Castillo & Schuberth, 2020; Aggrey, Kusi, Afum, Osei-Ahenkan, Norman, Boateng, & Owusu, 2021).

**Table 12: Discriminant validity of cultural adherence and personal financial behaviour**

| | **Egalitarianism** | **Fatalism** | **Financial literacy** | **Hierarchy** | **Individualism** | **Risk perception** |
|---|---|---|---|---|---|---|
| Fatalism | 0.474 | | | | | |
| Financial literacy | 0.556 | 0.454 | | | | |
| Hierarchy | 0.740 | 0.402 | 0.508 | | | |
| Individualism | 0.706 | 0.514 | 0.586 | 0.560 | | |
| Risk perception | 0.440 | 0.208 | 0.373 | 0.505 | 0.409 | |
| Risk tolerance | 0.677 | 0.334 | 0.483 | 0.545 | 0.663 | 0.401 |

Source: Field survey, (2022)

Discriminant validity was measured with the HTMT ratio. The results are presented in Table 12. The results show discriminant validity is measured by the paired constructs (HTMT ratios<1) except for financial behaviour and financial literacy and financial knowledge and financial literacy. These exceptions are attributed to the second-order reflective-formative structure for those pairs of constructs (Benitez, et al., 2020).

**Table 13: Outer VIF of Collinearity diagnostics of cultural adherence and personal financial behaviour**

| | VIF |
|---|---|
| CE1 | 1.428 |
| CE3 | 1.849 |
| CE4 | 1.679 |
| CF1 | 1.000 |
| CH3 | 3.016 |
| CH4 | 2.769 |
| CH5 | 2.111 |
| CH6 | 2.449 |
| CI2 | 1.223 |
| CI3 | 1.480 |
| CI4 | 1.439 |
| FA1 | 3.663 |
| FA2 | 3.141 |
| FB1 | 3.375 |
| FB2 | 2.329 |
| FB3 | 3.355 |
| FB4 | 1.628 |
| FB5 | 1.695 |
| FK5 | 2.362 |
| FL5 | 2.959 |
| RP10 | 3.314 |
| RP11 | 2.807 |
| RP2 | 2.689 |
| RP3 | 3.319 |
| RP4 | 2.090 |
| RP5 | 3.018 |
| RP6 | 4.935 |
| RP7 | 4.035 |
| RP9 | 2.454 |
| RT1 | 1.758 |
| RT2 | 1.835 |
| RT3 | 1.784 |
| RT5 | 1.639 |
| RT6 | 2.396 |
| RT7 | 2.024 |

Source: Field survey, (2022)

The results in respect of multi-collinearity for the measures of the constructs under consideration are presented in Table 13. The results demonstrate there is no problem with multi-collinearity (Outer VIFs<5).

**Table 14: Inner VIF Value of common method bias of cultural adherence and personal financial behaviour**

| | Financial literacy | Risk perception | Risk tolerance |
|---|---|---|---|
| Egalitarianism | 1.874 | 1.874 | 1.874 |
| Fatalism | 1.324 | 1.324 | 1.324 |
| Hierarchy | 1.719 | 1.719 | 1.719 |
| Individualism | 1.523 | 1.523 | 1.523 |

Source: Field survey, (2022)

The results in respect of the measure of common method bias are presented in Table 14. The results show there is no problem of common method bias (Inner VIFs<5) as recommended by Kock (2015).

**Table 15: Outer loading of a structural model of cultural adherence and personal financial behaviour**

| | Beta | t Statistics | p Values |
|---|---|---|---|
| CE1 <- Egalitarianism | 0.768 | 19.667 | 0.000 |
| CE3 <- Egalitarianism | 0.885 | 47.495 | 0.000 |
| CE4 <- Egalitarianism | 0.830 | 24.381 | 0.000 |
| CF1 <- Fatalism | 1.000 | | |
| CH3 <- Hierarchy | 0.895 | 44.823 | 0.000 |
| CH4 <- Hierarchy | 0.887 | 46.356 | 0.000 |
| CH5 <- Hierarchy | 0.836 | 25.443 | 0.000 |
| CH6 <- Hierarchy | 0.865 | 32.867 | 0.000 |
| CI2 <- Individualism | 0.674 | 11.885 | 0.000 |
| CI3 <- Individualism | 0.856 | 38.989 | 0.000 |
| CI4 <- Individualism | 0.813 | 23.611 | 0.000 |
| FA1 <- Financial literacy | 0.834 | 37.940 | 0.000 |
| FA2 <- Financial literacy | 0.839 | 37.767 | 0.000 |
| FB1 <- Financial literacy | 0.777 | 18.143 | 0.000 |
| FB2 <- Financial literacy | 0.744 | 15.120 | 0.000 |
| FB3 <- Financial literacy | 0.847 | 24.519 | 0.000 |
| FB4 <- Financial literacy | 0.563 | 7.437 | 0.000 |
| FB5 <- Financial literacy | 0.632 | 9.500 | 0.000 |
| FK5 <- Financial literacy | 0.710 | 18.944 | 0.000 |
| FL5 <- Financial literacy | 0.767 | 18.811 | 0.000 |
| RP10 <- Risk perception | 0.837 | 31.602 | 0.000 |
| RP11 <- Risk perception | 0.820 | 24.195 | 0.000 |
| RP2 <- Risk perception | 0.813 | 24.383 | 0.000 |
| RP3 <- Risk perception | 0.866 | 45.337 | 0.000 |
| RP4 <- Risk perception | 0.742 | 17.285 | 0.000 |
| RP5 <- Risk perception | 0.839 | 33.376 | 0.000 |
| RP6 <- Risk perception | 0.890 | 43.840 | 0.000 |
| RP7 <- Risk perception | 0.863 | 34.252 | 0.000 |

**Table 15 contiuned**

| | | | |
|---|---|---|---|
| RP9 <- Risk perception | 0.794 | 23.696 | 0.000 |
| RT1 <- Risk tolerance | 0.754 | 23.978 | 0.000 |
| RT2 <- Risk tolerance | 0.779 | 19.881 | 0.000 |
| RT3 <- Risk tolerance | 0.770 | 18.244 | 0.000 |
| RT5 <- Risk tolerance | 0.714 | 16.509 | 0.000 |
| RT6 <- Risk tolerance | 0.807 | 20.839 | 0.000 |
| RT7 <- Risk tolerance | 0.747 | 18.173 | 0.000 |

Source: Field survey, (2022)

The results in respect of the outer loadings for the respective constructs under investigation are presented in Table 15. The findings show all the indicators reliably measured their respective constructs given their loadings (>0.5) and level of significance ($p<0.05$) for all the indicators.

**Table 16: Path Co-efficient of cultural adherence and personal financial behaviour**

| | Beta | $f^2$ | t Statistics | p Values |
|---|---|---|---|---|
| Egalitarianism -> Financial literacy | 0.175 | 0.026 | 2.442 | 0.007 |
| Egalitarianism -> Risk perception | 0.104 | 0.008 | 1.388 | 0.083 |
| Egalitarianism -> Risk tolerance | 0.303 | 0.082 | 3.959 | 0.000 |
| Fatalism -> Financial literacy | 0.220 | 0.059 | 2.980 | 0.001 |
| Fatalism -> Risk perception | -0.034 | 0.001 | 0.586 | 0.279 |
| Fatalism -> Risk tolerance | -0.001 | 0.000 | 0.009 | 0.496 |
| Hierarchy -> Financial literacy | 0.197 | 0.036 | 2.499 | 0.006 |
| Hierarchy -> Risk perception | 0.350 | 0.094 | 4.657 | 0.000 |
| Hierarchy -> Risk tolerance | 0.160 | 0.025 | 2.132 | 0.017 |
| Individualism -> Financial literacy | 0.203 | 0.044 | 2.954 | 0.002 |
| Individualism -> Risk perception | 0.142 | 0.018 | 2.122 | 0.017 |
| Individualism -> Risk tolerance | 0.299 | 0.098 | 4.592 | 0.000 |

Source: Field survey, (2022)

Table 16 presents the path co-efficient of the measurement of cultural adherence and personal financial behaviour. The results show egalitarianism is a significant positive predictor of financial literacy (Beta=0.175; p=0.007:

p<0.05) with a very small effect size ($f^2$=0.026). Technically, the study confirms a unit significant increase in scores for egalitarianism causes a statistically significant 0.175 increase in the level of financial literacy and a unit significant fall in scores for egalitarianism causes a 0.175 significant reduction in the level of scores for financial literacy. The change in financial literacy among the respondents as attributed to changes in the level of egalitarianism is not due to chance but attributable to the nature of scientific interaction among the predictors (Measures of both financial literacy and egalitarianism) in the configured structural model. Thus, favourable changes in the state of egalitarianism significantly induce significant positive but small changes in the level of financial literacy among the respondents.

The path results show egalitarianism is an insignificant positive predictor of change in risk perception (Beta=0.104; p=0.083: p>0.05) with a very small effect size ($f^2$=0.008). The change in risk perception among the respondents as attributed to changes in the level of egalitarianism is due to chance but not attributable to the nature of scientific interaction among the predictors (Measures of both risk perception and egalitarianism) in the configured structural model.

The path results show egalitarianism is a significant positive predictor of risk tolerance (Beta=0.303; p=0.0001: p<0.05) with a very small effect size ($f^2$=0.082). Technically, the study confirms a unit significant increase in scores for egalitarianism causes a statistically significant 0.303 increase in the level of risk tolerance and a unit significant fall in scores for egalitarianism causes a 0.303 significant reduction in the level of scores for risk tolerance. The change in risk tolerance among the respondents as attributed to changes in the level of

egalitarianism is not due to chance but attributable to the nature of scientific interaction among the predictors (Measures of both risk tolerance and egalitarianism) in the configured structural model. Thus, favourable changes in the state of egalitarianism significantly induce significant positive but small changes in the level of risk tolerance among the respondents.

Furthermore, the path results show fatalism is a significant positive predictor of financial literacy (Beta=0.220; p=0.0001: p<0.05) with a small effect size ($f^2$=0.059). Technically, the study confirms a unit significant increase in scores for fatalism causes a statistically significant 0.220 increase in the level of financial literacy and a unit significant fall in scores for fatalism causes a 0.220 significant reduction in the level of scores for financial literacy. The change in financial literacy among the respondents as attributed to changes in the level of fatalism is not due to chance but attributable to the nature of scientific interaction among the predictors (Measures of both financial literacy and fatalism) in the configured structural model. Thus, favourable changes in the state of fatalism significantly induce significant positive but small changes in the level of financial literacy among the respondents.

The path results show fatalism is an insignificant negative predictor of change in risk perception (Beta=-0.034; p=0.279: p>0.05) with a very small effect size ($f^2$=0.001). The change in risk perception among the respondents as attributed to changes in the level of fatalism is due to chance but not attributable to the nature of scientific interaction among the predictors (Measures of both risk perception and fatalism) in the configured structural model.

The path results show fatalism is an insignificant negative predictor of change in risk tolerance (Beta=-0.001; p=0.496: p>0.05) with no effect size ($f^2$=0.000). The change in risk tolerance among the respondents as attributed to changes in the level of fatalism is due to chance but not attributable to the nature of scientific interaction among the predictors (Measures of both risk tolerance and fatalism) in the configured structural model.

Moreover, the path results show hierarchy is a significant positive predictor of financial literacy (Beta=0.197; p=0.006: p<0.05) with a small effect size ($f^2$=0.036). Technically, the study confirms a unit significant increase in scores for hierarchy causes a statistically significant 0.197 increase in the level of financial literacy and a unit significant fall in scores for hierarchy causes a 0.197 significant reduction in the level of scores for financial literacy. The change in financial literacy among the respondents as attributed to changes in the level of the hierarchy is not due to chance but attributable to the nature of scientific interaction among the predictors (Measures of both financial literacy and hierarchy) in the configured structural model. Thus, favourable changes in the state of hierarchy significantly induce significant positive but small changes in the level of financial literacy among the respondents.

Additionally, path results show hierarchy is a significant positive predictor of risk perception (Beta=0.350; p=0.0001: p<0.05) with a small effect size ($f^2$=0.094). Technically, the study confirms a unit significant increase in scores for hierarchy causes a statistically significant 0.350 increase in the level of risk perception and a unit significant fall in scores for hierarchy causes a 0.350 significant reduction in the level of scores for risk perception.

The change in risk perception among the respondents as attributed to changes in the level of the hierarchy is not due to chance but attributable to the nature of scientific interaction among the predictors (Measures of both risk perception and hierarchy) in the configured structural model. Thus, favourable changes in the state of hierarchy significantly induce significant positive but small changes in the level of risk perception among the respondents.

Similarly, the path results show hierarchy is a significant positive predictor of risk tolerance (Beta=0.160; p=0.017: p<0.05) with a small effect size ($f^2$=0.025). Technically, the study confirms a unit significant increase in scores for hierarchy causes a statistically significant 0.160 increase in the level of risk tolerance and a unit significant fall in scores for hierarchy causes a 0.160 significant reduction in the level of scores for risk tolerance. The change in risk tolerance among the respondents as attributed to changes in the level of the hierarchy is not due to chance but attributable to the nature of scientific interaction among the predictors (Measures of both risk tolerance and hierarchy) in the configured structural model. Thus, favourable changes in the state of hierarchy significantly induce significant positive but small changes in the level of risk tolerance among the respondents.

Furthermore, the path results show individualism is a significant positive predictor of financial literacy (Beta=0.203; p=0.002: p<0.05) with a small effect size ($f^2$=0.044). Technically, the study confirms a unit significant increase in scores for individualism causes a statistically significant 0.203 increase in the level of financial literacy and a unit significant fall in scores for individualism causes a 0.203 significant reduction in the level of scores for financial literacy. The change in financial literacy among the respondents as

attributed to changes in the level of individualism is not due to chance but attributable to the nature of scientific interaction among the predictors (Measures of both financial literacy and individualism) in the configured structural model. Thus, favourable changes in the state of individualism significantly induce significant positive but small changes in the level of financial literacy among the respondents.

Additionally, path results show individualism is a significant positive predictor of risk perception (Beta=0.142; p=0.017: p<0.05) with a small effect size ($f^2$=0.018). Technically, the study confirms a unit significant increase in scores for individualism causes a statistically significant 0.142 increase in the level of risk perception and a unit significant fall in scores for individualism causes a 0.142 significant reduction in the level of scores for risk perception. The change in risk perception among the respondents as attributed to changes in the level of individualism is not due to chance but attributable to the nature of scientific interaction among the predictors (Measures of both risk perception and individualism) in the configured structural model. Thus, favourable changes in the state of individualism significantly induce significant positive but small changes in the level of risk perception among the respondents.

Similarly, the path results show individualism is a significant positive predictor of risk tolerance (Beta=0.299; p=0.0001: p<0.05) with a small effect size ($f^2$=0.098). Technically, the study confirms a unit significant increase in scores for individualism causes a statistically significant 0.299 increase in the level of risk tolerance and a unit significant fall in scores for individualism causes a 0.299 significant reduction in the level of scores for risk tolerance.

The change in risk tolerance among the respondents as attributed to changes in the level of individualism is not due to chance but attributable to the nature of scientific interaction among the predictors (Measures of both risk tolerance and individualism) in the configured structural model. Thus, favourable changes in the state of individualism significantly induce significant positive but small changes in the level of risk tolerance among the respondents.

Co-efficient of Determination

**Table 17: Co-efficient of Determination of cultural adherence and personal financial behaviour**

| | R Square | R Square Adjusted |
|---|---|---|
| Financial literacy | 0.378 | 0.367 |
| Risk perception | 0.245 | 0.232 |
| Risk tolerance | 0.404 | 0.394 |

Source: Field survey, (2022)

Table 17 presents the results of co-efficient of determination of cultural adherence and personal financial behaviour. The results in terms of co-efficient of determination show the predictors (Hierarchy, egalitarianism and fatalism) jointly accounted for 37.8% positive change in financial literacy, 24.5% change in risk perception and 40.4% change in risk tolerance. The results of the structural model are summarized pictorially in Figure 3 below

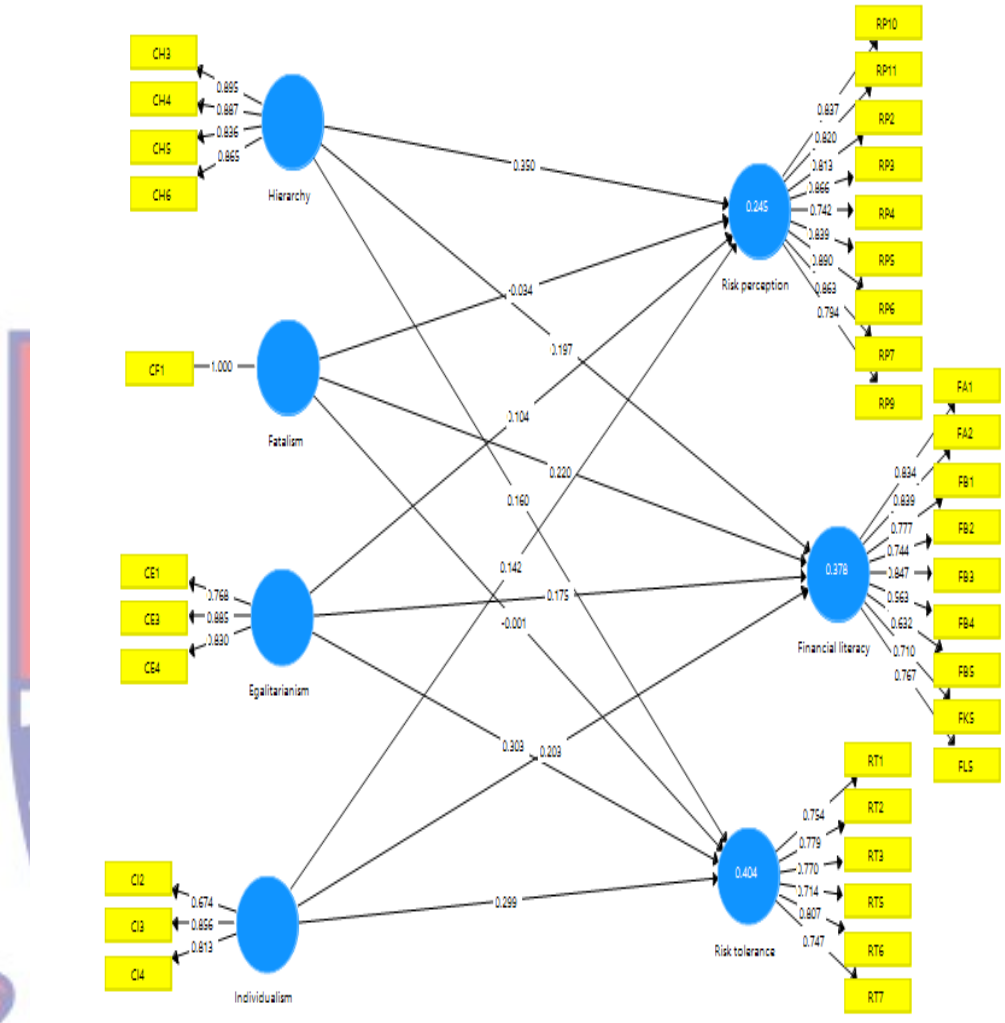


*Figure 4*: Structural Model of cultural adherence and personal financial behaviour

Source: Field survey, (2022)

# CHAPTER SEVEN

# THE MEDIATING ROLE OF PERSONAL FINANCIAL BEHAVIOUR ON THE RELATIONSHIP BETWEEN CULTURAL ADHERENCE AND INVESTMENT DECISION MAKING

## Introduction

Chapter seven discusses the results of objective three which examined the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making. The model was reflectively configured and evaluated based on the two-step approach recommended for such analysis. The chapter first discusses the construct validity and reliability test, followed by Discriminant Validity (Heterotrait-Monotrait analysis), collinearity diagnosis, common method bias, outer loadings, the path coefficient and finally the coefficient of determination. The results in respect of the measurement model and structural model are presented as follows

**Table 18: Construct Reliability and Validity of the measurement model of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making**

| | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|---|
| Egalitarian | 0.772 | 0.789 | 0.868 | 0.688 |
| Fatalism | 1.000 | 1.000 | 1.000 | 1.000 |
| Financial Attitude | 0.909 | 0.916 | 0.936 | 0.786 |
| Financial Behaviour | 0.879 | 0.890 | 0.913 | 0.679 |
| Financial Knowledge | 0.782 | 0.782 | 0.873 | 0.696 |
| Financial Literacy | 0.903 | 0.918 | 0.918 | 0.456 |
| Hierarchy | 0.894 | 0.899 | 0.926 | 0.759 |
| IDI | 0.902 | 0.906 | 0.931 | 0.772 |
| IDP | 0.840 | 0.845 | 0.882 | 0.554 |
| Individualism | 0.688 | 0.730 | 0.826 | 0.615 |
| Risk Perception | 0.941 | 0.948 | 0.950 | 0.634 |
| Risk Tolerance | 0.856 | 0.863 | 0.893 | 0.581 |
| financial wellbeing | 0.492 | 0.493 | 0.797 | 0.663 |

Source: Field survey, (2021)

The measurement model in Table 18 provides information in respect of the quality criteria for the structural model in terms of the construct validity and reliability of the primary data collected on the items in the structured questionnaire. The reliability of the instruments employed for measuring the respondent's cultural adherence with reference to their personal financial behavior and investment decision-making was carried-out using the calculation of Cronbach Alpha coefficient (depicted as α). According to Hair et al., (2018), a Cronbach Alpha value greater than 0.7 ($\alpha > 0.7$) regarded as acceptable reliability. From the model, all α values are above 0.7 ($\alpha > 0.7$), with the exception of financial knowledge and individualism ($\alpha < 0.7$). This shows that the instrument used to measure personal financial behavior and investment decision-making is reliable.

The values obtained from the composite reliability score are consistent with the cronbach alpha values, with each factor above 0.7 ($\alpha > 0.7$). Composite reliability values greater than 0.7 ($\alpha > 0.7$) are considered mostly preferred and indicated as acceptable (Diamantopolos & Siguaw, 2000). Therefore, both factors employed in the study are significantly reliability.

The Average variance extracted presents the construct validity of the instruments used in measuring the investment decision making of respondents (Valentini & Damasio, 2016). All constructs are good for personal behavior and investment decision making of respondents, because AVE values for each component is above 0.5 (dos Santos & Cirillo, 2021).

**Table 19: Discriminant Validity of the measurement model of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making**

| | Egalitarian | Fatalism | Financial Attitude | Financial Behaviour | Financial Knowledge | Financial Literacy | Hierarchy | IDI | IDP | Individualism | Risk Perception | Risk Tolerance | financial wellbeing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Egalitarian | 0.829 | | | | | | | | | | | | |
| Fatalism | 0.413 | 1.000 | | | | | | | | | | | |
| Financial Attitude | 0.518 | 0.453 | 0.887 | | | | | | | | | | |
| Financial Behaviour | 0.397 | 0.377 | 0.640 | 0.824 | | | | | | | | | |
| Financial Knowledge | 0.409 | 0.291 | 0.457 | 0.457 | 0.834 | | | | | | | | |
| Financial Literacy | 0.521 | 0.448 | 0.860 | 0.898 | 0.676 | 0.675 | | | | | | | |
| Hierarchy | 0.619 | 0.379 | 0.529 | 0.380 | 0.367 | 0.511 | 0.871 | | | | | | |
| IDI | 0.477 | 0.409 | 0.605 | 0.676 | 0.514 | 0.733 | 0.433 | 0.879 | | | | | |
| IDP | 0.357 | 0.261 | 0.386 | 0.424 | 0.230 | 0.451 | 0.270 | 0.423 | 0.744 | | | | |
| Individualism | 0.519 | 0.428 | 0.472 | 0.388 | 0.378 | 0.496 | 0.462 | 0.424 | 0.295 | 0.784 | | | |
| Risk Perception | 0.375 | 0.209 | 0.398 | 0.295 | 0.339 | 0.397 | 0.464 | 0.398 | 0.216 | 0.342 | 0.796 | | |
| Risk Tolerance | 0.555 | 0.313 | 0.460 | 0.351 | 0.383 | 0.473 | 0.482 | 0.449 | 0.463 | 0.532 | 0.367 | 0.762 | 0.814 |
| financial wellbeing | 0.207 | 0.112 | 0.294 | 0.422 | 0.412 | 0.528 | 0.230 | 0.357 | 0.307 | 0.248 | 0.129 | 0.245 | |

Source: Field survey, (2022)

Results from Table 19 present the discriminant validity of constructs used in the model. The discriminant validity was assessed by comparing constructs in the diagonal with the correlation coefficients (off-diagonal) for each construct in the relevant rows and columns. A value less than 0.85 indicate that discriminate validity likely exists between two scales (Campbell, 2014; Kline, 2011). With reference to Table 19, all constructs have values less than 0.85 with the exclusion of fatalism construct and fatalism construct (value of 1.00), financial attitude construct and financial attitude construct (value of 0.887). Overall, discriminate validity can be accepted for this measurement model.

**Table 20: Factor Loadings of the mediating role of between personal financial behaviour on the relationship cultural adherence and investment decision making**

| | Original Sample (O) | T Statistics (\|O/STDEV\|) | P Values |
|---|---|---|---|
| CAE1 <- Egalitarian | 0.765 | 19.280 | 0.000 |
| CAE3 <- Egalitarian | 0.882 | 47.987 | 0.000 |
| CAE4 <- Egalitarian | 0.836 | 26.054 | 0.000 |
| CAH3 <- Hierarchy | 0.893 | 44.113 | 0.000 |
| CAH4 <- Hierarchy | 0.889 | 47.859 | 0.000 |
| CAH5 <- Hierarchy | 0.838 | 26.276 | 0.000 |
| CAH6 <- Hierarchy | 0.863 | 32.267 | 0.000 |
| CHF1 <- Fatalism | 1.000 | | |
| CHI2 <- Individualism | 0.663 | 11.257 | 0.000 |
| CHI3 <- Individualism | 0.860 | 41.892 | 0.000 |
| CHI4 <- Individualism | 0.816 | 23.923 | 0.000 |
| FLA1 <- Financial Attitude | 0.836 | 28.993 | 0.000 |
| FLA1 <- Financial Literacy | 0.660 | 14.730 | 0.000 |
| FLA2 <- Financial Attitude | 0.908 | 53.845 | 0.000 |
| FLA2 <- Financial Literacy | 0.792 | 23.448 | 0.000 |
| FLA3 <- Financial Attitude | 0.923 | 66.874 | 0.000 |
| FLA3 <- Financial Literacy | 0.830 | 28.913 | 0.000 |
| FLA5 <- Financial Attitude | 0.878 | 31.061 | 0.000 |
| FLA5 <- Financial Literacy | 0.755 | 15.334 | 0.000 |
| FLB1 <- Financial Behaviour | 0.850 | 39.587 | 0.000 |
| FLB1 <- Financial Literacy | 0.750 | 23.510 | 0.000 |
| FLB2 <- Financial Behaviour | 0.883 | 52.532 | 0.000 |
| FLB2 <- Financial Literacy | 0.755 | 22.050 | 0.000 |
| FLB3 <- Financial Behaviour | 0.802 | 23.049 | 0.000 |

**Table 20 contiuned**

| | | | |
|---|---|---|---|
| FLB3 <- Financial Literacy | 0.745 | 17.839 | 0.000 |
| FLB4 <- Financial Behaviour | 0.892 | 43.271 | 0.000 |
| FLB4 <- Financial Literacy | 0.829 | 26.824 | 0.000 |
| FLB6 <- Financial Behaviour | 0.675 | 12.281 | 0.000 |
| FLB6 <- Financial Literacy | 0.603 | 10.410 | 0.000 |
| FLK1 <- Financial Knowledge | 0.822 | 21.934 | 0.000 |
| FLK1 <- Financial Literacy | 0.582 | 8.163 | 0.000 |
| FLK2 <- Financial Knowledge | 0.853 | 28.940 | 0.000 |
| FLK2 <- Financial Literacy | 0.560 | 8.070 | 0.000 |
| FLK3 <- Financial Knowledge | 0.827 | 25.605 | 0.000 |
| FLK3 <- Financial Literacy | 0.548 | 8.034 | 0.000 |
| FLW3 <- financial wellbeing | 0.825 | 18.596 | 0.000 |
| FLW3 <- Financial Literacy | 0.441 | 6.320 | 0.000 |
| FLW4 <- financial wellbeing | 0.803 | 18.408 | 0.000 |
| FLW4 <- Financial Literacy | 0.418 | 5.800 | 0.000 |
| IDI1 <- IDI | 0.899 | 52.761 | 0.000 |
| IDI2 <- IDI | 0.908 | 42.584 | 0.000 |
| IDI3 <- IDI | 0.840 | 28.083 | 0.000 |
| IDI5 <- IDI | 0.867 | 28.970 | 0.000 |
| IDP10 <- IDP | 0.761 | 18.035 | 0.000 |
| IDP2 <- IDP | 0.748 | 20.076 | 0.000 |
| IDP3 <- IDP | 0.770 | 22.387 | 0.000 |
| IDP7 <- IDP | 0.750 | 20.108 | 0.000 |
| IDP8 <- IDP | 0.692 | 12.525 | 0.000 |
| IDP9 <- IDP | 0.743 | 16.180 | 0.000 |
| RP1 <- Risk Perception | 0.652 | 15.188 | 0.000 |
| RP10 <- Risk Perception | 0.831 | 31.673 | 0.000 |
| RP11 <- Risk Perception | 0.813 | 23.019 | 0.000 |
| RP2 <- Risk Perception | 0.812 | 24.186 | 0.000 |
| RP3 <- Risk Perception | 0.856 | 39.978 | 0.000 |
| RP4 <- Risk Perception | 0.745 | 18.429 | 0.000 |
| RP5 <- Risk Perception | 0.842 | 39.574 | 0.000 |
| RP6 <- Risk Perception | 0.888 | 45.911 | 0.000 |
| RP7 <- Risk Perception | 0.863 | 36.272 | 0.000 |
| RP8 <- Risk Perception | 0.619 | 10.698 | 0.000 |
| RP9 <- Risk Perception | 0.789 | 23.015 | 0.000 |
| RT1 <- Risk Tolerance | 0.767 | 28.366 | 0.000 |
| RT2 <- Risk Tolerance | 0.781 | 20.099 | 0.000 |
| RT3 <- Risk Tolerance | 0.766 | 17.914 | 0.000 |
| RT5 <- Risk Tolerance | 0.722 | 17.019 | 0.000 |
| RT6 <- Risk Tolerance | 0.801 | 19.767 | 0.000 |
| RT7 <- Risk Tolerance | 0.733 | 16.214 | 0.000 |

Source: Field survey, (2022)

The results from Table 20 present the factor loadings for respective constructs used in the model. A loading factor above 0.4 indicates sufficiency

of items included in the model (Hair, 2006). The outer loading factors reported in the Table shows that all the values obtained are above the threshold of 0.4. The findings show all the indicators reliably measured their respective constructs given their loadings (>0.4) and level of significance (p<0.05) for all the indicators. This implies that the individual items were sufficient in measuring respondents' investment decision.

**Table 21: Outer VIF Values of Collinearity Validity of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making**

| | VIF |
|---|---|
| CAE1 | 1.428 |
| CAE3 | 1.849 |
| CAE4 | 1.679 |
| CAH3 | 3.016 |
| CAH4 | 2.769 |
| CAH5 | 2.111 |
| CAH6 | 2.449 |
| CHF1 | 1.000 |
| CHI2 | 1.223 |
| CHI3 | 1.480 |
| CHI4 | 1.439 |
| FLA1 | 2.336 |
| FLA1 | 2.454 |
| FLA2 | 3.412 |
| FLA2 | 3.759 |
| FLA3 | 3.951 |
| FLA3 | 4.603 |
| FLA5 | 2.904 |
| FLA5 | 3.102 |
| FLB1 | 2.837 |
| FLB1 | 3.150 |
| FLB2 | 3.287 |
| FLB2 | 3.565 |
| FLB3 | 2.118 |
| FLB3 | 2.410 |
| FLB4 | 2.968 |
| FLB4 | 3.318 |
| FLB6 | 1.504 |
| FLB6 | 1.582 |
| FLK1 | 1.522 |
| FLK1 | 1.779 |
| FLK2 | 1.776 |

**Table 21 contiuned**

| | |
|---|---|
| FLK2 | 1.896 |
| FLK3 | 1.643 |
| FLK3 | 1.966 |
| FLW3 | 1.119 |
| FLW3 | 1.350 |
| FLW4 | 1.119 |
| FLW4 | 1.362 |
| IDI1 | 2.945 |
| IDI2 | 3.301 |
| IDI3 | 2.296 |
| IDI5 | 2.356 |
| IDP10 | 2.119 |
| IDP2 | 2.542 |
| IDP3 | 2.624 |
| IDP7 | 1.619 |
| IDP8 | 1.633 |
| IDP9 | 2.032 |
| RP1 | 2.061 |
| RP10 | 3.335 |
| RP11 | 2.816 |
| RP2 | 3.309 |
| RP3 | 3.336 |
| RP4 | 2.271 |
| RP5 | 3.222 |
| RP6 | 4.956 |
| RP7 | 4.206 |
| RP8 | 1.937 |
| RP9 | 2.659 |
| RT1 | 1.758 |
| RT2 | 1.835 |
| RT3 | 1.784 |
| RT5 | 1.639 |
| RT6 | 2.396 |
| RT7 | 2.024 |

Source: Field survey, (2022)

Results of collinearity validity of the mediating role of cultural adherence on the relationship between personal financial behavior and investment decision making are presented in Table 21. The results show the variance inflation factor for the linear regression. A VIF measures the amount by which the variance of a parameter estimator is inflated due to predictor variables being correlated with each other (Campbell & Fiske, 1959). A VIF

value of 10 indicates a serious problem with multi-collinearity, which needs redress (Heiberger & Holland, 2015; Khan et al., 2013; Jung et al., 2011). Results from the model (Table 21) shows that all VIF values are less than 10 (VIF $<$ 10). This depicts that the study variables are free from serious serial collinearity problem

**Table 22: Inner VIF, common method bias of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making**

| | Financial Literacy | IDI | IDP | Risk Perception | Risk Tolerance |
|---|---|---|---|---|---|
| Egalitarian | 1.964 | 2.065 | 2.065 | 1.870 | 1.870 |
| Fatalism | 1.424 | 1.393 | 1.393 | 1.324 | 1.324 |
| Financial Attitude | 2.235 | | | | |
| Financial Behaviour | 1.966 | | | | |
| Financial Knowledge | 1.534 | | | | |
| Financial Literacy | | 1.755 | 1.755 | | |
| Hierarchy | 1.843 | 1.946 | 1.946 | 1.721 | 1.721 |
| IDI | | | | | |
| IDP | | | | | |
| Individualism | 1.608 | 1.733 | 1.733 | 1.524 | 1.524 |
| Risk Perception | | 1.366 | 1.366 | | |
| Risk Tolerance | | 1.728 | 1.728 | | |
| financial wellbeing | 1.339 | | | | |

Source: Field survey, (2022)

The results in respect of measure of common method bias of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making are presented in Table 22 The common method bias (CMB) is identified through a full Collinearity assessment approach (Kock, 2015). Hair et al., (2017) postulate that for VIF to be free from bias, the values should be lesser than the 3.3 threshold. The VIF values obtained in Table 22 shows that all the inner VIF values are within

the threshold (Inner VIFs < 3.3). This is indicative that the model is free from common method bias.

**Table 23: Path co-efficient of the structural model of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making**

| | Beta | $f^2$ | t Statistics | P Values |
|---|---|---|---|---|
| Egalitarian -> Financial Literacy | 0.000 | 0.000 | 0.075 | 0.941 |
| Egalitarian -> IDI | 0.070 | 0.006 | 1.050 | 0.294 |
| Egalitarian -> IDP | 0.075 | 0.004 | 0.831 | 0.406 |
| Egalitarian -> Risk Perception | 0.097 | 0.007 | 1.282 | 0.200 |
| Egalitarian -> Risk Tolerance | 0.302 | 0.082 | 3.991 | 0.000 |
| Fatalism -> Financial Literacy | 0.001 | 0.013 | 0.802 | 0.422 |
| Fatalism -> IDI | 0.078 | 0.010 | 1.503 | 0.133 |
| Fatalism -> IDP | 0.043 | 0.002 | 0.595 | 0.552 |
| Fatalism -> Risk Perception | -0.024 | 0.001 | 0.408 | 0.684 |
| Fatalism -> Risk Tolerance | -0.001 | 0.000 | 0.012 | 0.990 |
| Financial Attitude -> Financial Literacy | 0.418 | 2840.125 | 16.375 | 0.000 |
| Financial Behaviour -> Financial Literacy | 0.484 | 4339.736 | 20.027 | 0.000 |
| Financial Knowledge -> Financial Literacy | 0.217 | 1121.547 | 11.488 | 0.000 |
| Financial Literacy -> IDI | 0.601 | 0.475 | 8.481 | 0.000 |
| Financial Literacy -> IDP | 0.306 | 0.075 | 3.284 | 0.001 |
| Hierarchy -> Financial Literacy | 0.000 | 0.003 | 0.404 | 0.686 |
| Hierarchy -> IDI | -0.031 | 0.001 | 0.468 | 0.640 |
| Hierarchy -> IDP | -0.081 | 0.005 | 0.955 | 0.339 |
| Hierarchy -> Risk Perception | 0.348 | 0.093 | 4.626 | 0.000 |
| Hierarchy -> Risk Tolerance | 0.155 | 0.023 | 2.090 | 0.037 |
| Individualism -> Financial Literacy | 0.000 | 0.003 | 0.385 | 0.700 |
| Individualism -> IDI | -0.009 | 0.000 | 0.142 | 0.887 |
| Individualism -> IDP | -0.050 | 0.002 | 0.608 | 0.543 |
| Individualism -> Risk Perception | 0.141 | 0.017 | 2.136 | 0.033 |
| Individualism -> Risk Tolerance | 0.304 | 0.101 | 4.573 | 0.000 |
| Risk Perception -> IDI | 0.104 | 0.018 | 1.775 | 0.076 |
| Risk Perception -> IDP | -0.009 | 0.000 | 0.113 | 0.910 |
| Risk Tolerance -> IDI | 0.082 | 0.009 | 1.230 | 0.219 |
| Risk Tolerance -> IDP | 0.333 | 0.091 | 3.862 | 0.000 |
| financial wellbeing -> Financial Literacy | 0.111 | 336.765 | 8.147 | 0.000 |

Source: Field survey, (2022)

The results from Table 23 present the path coefficient of the constructs used in the measurement model of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making. The path results show egalitarianism is not a significant predictor of investment decision making-product (Beta=0.075; p=0.406) with a very small effect size ($f^2$=0.006). Though, egalitarianism focuses on equality and opportunity for all people and eventually sees to the welfare of society (Stern et al., 1995); In terms of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making, the results indicate that respondents' zeal to ensure the well-being of future generations does not influence their investment decisions regarding the product they intend to invest in.

The path results show fatalism is not a significant predictor of investment decision making-institution (Beta=0.078; p=0.0133) with a very small effect size ($f^2$=0.013). According to Douglas and Wildavsky (1982), humans are part of a social system and that the social background of people influences their values, behaviour and ideologies. Individuals present investment decisions are not influenced by fatalism as risk lovers but for moderate risk lovers (Wu & Shapiro). The results indicate that fatalism does not necessarily influence the behaviour and attitude of respondents to invest in decision making-investment. That is fatalist venture into investment, provided they are interested to do so and vice versa. This result is consistent with a study by Wu and Shapiro (2010) who emphasized that fatalism reduces investments if individuals are identified as highly hostile to risk and vice versa.

The path results show that financial attitude is a significant predictor of respondents' financial literacy (Beta=0.418; p<0.000) with a higher effect size ($f^2$=2840.125). This finding confirms a study by Atkinso and Messy (2012), highlighting that an individual's positive financial attitude (including appropriate financial planning and expenditure) enhances the individual's financial literacy level. In addition, Banerjee, Kumar and Philip (2017) argued that financial attitude of individuals' increases with a positive influence of financial literacy on financial awareness.

The path results also depict that financial behavior is a significant predictor of respondents' financial literacy (Beta=0.484; p<0.000) with a relatively high effect size ($f^2$=4339.736). According to Bhushan and Medury (2014), building a positive behavior and attitude of individual's enhances their financial literacy level. Also, Banerjee, Kumar and Philip (2017) highlight that an all-inclusive financial behavior of individuals' rise with a positive influence of financial literacy on financial awareness.

Also, the path results depict that financial knowledge is a significant predictor of financial literacy (Beta=0.217; p<0.000) with a higher effect size ($f^2$=1121.547). The findings indicate that respondents' financial knowledge influences their ability to make informed decisions with respect to their personal investment and savings. This finding confirms to a study by Van Rooij, Lusardi and Alessie (2011) that financial knowledge tends to have a significant influence on individuals' financial literacy; for instance, financial literacy enables individuals to make future investment plans, including retirement plans.

The path results show that egalitarianism is not a significant predictor of financial literacy (Beta=0.000; p=0.941) with a very small effect size ($f^2$=0.000). The findings indicate that respondents' ability to make informed decisions with respect to their personal investment and savings is not influenced by their interest and goal of securing the future of future generations. This is at variance with the beliefs of egalitarianism which focuses on equality and opportunity for all people (Wildavsky, 1993). Respondents' beliefs, skills and knowledge influence their attitudes and behavior towards future generations' wellbeing and therefore seek to improve the quality of decision-making related to financial management in order to achieve their own as well as future prosperity.

The path results show that fatalism is not a significant predictor of financial literacy (Beta=0.001; p<0.422) with a very small effect size ($f^2$=0.013). An individual's decision regarding investment is dependent on his or her perception of how prevailing investment influence future wellbeing. Fatalistic individuals believe that they have little or no control over future outcomes. The findings indicate that respondents' ability to make informed decisions with respect to their personal investment and savings do not influence respondents' perception of future investment. This result is consistent with the findings by Wu and Shapiro (2010) who found that fatalism reduces individual's effort in learning about investments and savings.

The path results show that hierarchy is not a significant predictor of financial literacy (Beta=0.000; p<0.686) with a very small effect size ($f^2$=0.003). The findings indicate that respondents' financial knowledge and skills do not influence the respondents' ability to make decisions for the

perceived gains of the group as a whole. This finding is inconsisitent to a study by Van Rooij, Lusardi and Alessie (2011) that financial literacy through financial knowledge and skills to make investment decisions tends to have a significant influence on individuals'; when the benefits of investment is being affirmed by revered members of society or high ranked members in society. For instance, people invest more in financial ventures when has already accrued benefits in the prevailing investment avenue.

The path results show that individualism is not a significant positive predictor of financial literacy (Beta=0.000; p<0.700) with a very small effect size ($f^2$=0.003). This result indicates that financial literacy through financial knowledge and skills does not influences individualism. The result is inconsistent with the literature which asset that financial literacy make individuals perceive risk as incentive and also makes them fear risk might limit their independence (Thompson et al., 1990). Individuals therefore make investment decisions provided the benefits to be accrued is high rather than concentrating on the risk involved in investing in that venture.

The path results also depict that financial literacy is a significant predictor of respondents' investment decision-making- institution (Beta=0.601; p<0.000) with a small effect size ($f^2$= 0.475). Financial literacy provides individuals' the skill to exploit knowledge and understanding to enforce valuable financial decisions (Kumari, 2020; Kumari & Ferdous, 2019; Oteng, 2019). The finding confirms a study by Oteng (2019) that an individual's capability to make rigorous and relevant investment decisions and consequently invest more depends on the individual's financial literacy level.

Furthermore, the path results also depict that financial literacy is a significant predictor of respondents' investment decision-product (Beta=0.306; p<0.001) with a small effect size ($f^2$= 0.075). The result proves that financial literacy provides individuals' the skill to exploit knowledge and understanding to enforce valuable financial decisions (Kumari 2020; Kumari & Ferdous, 2019). The finding is consistent with studies highlighting those improved levels of financial literacy result in increased levels of individuals' participation in stock market (Yoong, 2011), increased in wealth assets (Lusardi et al., 2013) and increased retirement savings (Van Rooij et al., 2011).

In addition, the path results depict that financial literacy is a significant predictor of respondents' financial wellbeing (Beta=0.111; p<0.000) with a relatively high effect size ($f^2$=336.765). According to Bhushan and Medury (2014), building a positive behavior and attitude of individuals enhances the financial well-being of people. Similarly, financial decision making through financial literacy has been found to influence financial capability and financial wellbeing (Janor et al., 2016). Individuals' financial literacy and apt financial attitude are crucial for their financial wellbeing as well as their economic empowerment (Haque & Julfiqar, 2016). Proper investment and effective management of money is therefore relevant for improved livelihood and wellbeing of individuals (Haque & Julfiqar, 2016).

The path results show that hierarchy is not a significant predictor of investment decision making - product (Beta=-0.081; p=0.339) with a very small effect size ($f^2$=0.005). The result show that individual's decision to invest in products is not influenced by authority or affirmation of benefits by

respected people in society. The path results also show that individualism is not a significant predictor of investment decision making -institution (Beta=-0.031; p=0.640: p>0.05) with a no effect size ($f^2$=0.001).

The path results show that egalitarianism is not a significant predictor of risk perception (Beta=0.097; p=0.200) with a very small effect size ($f^2$=0.007). The results show that individuals believe towards investment would not influence them to invest for the purpose of securing better future for the next generation ton improve their livelihoods.

The path results show that fatalism is not a significant predictor of risk perception (Beta=-0.024; p=0.684) with a very small effect size ($f^2$=0.001). The results confirm to a study by Wu and Shapiro (2010) that individuals risk perception does not influence them.

The path results show that hierarchy is a significant predictor of risk perception (Beta=0.348; p=0.000) with a very small effect size ($f^2$=0.093). The results show that individuals' perception towards investment risk would influence the extent to which they depend on societal authority to venture into their personal and savings ventures.

The path results show that individualism is a significant predictor of risk perception (Beta=0.141; p=0.033) with a very small effect size ($f^2$=0.017). The perception people have towards investment will influence them to invest in productive investment ventures provided the benefits are huge.

Moreover, the path results also depict that risk perception is a significant predictor of respondents' investment decision institution (Beta=0.104; p=0.076) with a small effect size ($f^2$= 0.018). Individuals' investment decisions are greatly affected by their risk perception of investment

companies they intend to invest with (Gallery & Newton, 2016; Sindhu, & Kumar, 2014). According to Nofsinger (2017), investors face a certain level of trade-off between expected returns and risk in an attempt to make investment decisions; hence an individual investor's perspective on risk can impact on his or her investment decisions (Pompian, 2012). Investors with higher risk perception prefer low-risk assets and avoid channeling funds to high-risk assets (Hariharan, Chapman, & Domian, 2000). On the other hand, investors with a lower risk perception prefer investments in high-risk stocks (Aren & Zengin, 2016).

Also, the path results depict that risk perception is not a significant predictor of respondent's investment decision-product (Beta=-0.009; p=0.0910) with no effect size ($f^2$=0.000). The result indicates that individuals' decisions on investment products are not necessarily determined by their respective risk perceptions on investment ventures. This finding is, however, inconsistent with research by Gallery and Newton (2016) that shows that individuals' investment decisions are greatly affected by their risk perception of the investment products they intend to invest in.

The path results show that egalitarianism is a significant positive predictor of risk tolerance (Beta=0.302; p=0.000) with a very small effect size ($f^2$=0.001). The results show how individuals' risk tolerance will influence their decision to invest in ventures that will benefit future generations.

Also, the path results indicate that risk tolerance is not a significant predictor of respondents' investment decision- institution. (Beta=0.082; p=0.219) with a moderate effect size ($f^2$=0.009). The results indicate that respondents' decisions to invest in financial institutions do not depend on their

tolerance for investment risk. This finding is, however, inconsistent with research by Ainia and Lutfi (2019), which shows that investors with high risk tolerance are more willing to accept the risk of loss from an investment institution provided the investment provides an avenue of providing a higher level of profit.

Lastly, the path results show that risk tolerance is a significant predictor of respondents' investment decision-product (Beta=0.333; p=0.000) with a small effect size ($f^2$=0.091). According to Snelbecker, Roszkowski and Cutler (1990), as cited in Grable (2008), "Risk tolerance is an important factor that influences a wide range of personal financial decisions". Also, this finding confirms previous studies, such as Pak & Mahmood (2015), which found that risk tolerance has a great influence on investors' decisions in opting for alternative investment ventures. Investors with a high-risk tolerance invest in high-risk assets, whereas investors with a low risk tolerance avoid high-risk asset investments (Nguyen et al., 2016).

**Table 24: Specific Indirect Effect of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making**

| | Beta | t-Statistics | P Values |
|---|---|---|---|
| Financial Knowledge -> Financial Literacy -> IDP | 0.066 | 3.290 | 0.001 |
| Egalitarian -> Financial Literacy -> IDP | 0.000 | 0.076 | 0.940 |
| Fatalism -> Financial Literacy -> IDI | 0.000 | 0.823 | 0.410 |
| Individualism -> Financial Literacy -> IDP | 0.000 | 0.392 | 0.695 |
| Fatalism -> Risk Perception -> IDP | 0.000 | 0.042 | 0.966 |
| Individualism -> Risk Tolerance -> IDI | 0.025 | 1.138 | 0.255 |
| Fatalism -> Risk Perception -> IDI | -0.002 | 0.345 | 0.730 |
| Hierarchy -> Risk Tolerance -> IDI | 0.013 | 0.981 | 0.327 |
| Fatalism -> Financial Literacy -> IDP | 0.000 | 0.803 | 0.422 |
| Egalitarian -> Risk Tolerance -> IDP | 0.101 | 2.677 | 0.007 |
| Fatalism -> Risk Tolerance -> IDI | 0.000 | 0.009 | 0.992 |
| Individualism -> Risk Tolerance -> IDP | 0.101 | 2.901 | 0.004 |
| Fatalism -> Risk Tolerance -> IDP | 0.000 | 0.011 | 0.991 |
| Egalitarian -> Risk Tolerance -> IDI | 0.025 | 1.077 | 0.282 |
| Egalitarian -> Risk Perception -> IDI | 0.010 | 0.894 | 0.371 |
| Hierarchy -> Financial Literacy -> IDP | 0.000 | 0.400 | 0.689 |
| Egalitarian -> Risk Perception -> IDP | -0.001 | 0.089 | 0.929 |
| Financial Behaviour -> Financial Literacy -> IDP | 0.148 | 3.294 | 0.001 |
| Financial Behaviour -> Financial Literacy -> IDI | 0.291 | 8.140 | 0.000 |
| Hierarchy -> Financial Literacy -> IDI | 0.000 | 0.404 | 0.686 |
| Hierarchy -> Risk Perception -> IDI | 0.036 | 1.729 | 0.084 |
| financial wellbeing -> Financial Literacy -> IDI | 0.067 | 5.358 | 0.000 |
| financial wellbeing -> Financial Literacy -> IDP | 0.034 | 2.853 | 0.004 |
| Individualism -> Risk Perception -> IDI | 0.015 | 1.248 | 0.212 |
| Financial Attitude -> Financial Literacy -> IDP | 0.128 | 3.412 | 0.001 |
| Hierarchy -> Risk Perception -> IDP | -0.003 | 0.109 | 0.913 |
| Hierarchy -> Risk Tolerance -> IDP | 0.052 | 1.758 | 0.079 |
| Individualism -> Financial Literacy -> IDI | 0.000 | 0.388 | 0.698 |
| Financial Knowledge -> Financial Literacy -> IDI | 0.131 | 6.832 | 0.000 |
| Financial Attitude -> Financial Literacy -> IDI | 0.251 | 8.541 | 0.000 |
| Individualism -> Risk Perception -> IDP | -0.001 | 0.100 | 0.921 |
| Egalitarian -> Financial Literacy -> IDI | 0.000 | 0.075 | 0.941 |

Source: Field survey, (2022)

The specific indirect results provide information on the mediation analysis made in this context of study and this is presented in Table 24. Observation of the results proves that none of the personal financial behaviour elements mediated significantly between the measures of culture and investment decisions for both institutions and products except risk tolerance. Thus, personal financial behaviour dimensions including financial literacy, and risk perception in all instances, failed to transmit the effect of cultural dimensions including egalitarianism, fatalism, hierarchism and individualism on investment decisions for both products and institutions among the participants.

The purported mediating effect of risk perception in the predictive relation between fatalism and investment decision-making for institution is negative and insignificant (β=-0.002; p=0.730: p>0.05). Similarly, the purported mediating effect of risk perception in the predictive relation between hierarchy and investment decision-making for products is negative and insignificant. Similarly, the purported mediating effect of risk perception in the predictive relation between hierarchy and investment decision-making for institution is positive and insignificant (β=0.052; p=0.079: p>0.05).

On the other hand, risk tolerance mediates significantly the predictive relationship between egalitarian and investment decision making for product (β=0.101; p=0.007) and also positively mediate such relationship. Additionally, risk tolerance mediates significantly the predictive relationship between individualism and investment decision making for product (β=0.101; p=0.004:). Similarly, financial literacy fails to significantly mediate the predictive relationship between fatalism and institutional investment decision

making (β=0.000; p=0.422: p>0.05) although it has the positive potential to mediate such a relationship. Furthermore, risk perception fails to mediate significantly the predictive relationship between egalitarianism and investment decision making for product (β=0.010; p=0.371: p>0.05) although it has the positive potential to mediate such a relationship.

Moreover, financial literacy fails to mediate significantly the predictive relationship between individualism and investment decision making for institution (β=0.000; p=0.698: p>0.05) although it has positive potential to mediate such relationship.

**Table 25: Co-efficient of Determination of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making**

| | R Square | R Square Adjusted |
|---|---|---|
| Financial Literacy | 1.000 | 1.000 |
| IDI | 0.567 | 0.554 |
| IDP | 0.291 | 0.270 |
| Risk Perception | 0.241 | 0.228 |
| Risk Tolerance | 0.403 | 0.393 |

Source: Field survey, (2022)

The results presented in Table 25 show the co-efficient of determination ($R^2$) of the mediating role of personal financial behaviour on the relationship between cultural adherence and investment decision making obtained in the linear regression model. The co-efficient of determination measures the proportion of variation in the outcome variable explained by the predictor variables included in the model (Jones, 2021; Zhang, 2017). The results show that financial literacy accounts greatly for the variation in the investment decision making of respondents.

About 99.7% of the variation in respondents' investment decision-making is explained by financial literacy. Similarly, respondents' investment decision-institution and investment decision-product accounts for about 56.7% and 29.1% variations in their investment decision-making respectively. Also, egalitarianism, fatalism, hierarchy and individualism accounts for 39.9%, 21.8%, 38% and 36.5% respectively of the variations in respondents' investment decision making.

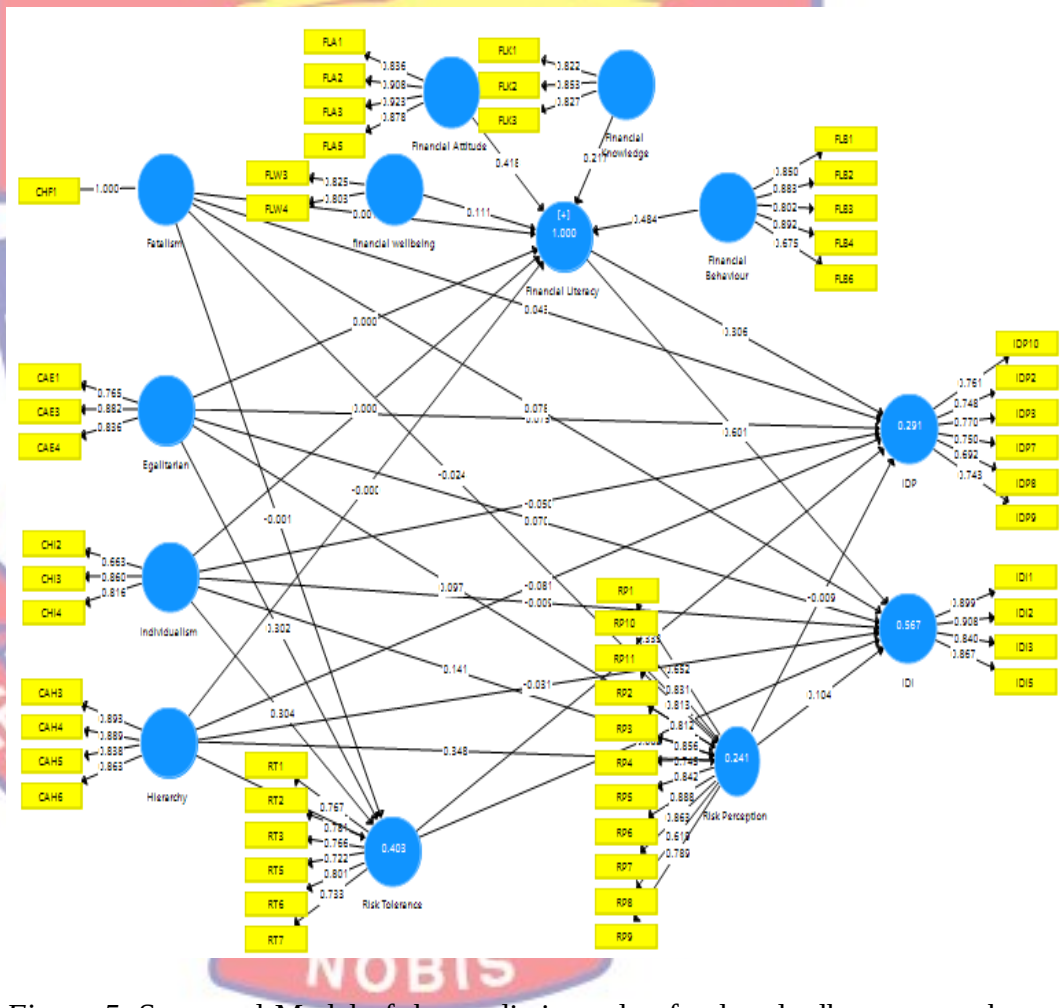


*Figure 5*: Structural Model of the mediating role of cultural adherence on the relationship between personal financial behavior and investment decision making

Source: Field survey, (2022)

# CHAPTER EIGHT

# MODERATION ROLE OF DEMOGRAPHIC CHARACTERISTICS ON THE RELATIONSHIP BETWEEN PERSONAL FINANCIAL BEHAVIOUR AND INVESTMENT DECISION-MAKING (INSTITUTION AND PRODUCT)

## Introduction

Chapter eight discusses the results of objective four which examined the moderating role of demographic characteristics on the relationship between personal financial behaviour and investment decision making. The chapter first discusses the construct validity and reliability test, followed by Discriminant Validity (Heterotrait-Monotrait analysis), collinearity diagnosis, common method bias, outer loadings, the path coefficient and finally the coefficient of determination. The results in respect of the measurement model and structural model are presented as follows

**Measurement Model**

**Table 26: Construct Validity and Reliability of the measurement model of the moderating role of demographic characteristics on the relationship between personal financial behaviour and investment decision-making (institution)**

| | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|---|
| Age | 1.000 | 1.000 | 1.000 | 1.000 |
| Education | 1.000 | 1.000 | 1.000 | 1.000 |
| Employment status | 1.000 | 1.000 | 1.000 | 1.000 |
| Financial attitude | 0.904 | 0.908 | 0.940 | 0.838 |
| Financial behavior | 0.853 | 0.870 | 0.896 | 0.634 |
| Financial knowledge | 0.628 | 0.621 | 0.799 | 0.571 |
| Financial literacy | 0.896 | 0.908 | 0.915 | 0.502 |
| Financial wellbeing | 1.000 | 1.000 | 1.000 | 1.000 |
| Gender | 1.000 | 1.000 | 1.000 | 1.000 |
| Income | 1.000 | 1.000 | 1.000 | 1.000 |
| Investment decision making (institution) | 0.902 | 0.907 | 0.931 | 0.772 |
| Moderating Effect 1 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 10 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 11 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 12 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 13 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 14 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 15 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 16 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 17 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 18 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 2 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 3 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 4 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 5 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 6 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 7 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 8 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 9 | 1.000 | 1.000 | 1.000 | 1.000 |
| Religious affiliation | 1.000 | 1.000 | 1.000 | 1.000 |
| Risk perception | 0.943 | 0.949 | 0.952 | 0.689 |
| Risk tolerance | 0.856 | 0.876 | 0.891 | 0.577 |

Source: Field survey, (2022)

The results portrayed in the measurement model in Table 26 provide information in respect of the quality criteria for the structural model in terms of the construct validity and reliability of the primary data collected on the items in the structured questionnaire. Cronbach alpha coefficients (depicted as α) were used to measure the reliability of the instruments employed for measuring the demographic characteristics and personal financial behavior, cultural adherence and investment decision making. Hair et al., (2018) postulate that a Cronbach alpha value greater than 0.7 ($\alpha > 0.7$) is acceptably reliable. From the model, all α values are above 0.7 ($\alpha > 0.7$) with the exception of financial knowledge ($\alpha = 0.628$). This depicts that the instruments used to measure the mediating variables and investment decision-making is highly reliable.

The values of the composite reliability are consistent with Cronbach alpha values, with each factor above 0.7 ($\alpha > 0.7$). Similarly, with composite reliability measures, values greater than 0.7 are considered acceptable (Diamantopolos & Siguaw, 2000). This, therefore, confirms the Cronbach alpha, indicating that both factors employed in the study are measured with very good reliability.

The Average variance extracted presents the construct validity of the instruments used in measuring the investment decision-making of respondents (Valentini, & Damasio, 2016). All constructs are good constructs for the personal behavior and investment decision making of respondents because AVE values for each component are above 0.5 (dos Santos & Cirillo, 2021).

**Table 27: Discriminant Validity of the measurement model of the moderating role of demographic characteristics on the relationship between personal financial behaviour and investment decision-making (institution)**

| | Age | Education | Employment status | Financial attitude | Financial behaviour | Financial knowledge | Financial literacy | Financial wellbeing | Gender | Income | Investment decision making (institution) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | | | | | | | | | |
| Education | 0.226 | | | | | | | | | | |
| Employment status | 0.231 | 0.134 | | | | | | | | | |
| Financial attitude | 0.106 | 0.064 | 0.050 | | | | | | | | |
| Financial behavior | 0.050 | 0.029 | 0.065 | 0.725 | | | | | | | |
| Financial knowledge | 0.163 | 0.086 | 0.045 | 0.858 | 0.682 | | | | | | |
| Financial literacy | 0.090 | 0.057 | 0.071 | 0.919 | 1.040 | 1.028 | | | | | |
| Financial wellbeing | 0.012 | 0.053 | 0.100 | 0.563 | 0.775 | 0.585 | 0.815 | | | | |
| Gender | 0.145 | 0.173 | 0.160 | 0.073 | 0.131 | 0.130 | 0.119 | 0.081 | | | |
| Income | 0.444 | 0.230 | 0.447 | 0.140 | 0.121 | 0.075 | 0.117 | 0.052 | 0.177 | | |
| Investment decision making (institution) | 0.137 | 0.053 | 0.062 | 0.674 | 0.750 | 0.759 | 0.812 | 0.592 | 0.123 | 0.055 | |
| Moderating Effect 1 | 0.044 | 0.008 | 0.006 | 0.015 | 0.045 | 0.049 | 0.040 | 0.019 | 0.000 | 0.026 | 0.055 |
| Moderating Effect 10 | 0.062 | 0.052 | 0.032 | 0.165 | 0.161 | 0.161 | 0.185 | 0.137 | 0.015 | 0.177 | 0.257 |
| Moderating Effect 11 | 0.032 | 0.069 | 0.001 | 0.164 | 0.147 | 0.105 | 0.153 | 0.089 | 0.189 | 0.030 | 0.061 |
| Moderating Effect 12 | 0.015 | 0.131 | 0.052 | 0.093 | 0.081 | 0.085 | 0.088 | 0.009 | 0.006 | 0.022 | 0.026 |
| Moderating Effect | 0.015 | 0.055 | 0.028 | 0.017 | 0.083 | 0.037 | 0.060 | 0.031 | 0.045 | 0.028 | 0.025 |

**Table 27 contiuned**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | | | | | | | | | | | |
| Moderating Effect 14 | 0.054 | 0.045 | 0.028 | 0.197 | 0.118 | 0.245 | 0.189 | 0.125 | 0.002 | 0.034 | 0.179 |
| Moderating Effect 15 | 0.024 | 0.025 | 0.036 | 0.113 | 0.071 | 0.093 | 0.088 | 0.001 | 0.013 | 0.027 | 0.049 |
| Moderating Effect 16 | 0.043 | 0.002 | 0.014 | 0.292 | 0.177 | 0.318 | 0.274 | 0.227 | 0.002 | 0.070 | 0.301 |
| Moderating Effect 17 | 0.029 | 0.035 | 0.030 | 0.048 | 0.046 | 0.038 | 0.051 | 0.041 | 0.074 | 0.080 | 0.049 |
| Moderating Effect 18 | 0.009 | 0.010 | 0.020 | 0.101 | 0.050 | 0.097 | 0.083 | 0.059 | 0.034 | 0.028 | 0.052 |
| Moderating Effect 2 | 0.008 | 0.027 | 0.070 | 0.266 | 0.335 | 0.379 | 0.368 | 0.293 | 0.047 | 0.022 | 0.290 |
| Moderating Effect 3 | 0.006 | 0.062 | 0.023 | 0.081 | 0.077 | 0.065 | 0.083 | 0.031 | 0.082 | 0.014 | 0.049 |
| Moderating Effect 4 | 0.000 | 0.051 | 0.100 | 0.339 | 0.376 | 0.481 | 0.428 | 0.294 | 0.071 | 0.063 | 0.410 |
| Moderating Effect 5 | 0.027 | 0.022 | 0.016 | 0.155 | 0.111 | 0.119 | 0.129 | 0.045 | 0.059 | 0.049 | 0.082 |
| Moderating Effect 6 | 0.017 | 0.045 | 0.011 | 0.060 | 0.034 | 0.054 | 0.053 | 0.026 | 0.057 | 0.010 | 0.054 |
| Moderating Effect 7 | 0.138 | 0.014 | 0.014 | 0.063 | 0.044 | 0.103 | 0.067 | 0.043 | 0.072 | 0.034 | 0.081 |
| Moderating Effect 8 | 0.012 | 0.158 | 0.105 | 0.012 | 0.080 | 0.098 | 0.077 | 0.070 | 0.048 | 0.059 | 0.120 |
| Moderating Effect 9 | 0.013 | 0.122 | 0.012 | 0.099 | 0.084 | 0.065 | 0.087 | 0.017 | 0.034 | 0.001 | 0.031 |
| Religious affiliation | 0.118 | 0.158 | 0.875 | 0.049 | 0.059 | 0.071 | 0.070 | 0.076 | 0.138 | 0.395 | 0.062 |
| Risk perception | 0.061 | 0.034 | 0.091 | 0.432 | 0.303 | 0.463 | 0.401 | 0.241 | 0.053 | 0.143 | 0.427 |
| Risk tolerance | 0.139 | 0.052 | 0.084 | 0.502 | 0.409 | 0.625 | 0.524 | 0.290 | 0.038 | 0.042 | 0.494 |

**Table 27 contiuned**

| Moderating Effect 1 | Moderating Effect 10 | Moderating Effect 11 | Moderating Effect 12 | Moderating Effect 13 | Moderating Effect 14 | Moderating Effect 15 | Moderating Effect 16 | Moderating Effect 17 |
|---|---|---|---|---|---|---|---|---|
| 0.047 | | | | | | | | |
| 0.096 | 0.073 | | | | | | | |
| 0.068 | 0.162 | 0.443 | | | | | | |
| 0.513 | 0.043 | 0.154 | 0.024 | | | | | |
| 0.072 | 0.094 | 0.058 | 0.092 | 0.240 | | | | |
| 0.055 | 0.058 | 0.208 | 0.291 | 0.203 | 0.035 | | | |
| 0.031 | 0.152 | 0.086 | 0.102 | 0.184 | 0.262 | 0.039 | | |
| 0.203 | 0.085 | 0.273 | 0.214 | 0.445 | 0.298 | 0.556 | 0.158 | |
| 0.029 | 0.095 | 0.189 | 0.319 | 0.105 | 0.074 | 0.886 | 0.002 | 0.522 |
| 0.213 | 0.036 | 0.031 | 0.039 | 0.072 | 0.416 | 0.123 | 0.179 | 0.057 |
| 0.189 | 0.027 | 0.167 | 0.253 | 0.059 | 0.122 | 0.505 | 0.023 | 0.312 |
| 0.138 | 0.260 | 0.025 | 0.008 | 0.026 | 0.201 | 0.032 | 0.304 | 0.019 |
| 0.431 | 0.010 | 0.227 | 0.140 | 0.218 | 0.057 | 0.306 | 0.017 | 0.491 |
| 0.062 | 0.002 | 0.144 | 0.291 | 0.030 | 0.082 | 0.393 | 0.013 | 0.245 |
| 0.391 | 0.005 | 0.274 | 0.107 | 0.315 | 0.137 | 0.007 | 0.050 | 0.147 |
| 0.017 | 0.036 | 0.198 | 0.035 | 0.111 | 0.325 | 0.042 | 0.083 | 0.049 |
| 0.002 | 0.152 | 0.473 | 0.922 | 0.016 | 0.055 | 0.363 | 0.064 | 0.247 |
| 0.017 | 0.006 | 0.023 | 0.074 | 0.010 | 0.011 | 0.020 | 0.036 | 0.032 |
| 0.053 | 0.040 | 0.080 | 0.063 | 0.075 | 0.145 | 0.046 | 0.268 | 0.100 |
| 0.068 | 0.260 | 0.113 | 0.060 | 0.106 | 0.182 | 0.143 | 0.109 | 0.181 |

**Table 27 contiuned**

| Moderating Effect 18 | Moderating Effect 2 | Moderating Effect 3 | Moderating Effect 4 | Moderating Effect 5 | Moderating Effect 6 | Moderating Effect 7 | Moderating Effect 8 | Moderating Effect 9 | Religious affiliation | Risk perception |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.075 | | | | | | | | | | |
| 0.357 | 0.059 | | | | | | | | | |
| 0.019 | 0.358 | 0.106 | | | | | | | | |
| 0.217 | 0.230 | 0.591 | 0.124 | | | | | | | |
| 0.396 | 0.146 | 0.838 | 0.122 | 0.529 | | | | | | |
| 0.037 | 0.020 | 0.006 | 0.055 | 0.099 | 0.084 | | | | | |
| 0.074 | 0.271 | 0.067 | 0.036 | 0.029 | 0.037 | 0.171 | | | | |
| 0.309 | 0.086 | 0.372 | 0.045 | 0.191 | 0.295 | 0.180 | 0.062 | | | |
| 0.035 | 0.047 | 0.010 | 0.063 | 0.010 | 0.032 | 0.017 | 0.120 | 0.054 | | |
| 0.056 | 0.082 | 0.053 | 0.211 | 0.140 | 0.049 | 0.025 | 0.020 | 0.049 | 0.132 | |
| 0.154 | 0.183 | 0.104 | 0.320 | 0.046 | 0.088 | 0.076 | 0.127 | 0.053 | 0.073 | 0.401 |

Source: Field survey, (2022)

The results from Table 27 present the discriminant validity of constructs used in the measurement model of the moderating role of demographic characteristics on the relationship between personal financial behaviour and investment decision-making (institution). The discriminant validity was assessed by comparing constructs in the diagonal with the correlation coefficients (off-diagonal) for each construct in the relevant rows and columns. A value less than 0.85 indicate that discriminate validity likely exists between two scales (Campbell, 2014; Kline, 2011). From Table…., except two constructs, that is the financial behavior and financial literacy construct and financial behavior and financial knowledge construct (with values greater than 0.85); all other constructs have values less than 0.85. This shows that this measurement supports the discriminate validity existing between the constructs; therefore, generally, discriminate validity can be accepted for this measurement model.

**Table 28: Outer VIF Value of Collinearity Validity measurement model of the moderating role of demographic characteristics on the relationship between personal financial behaviour and investment decision-making (institution)**

| | VIF |
|---|---|
| AGE | 1.000 |
| EDU | 1.000 |
| ESTA | 1.000 |
| FA1 | 2.683 |
| FA1 | 3.712 |
| FA2 | 3.932 |
| FA2 | 3.288 |
| FA4 | 2.843 |
| FB1 | 2.210 |
| FB1 | 3.483 |
| FB2 | 2.145 |
| FB2 | 2.346 |
| FB3 | 3.068 |
| FB3 | 3.478 |
| FB4 | 1.624 |
| FB4 | 1.629 |
| FB5 | 1.657 |
| FB5 | 1.700 |
| FK1 | 1.598 |

**Table 28 contiuned**

| | |
|---|---|
| FK1 | 1.668 |
| FK2 | 1.547 |
| FK2 | 1.775 |
| FK5 | 1.087 |
| FK5 | 2.382 |
| FL5 | 1.000 |
| FL5 | 3.031 |
| Financial literacy * Age | 1.000 |
| Financial literacy * Education | 1.000 |
| Financial literacy * Employment status | 1.000 |
| Financial literacy * Gender | 1.000 |
| Financial literacy * Income | 1.000 |
| Financial literacy * Religious affiliation | 1.000 |
| GENDER | 1.000 |
| ICM | 1.000 |
| ID3 | 2.296 |
| ID5 | 2.356 |
| IDI1 | 2.945 |
| IDI2 | 3.301 |
| RLG | 1.000 |
| RP10 | 3.314 |
| RP11 | 2.807 |
| RP2 | 2.689 |
| RP3 | 3.319 |
| RP4 | 2.090 |
| RP5 | 3.018 |
| RP6 | 4.935 |
| RP7 | 4.035 |
| RP9 | 2.454 |
| RT1 | 1.758 |
| RT2 | 1.835 |
| RT3 | 1.784 |
| RT5 | 1.639 |
| RT6 | 2.396 |
| RT7 | 2.024 |
| Risk perception * Age | 1.000 |
| Risk perception * Education | 1.000 |
| Risk perception * Employment status | 1.000 |
| Risk perception * Gender | 1.000 |
| Risk perception * Income | 1.000 |
| Risk perception * Religious affiliation | 1.000 |
| Risk tolerance * Age | 1.000 |
| Risk tolerance * Education | 1.000 |
| Risk tolerance * Employment status | 1.000 |
| Risk tolerance * Gender | 1.000 |
| Risk tolerance * Income | 1.000 |
| Risk tolerance * Religious affiliation | 1.000 |

Source: Field survey, (2022)

Table 28 presents the variance inflation factor for the linear regression. A VIF measures the amount by which the variance of a parameter estimator is inflated due to predictor variables being correlated with each other (Campbell

& Fiske, 1959). VIF value of 10 indicates a serious problem with multi-collinearity, which needs redress (Heiberger & Holland, 2015; Khan et al., 2013; Jung et al., 2011). Results from the model (Table 30) show that all VIF values are less than 10 (VIF < 10). The multi-collinearity of this model can be accepted.

**Table 29: Inner VIF of common method bias measurement model of the moderating role of demographic characteristics on the relationship between personal financial behaviour and investment decision-making (institution)**

| | Financial literacy | Investment decision making (institution) |
|---|---|---|
| Age | | 1.432 |
| Education | | 1.246 |
| Employment status | | 5.815 |
| Financial attitude | 2.377 | |
| Financial behaviour | 2.652 | |
| Financial knowledge | 1.921 | |
| Financial literacy | | 1.842 |
| Financial wellbeing | 2.210 | |
| Gender | | 1.190 |
| Income | | 1.683 |
| Investment decision making (institution) | | |
| Moderating Effect 1 | | 2.116 |
| Moderating Effect 10 | | 1.331 |
| Moderating Effect 11 | | 1.657 |
| Moderating Effect 12 | | 11.700 |
| Moderating Effect 13 | | 1.965 |
| Moderating Effect 14 | | 1.742 |
| Moderating Effect 15 | | 8.573 |
| Moderating Effect 16 | | 1.398 |
| Moderating Effect 17 | | 2.781 |
| Moderating Effect 18 | | 7.527 |
| Moderating Effect 2 | | 1.898 |
| Moderating Effect 3 | | 8.133 |
| Moderating Effect 4 | | 1.561 |
| Moderating Effect 5 | | 2.807 |
| Moderating Effect 6 | | 6.461 |
| Moderating Effect 7 | | 1.492 |
| Moderating Effect 8 | | 1.469 |
| Moderating Effect 9 | | 12.772 |
| Religious affiliation | | 5.583 |
| Risk perception | | 1.459 |
| Risk tolerance | | 1.705 |

Source: Field survey, (2022)

Table 29 presents the common method bias results generated from the model. The common method bias (CMB) is identified through a full Collinearity assessment approach (Kock, 2015). Hair et al., (2017) postulate that for VIF to be free from bias, the values should be lesser than the 3.3 threshold. The VIF values obtained in Table 29 indicate that, all the inner VIF values are within the threshold (that is < 3.3). This is indicative that the model is free from common method bias.

**Table 30: Outer Loadings measurement model of the moderating role of demographic characteristics on the relationship between personal financial behaviour and investment decision-making (institution)**

| | Loading | T Statistics | P Values |
|---|---|---|---|
| AGE <- Age | 1.000 | | |
| EDU <- Education | 1.000 | | |
| ESTA <- Employment status | 1.000 | | |
| FA1 <- Financial attitude | 0.905 | 41.291 | 0.000 |
| FA1 <- Financial literacy | 0.788 | 22.517 | 0.000 |
| FA2 <- Financial attitude | 0.944 | 100.668 | 0.000 |
| FA2 <- Financial literacy | 0.800 | 22.285 | 0.000 |
| FA4 <- Financial attitude | 0.898 | 31.625 | 0.000 |
| FB1 <- Financial behaviour | 0.829 | 35.106 | 0.000 |
| FB1 <- Financial literacy | 0.787 | 26.964 | 0.000 |
| FB2 <- Financial behaviour | 0.808 | 26.928 | 0.000 |
| FB2 <- Financial literacy | 0.757 | 19.979 | 0.000 |
| FB3 <- Financial behaviour | 0.903 | 57.243 | 0.000 |
| FB3 <- Financial literacy | 0.861 | 32.753 | 0.000 |
| FB4 <- Financial behaviour | 0.705 | 12.706 | 0.000 |
| FB4 <- Financial literacy | 0.590 | 9.479 | 0.000 |
| FB5 <- Financial behaviour | 0.719 | 14.841 | 0.000 |
| FB5 <- Financial literacy | 0.638 | 11.127 | 0.000 |
| FK1 <- Financial knowledge | 0.793 | 18.103 | 0.000 |
| FK1 <- Financial literacy | 0.524 | 6.984 | 0.000 |
| FK2 <- Financial knowledge | 0.755 | 14.378 | 0.000 |
| FK2 <- Financial literacy | 0.506 | 6.726 | 0.000 |
| FK5 <- Financial knowledge | 0.715 | 19.493 | 0.000 |
| FK5 <- Financial literacy | 0.653 | 14.111 | 0.000 |
| FL5 <- Financial wellbeing | 1.000 | | |
| FL5 <- Financial literacy | 0.786 | 28.075 | 0.000 |
| Financial literacy * Age <- Moderating | 0.919 | 12.596 | 0.000 |

**Table 30 contiuned**

| | | | |
|---|---|---|---|
| Effect 1 | | | |
| Financial literacy * Education <- Moderating Effect 2 | 0.898 | 15.290 | 0.000 |
| Financial literacy * Employment status <- Moderating Effect 3 | 1.017 | 10.602 | 0.000 |
| Financial literacy * Gender <- Moderating Effect 4 | 0.832 | 19.915 | 0.000 |
| Financial literacy * Income <- Moderating Effect 5 | 0.894 | 14.850 | 0.000 |
| Financial literacy * Religious affiliation <- Moderating Effect 6 | 0.924 | 11.895 | 0.000 |
| GENDER <- Gender | 1.000 | | |
| ICM <- Income | 1.000 | | |
| ID3 <- Investment decision making (institution) | 0.838 | 27.270 | 0.000 |
| ID5 <- Investment decision making (institution) | 0.870 | 30.854 | 0.000 |
| IDI1 <- Investment decision making (institution) | 0.898 | 51.942 | 0.000 |
| IDI2 <- Investment decision making (institution) | 0.908 | 42.870 | 0.000 |
| RLG <- Religious affiliation | 1.000 | | |
| RP10 <- Risk perception | 0.832 | 29.632 | 0.000 |
| RP11 <- Risk perception | 0.817 | 22.724 | 0.000 |
| RP2 <- Risk perception | 0.815 | 24.989 | 0.000 |
| RP3 <- Risk perception | 0.853 | 33.998 | 0.000 |
| RP4 <- Risk perception | 0.751 | 17.762 | 0.000 |
| RP5 <- Risk perception | 0.851 | 40.859 | 0.000 |
| RP6 <- Risk perception | 0.898 | 52.126 | 0.000 |
| RP7 <- Risk perception | 0.865 | 36.373 | 0.000 |
| RP9 <- Risk perception | 0.776 | 20.173 | 0.000 |
| RT1 <- Risk tolerance | 0.780 | 28.344 | 0.000 |
| RT2 <- Risk tolerance | 0.803 | 24.961 | 0.000 |
| RT3 <- Risk tolerance | 0.774 | 17.937 | 0.000 |
| RT5 <- Risk tolerance | 0.698 | 13.440 | 0.000 |
| RT6 <- Risk tolerance | 0.785 | 16.333 | 0.000 |
| RT7 <- Risk tolerance | 0.712 | 12.411 | 0.000 |
| Risk perception * Age <- Moderating Effect 7 | 0.855 | 20.767 | 0.000 |
| Risk perception * Education <- Moderating Effect 8 | 1.071 | 14.469 | 0.000 |
| Risk perception * Employment status <- Moderating Effect 9 | 0.928 | 19.911 | 0.000 |

**Table 30 contiuned**

| | | | |
|---|---|---|---|
| Risk perception * Gender <- Moderating Effect 10 | 0.988 | 28.728 | 0.000 |
| Risk perception * Income <- Moderating Effect 11 | 0.922 | 22.681 | 0.000 |
| Risk perception * Religious affiliation <- Moderating Effect 12 | 0.975 | 18.618 | 0.000 |
| Risk tolerance * Age <- Moderating Effect 13 | 0.908 | 16.259 | 0.000 |
| Risk tolerance * Education <- Moderating Effect 14 | 0.912 | 16.984 | 0.000 |
| Risk tolerance * Employment status <- Moderating Effect 15 | 1.020 | 14.189 | 0.000 |
| Risk tolerance * Gender <- Moderating Effect 16 | 0.952 | 24.924 | 0.000 |
| Risk tolerance * Income <- Moderating Effect 17 | 0.898 | 15.414 | 0.000 |
| Risk tolerance * Religious affiliation <- Moderating Effect 18 | 1.019 | 15.249 | 0.000 |

Source: Field survey, (2022)

The results from Table 30 present the outer loadings for respective constructs used in the model. A loading factor above 0.4 indicates sufficiency of items included in the model (Hair, 2006). The outer loading factors reported in the Table 30 shows that all the values obtained are above the threshold of 0.4. The findings show all the indicators reliably measured their respective constructs given their loadings (>0.4) and level of significance ($p<0.05$) for all the indicators. This implies that the individual items were sufficient in measuring respondents' investment decision.

**Table 31: Path Co-efficient of the structural model measurement model of the moderating role of demographic characteristics on the relationship between personal financial behaviour and investment decision-making (institution)**

| | Beta | F2 | T Statistics | P Values |
|---|---|---|---|---|
| Age -> Investment decision making (institution) | -0.093 | 0.016 | 1.801 | 0.036 |
| Education -> Investment decision making (institution) | -0.001 | 0.000 | 0.022 | 0.491 |
| Employment status -> Investment decision making (institution) | -0.099 | 0.004 | 0.113 | 0.455 |
| Financial attitude -> Financial literacy | 0.254 | 9.210 | 17.100 | 0.000 |
| Financial behaviour -> Financial literacy | 0.522 | 34.975 | 21.839 | 0.000 |
| Financial knowledge -> Financial literacy | 0.242 | 10.365 | 12.255 | 0.000 |
| Financial literacy -> Investment decision making (institution) | 0.573 | 0.462 | 7.744 | 0.000 |
| Financial wellbeing -> Financial literacy | 0.154 | 3.639 | 11.210 | 0.000 |
| Gender -> Investment decision making (institution) | 0.092 | 0.019 | 1.781 | 0.038 |
| Income -> Investment decision making (institution) | 0.027 | 0.001 | 0.468 | 0.320 |
| Moderating Effect 1 -> Investment decision making (institution) | 0.078 | 0.006 | 1.218 | 0.112 |
| Moderating Effect 10 -> Investment decision making (institution) | -0.066 | 0.008 | 1.117 | 0.132 |
| Moderating Effect 11 -> Investment decision making (institution) | 0.064 | 0.004 | 0.949 | 0.171 |
| Moderating Effect 12 -> Investment decision making (institution) | -0.134 | 0.000 | 0.121 | 0.452 |
| Moderating Effect 13 -> Investment decision making (institution) | 0.012 | 0.001 | 0.171 | 0.432 |
| Moderating Effect 14 -> Investment decision making (institution) | -0.023 | 0.000 | 0.267 | 0.395 |
| Moderating Effect 15 -> Investment decision making (institution) | 0.003 | 0.008 | 0.005 | 0.498 |
| Moderating Effect 16 -> Investment decision making (institution) | -0.071 | 0.002 | 1.100 | 0.136 |
| Moderating Effect 17 -> Investment decision making (institution) | -0.053 | 0.000 | 0.555 | 0.289 |
| Moderating Effect 18 -> Investment decision making (institution) | -0.026 | 0.000 | 0.048 | 0.481 |
| Moderating Effect 2 -> Investment decision making (institution) | -0.006 | 0.007 | 0.073 | 0.471 |
| Moderating Effect 3 -> Investment decision making (institution) | -0.150 | 0.012 | 0.325 | 0.372 |
| Moderating Effect 4 -> Investment | - | 0.007 | 1.412 | 0.079 |

**Table 31 contiuned**

| | | | | |
|---|---|---|---|---|
| decision making (institution) | 0.103 | | | |
| Moderating Effect 5 -> Investment decision making (institution) | -0.005 | 0.000 | 0.057 | 0.477 |
| Moderating Effect 6 -> Investment decision making (institution) | 0.189 | 0.012 | 0.448 | 0.327 |
| Moderating Effect 7 -> Investment decision making (institution) | -0.096 | 0.012 | 1.329 | 0.092 |
| Moderating Effect 8 -> Investment decision making (institution) | 0.065 | 0.009 | 1.124 | 0.130 |
| Moderating Effect 9 -> Investment | 0.123 | 0.003 | 0.099 | 0.460 |
| Religious affiliation -> Investment decision making (institution) | 0.091 | 0.004 | 0.115 | 0.454 |
| Risk perception -> Investment decision making (institution) | 0.140 | 0.035 | 1.316 | 0.094 |
| Risk tolerance -> Investment decision making (institution) | 0.074 | 0.008 | 0.928 | 0.177 |

Source: Field survey, (2022)

The results from Table 31 present the path coefficient of moderation constructs used in the model. The path results show that age is a significant predictor of respondents' investment decision-making (Beta=0.093; p=0.036) with a small effect size ($f^2$=0.016). Prospective investors' attitude and behaviour are influenced by many factors at the time of investment decision making (Bhavani & Shetty, 2017). This study is in accordance with a study by Patel and Modi (2017) who found that demographic variables such as age, gender and income have varying degrees of impact on investment decision-making of investors. Similarly, Bhavani and Shetty (2017), in their study aimed at investigating the impact of demographics and perceptions of the investor on an individual's investment choice found that investor's demographics (including age) significantly influence the selection of investment avenues. Hastings and Michell (2020) also highlight that compared to aged investors, productive or young investors tend to manage finances efficiently and therefore make future investments for a prosperous life.

The path results show that education is not a significant predictor of respondents' investment decision-making (Beta=0.001; p=0.491) with no effect size ($f^2$=0.000). This finding confirms the research of Radianto et al., (2020) which states that an individual's education has no statistically significant influence on his or her investment decisions. Contrary to previous expectations, Pratiwi and Prijati (2015), argued that individuals with high educational levels have the tendency of investing in possible avenues because they understand well how to make decisions to invest in financial management. Also, the result is at variance with findings by Davar and Gill (2007) in their study aimed at exploring the underlying dimensions in the selection of different investment avenues for investors; they found that demographic factors like age and education have a significant influence on investment decision making. Furthermore, the finding is inconsistent with research by Bhavani and Shetty (2017) that highlight that investors' demographics (including age) significantly influence the selection of investment avenues.

The path results show that employment status is not a significant predictor of respondents' investment decision-making (Beta=0.099; p=0.455) with a small effect size ($f^2$=0.004). This study is in accordance with a study by Patel and Modi (2017) which demonstrates that demographic variables such as investors' employment status do not necessarily have an impact on their investment decision-making. On the contrary, the finding is not in line with Bhavani and Shetty (2017) which highlighted that an investor's employment status significantly influences the selection of investment avenues.

Also, the path results show that financial attitude is a significant predictor of respondents' financial literacy (Beta=0.254; p<0.001) with a moderate effect size ($f^2$=9.210). This finding confirms Atkinso and Messy's study (2012), which highlights that an individual's positive financial attitude (including appropriate financial planning and expenditure) enhances the individual's financial literacy level. In addition, Banerjee, Kumar and Philip (2017) argued that the financial attitude of individuals increases with a positive influence of financial literacy on financial awareness.

The path results also depict that financial behavior is a significant predictor of respondents' financial literacy (Beta=0.522; p<0.001) with a relatively high effect size ($f^2$=34.975). Bhushan and Medury (2014) added that building positive behavior and attitude of individuals enhances their financial literacy level. Also, Banerjee, Kumar and Philip (2017) highlight that the all-inclusive financial behavior of individuals rises with a positive influence of financial literacy on financial awareness.

Also, the path results depict that financial knowledge is a significant predictor of financial literacy (Beta=0.242; p<0.001) with a moderate effect size ($f^2$=10.365). This finding confirms a study by Van Rooij, Lusardi and Alessie (2011) that financial knowledge tends to have a significant influence on individuals' financial literacy; for instance, financial literacy enables individuals to make future investment plans, including retirement plans.

The path results also depict that financial literacy is a significant predictor of respondents' investment decision-making (Beta=0.573; p<0.001) with a small effect size ($f^2$= 0.462). Financial literacy provides individuals' with the skill to exploit knowledge and understanding to enforce valuable

financial decisions (Kumari, 2020; Kumari & Ferdous, 2019; Oteng, 2019). The finding confirms a study by Oteng (2019) that an individual's capability to make rigorous and relevant investment decisions and consequently invest more depends on the individual's financial literacy level.

In addition, the path results depict that financial literacy is a significant predictor of respondents' financial well-being (Beta=0.154; $p<0.001$) with a relatively high effect size ($f^2=3.639$). Bhushan and Medury (2014) believe that building positive behavior and attitude of individuals enhances their financial well-being. Similarly, financial decision-making based on financial literacy has been found to influence financial capability and financial well-being (Janor et al., 2016). Individuals' financial literacy and apt financial attitude are crucial for their financial well-being as well as their economic empowerment (Haque & Julfiqar, 2016). Proper investment and effective management of money are therefore relevant for improved livelihood and well-being of individuals (Haque & Julfiqar, 2016).

The path results show that gender is a significant predictor of respondents' investment decision making-institution (Beta=0.092; $p=0.038$) with a small effect size ($f^2=0.019$). This study is in line with a study by Patel and Modi (2017) which posits that demographic variables such as age, gender and income have varying degrees of impact on the investment decision-making of investors. Similarly, Bhavani and Shetty (2017), argue that investors' demographics (including gender) significantly influence their selection of investment avenues. Also, Iman (2011) who aimed at understanding the patterns of differences in the risk-taking habits with respect to investors' gender, found that compared to men, women significantly differ

in their investment behaviors. That is women display less risk-taking than men in making investment decisions (Wang, Killer & Siegrist 201; Fisher, 2010).

The path results show that income is a significant predictor of respondents' investment decision-making-institution (Beta=0.092; p=0.320) with a small effect size ($f^2$=0.019). This finding is consistent with previous studies, for instance, Henager and Cude (2016) highlight that investors' income greatly influences their decision to invest; implying that the income level of productive workers influences their interest and ability in investing a portion of their generated income or assets. Also, Ida and Dwinta (2010) argued that individuals' income level has a significant impact on the management of their personal finances- that is, the higher their income, the more considerate they are to making investment decisions.

The path results show that religious affiliation is not a significant predictor of respondents' investment decision-making (Beta=0.091; p=0.454) with a small effect size ($f^2$=0.004). The finding is consistent with research by Alderman, Forsyth and Walton (2017) who found that an individual's religiosity does not significantly influence his/her investment choice decisions, most especially pertaining to retirement investments. Furthermore, Haron and Wan Azmi (2008) found that profit motive is the basis for Islamic investors in Malaysia, and not necessarily their religious motive. Contrary to this, Tahir and Brimble (2011) in their study found evidence of the influence of Islamic teachings on investment decision making among people identified as Muslims.

Moreover, the path results also depict that risk perception is not a significant predictor of respondents' investment decision institution (Beta=0.140; p=0.094) with a small effect size ($f^2$= 0.035). The result is

however contrary to the findings of Gallery and Newton (2016) which stipulate that individuals' investment decisions are greatly affected by their risk perception of investment companies they intend to invest in.

In addition, the path results indicate that risk tolerance is not a significant predictor of respondents' investment decision- institution. (Beta=0.074; p=0.177) with a moderate effect size ($f^2$=0.008). The results indicate that respondents' decision to invest in financial institutions does not necessarily depend on their tolerance of investment risk. This finding is not in line with Ainia and Lutfi (2019) who showed that investors with high-risk tolerance are more willing to accept the risk of loss from an investment institution provided the investment provides an avenue of providing a higher level of profit.

The path results show that age as moderating variable does not have a significant influence on the relationship between financial literacy and investment decision making (institution) of individuals (Beta=0.078; p=0.001) with a small effect size ($f^2$=0.006). The result shows that an individual's age does not provide him with the skill to exploit knowledge and understanding to enforce valuable financial decisions (Kumari, 2020; Kumari & Ferdous, 2019; Oteng, 2019). This indicates that people need to acquire knowledge and skills to enable them to venture into investment avenues irrespective of age.

The path results show that education as moderating variable does not have a significant influence on the relationship between financial literacy and investment decision making (institution) of individuals (Beta=0.006; p=0.471) with a small effect size ($f^2$=0.007). This finding confirmsRadianto et al., (2020) study which claims that an individual's education has no statistically

significant influence on his or her investment decisions. Contrary to previous expectations, Pratiwi and Prijati (2015), argued that individuals with high educational levels have the tendency of investing in possible avenues because they understand well how to make decisions to invest in financial management. Also, the result is at variance with the findings of Davar and Gill (2007)whose study aimed at exploring the underlying dimensions in the selection of different investment avenues for investors. They found that demographic factors like age and education have a significant influence on investment decision-making. Similarly, the findings of Bhavani and Shetty (2017) are also contrary to this finding since their study, highlighted that investors' demographics (including age) significantly influence the selection of their investment avenues. This indicates that people need to acquire knowledge and skills to enable them to venture into investment avenues irrespective of their educational level.

Also, the path results show that employment status as a moderating variable does not have a significant influence on the relationship between financial literacy and investment decision making (institution) of individuals (Beta=0.150; p=0.372) with a small effect size ($f^2$=0.012). This study follows a study by Patel and Modi (2017) which states that demographic variables such as employment status do not necessarily have an impact on investors' investment decision-making. On the contrary, the finding is inconsistent with research by Bhavani and Shetty (2017) which highlighted that investors' employment status significantly influences their selection of investment avenues.

The path results show that gender as a moderating variable does not have a significant influence on the relationship between financial literacy and investment decision making (institution) of individuals (Beta=0.103; p=0.079) with a small effect size ($f^2$=0.103). The result shows that an individual's gender, either male or female does not provide him the skill to exploit knowledge and understanding to enforce valuable financial decisions. The finding is consistent with the findings of Shariff, Ahadzadeh and Turner (2020) which revealed that gender has no influence on investors' financial literacy as well as their financial behaviour. The result is however inconsistent with findings by Çera and Tuzi (2019) who found that gender disparities exist when it comes to investment decision making as a result of financial literacy. Their findings revealed that, compared to young males, young females are interested in money spending issues as well as money management. On the other hand, young men tend to deal with risk and are eager to learn to enhance their financial literacy level (Odean, 2001), which in turn influences their investment decision making (Çera & Tuzi, 2019). Also, Chen and Volpe (2002), in their study found that generally, men are more enthusiastic, more confident and more willing to learn about financial issues compared to women.

The path results show that income as a moderating variable does not have a significant influence on the relationship between financial literacy and investment decision making (institution) of individuals (Beta=0.005; p=0.477) with no effect size ($f^2$=0.00). This finding is contrary to what previous studies suggest, for instance, Henager and Cude (2016) highlight that investors' income greatly influences their decision to invest, implying that the income

level of productive workers influences their interest and ability in investing a portion of their generated income. Also, Ida and Dwinta (2010) argued that individuals' income level has a significant impact on their personal financial management- implying that the higher their income, the more considerate they are to making investment decisions.

The path results show that religious affiliation as a moderating variable does not have a significant influence on the relationship between financial literacy and investment decision making (institution) of individuals (Beta=0.189; p=0.327) with a small effect size ($f^2$=0.012). The finding confirms a study by Tahir and Brimble (2011) who found evidence of the influence of Islamic teachings on investment decision making among people identified as Muslims. On the contrary, the finding is not in line with Alderman, Forsyth and Walton (2017) who found that an individual's religiosity does not significantly influence his/her investment choice decisions, most especially pertaining to retirement investments. Furthermore, Haron and Wan Azmi (2008) found that profit motive is the basis for Islamic investors in Malaysia, and not necessarily their religious motive.

The path results show that age as moderating variable does not have a significant influence on the relationship between risk perception and investment decision making (institution) of individuals (Beta=0.096 p=0.092) with a small effect size ($f^2$=0.012). The finding confirms previous studies such as Bairagi (2021) who found that individuals' age does not affect their investment risk perceptions and their investment. Nonetheless, the finding is inconsistent with Agrawal et al., (2009) who argued that age displays an individual's risk perception and investment decision-making over their life

span; and further explained that on average, an individual's financial decision-making peak is over 50 years. Also, Onsomu (2015) found that age disparities influence the overconfidence bias of respondents, with the most affected individuals between the ages 0f 31 and 40 years.

The path results show that gender as moderating variable does not have a significant influence on the relationship between risk perception and investment decision making (institution) of individuals (Beta=0.065; p=0.132) with a small effect size ($f^2$=0.008). This finding is however inconsistent with previous studies which highlight for instance that men invest more in risky assets than womenWang, Keller and Siegrist (2011) believe that compared to men, women's risk perception is greater, with regards to various investment avenues (including stocks and bonds). The result is not consistent with existing studies such as (Fisher, 2010) that emphasized that women display less risk-taking than men in making investment decisions. Moreover, Bhavani and Shetty (2017) also argue that investors' demographics (including gender) significantly influence the selection of investment avenues. In addition, Iman (2011) in his study aimed at understanding the patterns of differences in the risk-taking habits with respect to investors' gender, found that compared to men, women significantly differ in their investment behaviours.

The path results show that education as a moderating variable does not have a significant influence on the relationship between risk perception and investment decision making (institution) of individuals (Beta=0.065; p=0.130) with a small effect size ($f^2$=0.009). This finding confirms research by Radianto et al., (2020) which posits that an individual's educational level influences his or her perception of investment decisions. Also, Bairagi (2021) states that

individuals' level of education does not affect their investment risk perceptions and their investment decisions. However, the findings vary from Pratiwi and Prijati (2015), who argued that individuals with high educational levels have the tendency of investing in possible avenues because they understand well how to make decisions to invest in financial management. Also, the result is at variance with the findings of Davar and Gill (2007) in their study aimed at exploring the underlying dimensions in the selection of different investment avenues for investors; they found that demographic factors like age and education have a significant influence on investment decision making. Furthermore, the finding is inconsistent with Bhavani and Shetty (2017), which highlighted that investors' demographics (including age) significantly influence the selection of investment avenues.

The path results show that income as a moderating variable does not have a significant influence on the relationship between risk perception and investment decision making (institution) of individuals (Beta=0.123 p=0.460) with a small effect size ($f^2$=0.003). This finding contradicts the findings of Lutfi (2011) which suggests that income influences individual investors' risk behaviour because individuals with low incomes tend to save their monies at the bank while individuals with high incomes invest in capital markets. Similarly, Prakash et al., (2014) confirm Lufti's findings that individual investors with less income prefer lower-risk investments compared to individual investors with higher incomes.

The path results show that employment as moderating variable does not have a significant influence on the relationship between risk perception and investment decision-making (institution) of individuals (Beta=0.066

p=0.0132) with a small effect size ($f^2$=0.008). This study is following Patel and Modi (2017) assert that demographic variables such as investors' employment status do not necessarily have an impact on their investment decision-making. On the contrary, the finding is not consistent with Bhavani and Shetty (2017) who highlighted that an investor's employment status significantly influences the selection of investment avenues.

The path results show that religious affiliation as moderating variable does not have a significant influence on the relationship between risk perception and investment decision making (institution) of individuals (Beta=0.064 p=0.171) with a small effect size ($f^2$=0.004). The findings are contrary to the findings of Mansour and Jlassi (2014) whose study highlighted that religion influences the risk level at which investors are eager to undertake and as well affects the nature of investment they are willing to choose. Similarly, Tahir and Brimble (2011) in their study found evidence for the influence of Islamic teachings on investment decision making among people identified as Muslims.

The path results show that age as moderating variable does not have a significant influence on the relationship between risk tolerance and investment decision making (institution) of individuals (Beta=0.012 p=0.043) with a small effect size ($f^2$=0.001). The result is inconsistent with prior studies, for instance, Yao et al., (2005) found that risk tolerance reduces as an individual's age increases. Grabble (2000) revealed that on average, any additional increase in people's age reduces their chances of investing in high-risk ventures by 2%. This implies that younger investors are more risk tolerant than older individuals. Furthermore, Graham (2002) highlighted that compared

to men, women hold a relatively less risky investment as their age increases. He further explained that women tend to attach heavyweight to negative information, due to how intensely they process information and thereby resulting in their risk-averse nature compared to men.

The path results show that education as moderating variable does not have a significant influence on the relationship between risk tolerance and investment decision making (institution) of individuals (Beta=0.023; p=0.395) with no effect size ($f^2$=0.000). This result is however inconsistent with a study by Sulaiman (2012) who found that individuals with higher education tend to have an aggressive attitude toward risk-taking, are more tolerant to risk and therefore willing to make relevant investment decisions. Also, Ainia and Lutfi (2019) argue that educated investors who exhibit high-risk tolerance are more willing to accept the risk of loss from an investment institution provided the investment provides an avenue of providing a higher level of profit. One's ability and capacity to evaluate risk rises as education level increases and thereby leads to high tolerance to risk (Sulaiman, 2012).

The path results show that employment as moderating variable does not have a significant influence on the relationship between risk tolerance and investment decision making (institution) of individuals (Beta=0.003; p=0.498) with no effect size ($f^2$=0.008). The path results show that gender as moderating variable does not have a significant influence on the relationship between risk tolerance and investment decision making (institution) of individuals (Beta=0.071; p=0.136) with a small effect size ($f^2$=0.002). The result confirms a study by Sulaiman (2012) who highlighted that individual's gender and risk tolerance are independent. On the contrary, Dickason and Ferreira (2018)

found that compared to women, men are more risk tolerant because women tend to be risk averse. Also, Yao and Hanna (2005) also revealed that women are less risk tolerant than men in the portfolio distribution of their distinct pension contributions.

The path results show that income as moderating variable does not have a significant influence on the relationship between risk tolerance and investment decision making (institution) of individuals (Beta=0.053; p=0.289) with no effect size ($f^2$=0.000). Previous studies found a positive relationship between the income of individual investors and their financial risk tolerance. For instance, Sulaiman (2012) found that relatively high-income earners are more risk tolerant compared to lower-income earners and therefore higher income earners invest more relative to lower-income earners. Moreover, Ida and Dwinta (2010) argued that an individual's income level has a significant impact on the management of their personal finances, which implies that the higher their income, the more likely they are to make investment decisions. This current finding is however inconsistent with these findings.

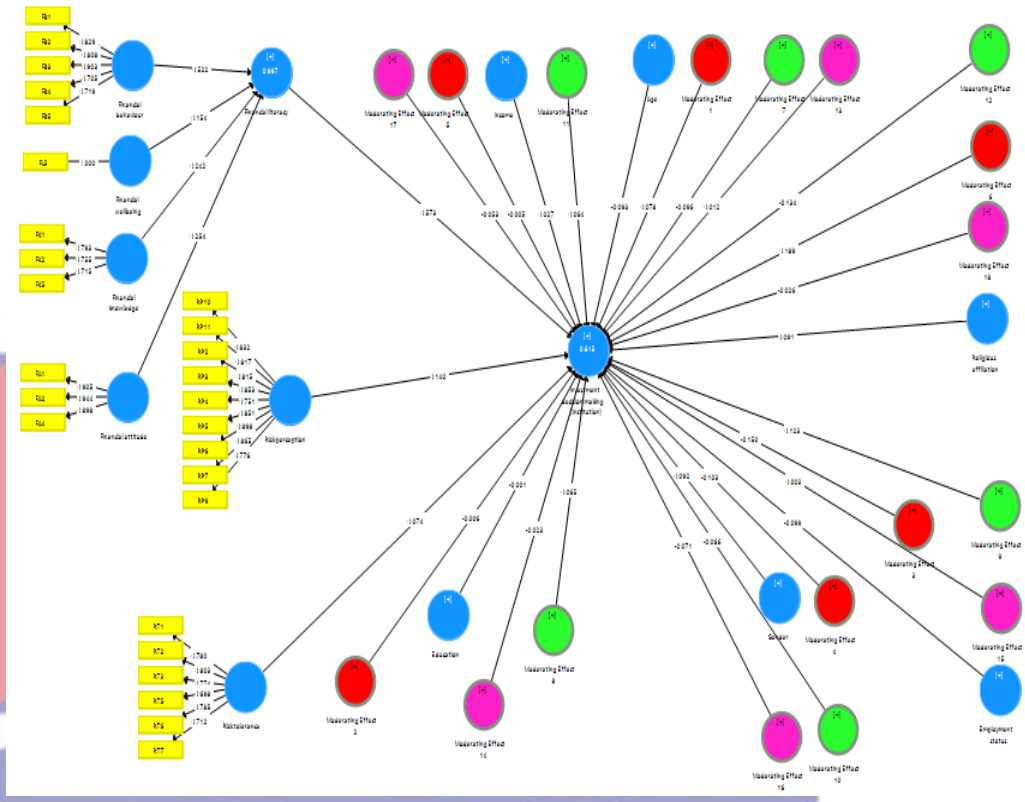

*Figure 6*: Structural Model of the moderating role of demographic characteristics on the relationship between personal financial behaviour and investment decision-making (institution)

Source: Field survey, (2022)

**Moderation role of demographic characteristics in the relationship between personal financial behaviour and Investment Decision-Making (Product)**

**Measurement Model**

This objective sought to assess the moderating effects of the demographic characteristics on the relationships between the components of personal investment decision-making (Risk perception, risk tolerance and financial literacy) and product-based investment decision-making. The model was evaluated based on the two-stage approach (Kassem, Khoiry & Hamzah, 2020; Afum, et al., 2020; Schuberth, Henseler & Dijkstra, 2018). The measurement model was first evaluated and then the structural model. The findings are presented as follows.

**Table 32: Construct Validity and Reliability of the measurement model of the moderating role of demographic characteristics of the relationship between personal financial behaviour and Investment Decision-Making (Product)**

| | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|---|
| Age | 1.000 | 1.000 | 1.000 | 1.000 |
| Education | 1.000 | 1.000 | 1.000 | 1.000 |
| Employment status | 1.000 | 1.000 | 1.000 | 1.000 |
| Financial attitude | 0.904 | 0.908 | 0.940 | 0.838 |
| Financial behaviour | 0.853 | 0.870 | 0.896 | 0.634 |
| Financial knowledge | 0.628 | 0.621 | 0.799 | 0.570 |
| Financial literacy | 0.896 | 0.909 | 0.915 | 0.502 |
| Financial wellbeing | 1.000 | 1.000 | 1.000 | 1.000 |
| Gender | 1.000 | 1.000 | 1.000 | 1.000 |
| Income | 1.000 | 1.000 | 1.000 | 1.000 |
| Investment decision making (product) | 0.860 | 0.870 | 0.890 | 0.503 |
| Moderating Effect 1 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 10 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 11 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 12 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 13 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 14 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 15 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 16 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 17 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 18 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 2 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 3 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 4 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 5 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 6 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 7 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 8 | 1.000 | 1.000 | 1.000 | 1.000 |
| Moderating Effect 9 | 1.000 | 1.000 | 1.000 | 1.000 |
| Religious affiliation | 1.000 | 1.000 | 1.000 | 1.000 |
| Risk perception | 0.943 | 0.975 | 0.952 | 0.687 |
| Risk tolerance | 0.856 | 0.865 | 0.892 | 0.580 |

Source: Field survey, (2022)

The measurement model in Table 32 provides information in respect of the quality criteria for the structural model in terms of the construct validity and reliability of the primary data collected on the items in the structured questionnaire. The reliabilities for the primary data in respect of the constructs

under investigation are adequately measured (rho_As>0.7) except in the case of financial knowledge which is recorded a little below the threshold (rho_A=0.621). composite validity for each construct is achieved (CRs>0.7). Convergent validity for each construct is adequately measured (AVEs>0.5). These evaluation criteria are well documented in extant literature (Benitez, Henseler, Castillo & Schuberth, 2020; Aggrey, Kusi, Afum, Osei-Ahenkan, Norman, Boateng & Owusu, 2021).

**Table 33: Discriminant Validity of the measurement model of the moderating role of demographic characteristics of the relationship between personal financial behaviour and Investment Decision-Making (Product)**

| | Age | Education | Employment status | Financial attitude | Financial behaviour | Financial knowledge | Financial literacy | Financial wellbeing | Gender | Income | Investment decision making (product) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | | | | | | | | | |
| Education | 0.226 | | | | | | | | | | |
| Employment status | 0.231 | 0.134 | | | | | | | | | |
| Financial attitude | 0.106 | 0.064 | 0.050 | | | | | | | | |
| Financial behaviour | 0.050 | 0.029 | 0.065 | 0.725 | | | | | | | |
| Financial knowledge | 0.163 | 0.086 | 0.045 | 0.858 | 0.682 | | | | | | |
| Financial literacy | 0.090 | 0.057 | 0.071 | 0.919 | 1.040 | 1.028 | | | | | |
| Financial wellbeing | 0.012 | 0.053 | 0.100 | 0.563 | 0.775 | 0.585 | 0.815 | | | | |
| Gender | 0.145 | 0.173 | 0.160 | 0.073 | 0.131 | 0.130 | 0.119 | 0.081 | | | |
| Income | 0.444 | 0.230 | 0.447 | 0.140 | 0.121 | 0.075 | 0.117 | 0.052 | 0.177 | | |
| Investment decision making (product) | 0.052 | 0.140 | 0.167 | 0.473 | 0.567 | 0.531 | 0.585 | 0.384 | 0.071 | 0.049 | |
| Moderating Effect 1 | 0.042 | 0.007 | 0.006 | 0.015 | 0.044 | 0.050 | 0.040 | 0.019 | 0.001 | 0.025 | 0.105 |
| Moderating Effect 10 | 0.058 | 0.052 | 0.026 | 0.164 | 0.160 | 0.160 | 0.184 | 0.134 | 0.013 | 0.173 | 0.146 |
| Moderating Effect 11 | 0.030 | 0.071 | 0.001 | 0.168 | 0.145 | 0.104 | 0.152 | 0.087 | 0.183 | 0.027 | 0.058 |
| Moderating Effect 12 | 0.014 | 0.128 | 0.053 | 0.092 | 0.080 | 0.085 | 0.088 | 0.008 | 0.004 | 0.020 | 0.152 |
| Moderating Effect 13 | 0.033 | 0.046 | 0.046 | 0.020 | 0.087 | 0.037 | 0.062 | 0.027 | 0.044 | 0.038 | 0.137 |
| Moderating Effect 14 | 0.046 | 0.040 | 0.026 | 0.193 | 0.110 | 0.247 | 0.184 | 0.120 | 0.006 | 0.025 | 0.098 |
| Moderating Effect 15 | 0.041 | 0.023 | 0.050 | 0.109 | 0.071 | 0.081 | 0.084 | 0.007 | 0.012 | 0.036 | 0.188 |
| Moderating Effect 16 | 0.042 | 0.006 | 0.013 | 0.285 | 0.171 | 0.315 | 0.267 | 0.218 | 0.003 | 0.070 | 0.149 |
| Moderating Effect 17 | 0.038 | 0.026 | 0.041 | 0.047 | 0.041 | 0.038 | 0.048 | 0.038 | 0.075 | 0.102 | 0.162 |

**Table 33 contiuned**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Moderating Effect 18 | 0.001 | 0.007 | 0.021 | 0.094 | 0.049 | 0.083 | 0.077 | 0.054 | 0.031 | 0.030 | 0.156 |
| Moderating Effect 2 | 0.007 | 0.027 | 0.070 | 0.264 | 0.334 | 0.379 | 0.367 | 0.291 | 0.048 | 0.022 | 0.184 |
| Moderating Effect 3 | 0.006 | 0.062 | 0.023 | 0.081 | 0.076 | 0.064 | 0.083 | 0.031 | 0.081 | 0.014 | 0.073 |
| Moderating Effect 4 | 0.001 | 0.052 | 0.099 | 0.337 | 0.374 | 0.480 | 0.425 | 0.291 | 0.070 | 0.062 | 0.255 |
| Moderating Effect 5 | 0.025 | 0.022 | 0.016 | 0.154 | 0.110 | 0.120 | 0.129 | 0.045 | 0.057 | 0.048 | 0.114 |
| Moderating Effect 6 | 0.018 | 0.046 | 0.012 | 0.060 | 0.034 | 0.054 | 0.053 | 0.026 | 0.057 | 0.011 | 0.067 |
| Moderating Effect 7 | 0.133 | 0.016 | 0.012 | 0.061 | 0.041 | 0.104 | 0.065 | 0.040 | 0.066 | 0.032 | 0.043 |
| Moderating Effect 8 | 0.013 | 0.160 | 0.102 | 0.012 | 0.081 | 0.097 | 0.077 | 0.068 | 0.048 | 0.062 | 0.199 |
| Moderating Effect 9 | 0.011 | 0.117 | 0.015 | 0.099 | 0.083 | 0.068 | 0.088 | 0.023 | 0.027 | 0.001 | 0.150 |
| Religious affiliation | 0.118 | 0.158 | 0.875 | 0.049 | 0.059 | 0.071 | 0.070 | 0.076 | 0.138 | 0.395 | 0.140 |
| Risk perception | 0.061 | 0.034 | 0.091 | 0.432 | 0.303 | 0.463 | 0.401 | 0.241 | 0.053 | 0.143 | 0.274 |
| Risk tolerance | 0.139 | 0.052 | 0.084 | 0.502 | 0.409 | 0.625 | 0.524 | 0.290 | 0.038 | 0.042 | 0.559 |

| Moderating Effect 1 | Moderating Effect 10 | Moderating Effect 11 | Moderating Effect 12 | Moderating Effect 13 | Moderating Effect 14 | Moderating Effect 15 | Moderating Effect 16 | Moderating Effect 17 | Moderating Effect 18 |
|---|---|---|---|---|---|---|---|---|---|
| 0.047 | | | | | | | | | |
| 0.095 | 0.071 | | | | | | | | |
| 0.069 | 0.163 | 0.440 | | | | | | | |
| 0.490 | 0.039 | 0.149 | 0.021 | | | | | | |
| 0.072 | 0.106 | 0.072 | 0.098 | 0.236 | | | | | |
| 0.047 | 0.058 | 0.205 | 0.279 | 0.212 | 0.032 | | | | |
| 0.029 | 0.150 | 0.079 | 0.104 | 0.197 | 0.255 | 0.035 | | | |
| 0.187 | 0.080 | 0.263 | 0.212 | 0.438 | 0.299 | 0.559 | 0.172 | | |
| 0.040 | 0.098 | 0.187 | 0.306 | 0.109 | 0.073 | 0.885 | 0.005 | 0.523 | |
| 0.215 | 0.041 | 0.029 | 0.038 | 0.073 | 0.412 | 0.125 | 0.177 | 0.049 | 0.077 |
| 0.189 | 0.027 | 0.166 | 0.252 | 0.051 | 0.123 | 0.500 | 0.027 | 0.306 | 0.347 |
| 0.137 | 0.263 | 0.025 | 0.007 | 0.024 | 0.198 | 0.038 | 0.295 | 0.021 | 0.025 |
| 0.431 | 0.011 | 0.225 | 0.138 | 0.201 | 0.049 | 0.299 | 0.019 | 0.464 | 0.207 |
| 0.062 | 0.002 | 0.141 | 0.293 | 0.041 | 0.083 | 0.380 | 0.018 | 0.233 | 0.386 |
| 0.389 | 0.003 | 0.276 | 0.110 | 0.303 | 0.131 | 0.008 | 0.045 | 0.144 | 0.035 |
| 0.017 | 0.038 | 0.199 | 0.033 | 0.106 | 0.319 | 0.048 | 0.092 | 0.062 | 0.078 |
| 0.001 | 0.155 | 0.470 | 0.921 | 0.017 | 0.064 | 0.353 | 0.064 | 0.246 | 0.299 |
| 0.018 | 0.004 | 0.021 | 0.078 | 0.001 | 0.007 | 0.021 | 0.033 | 0.034 | 0.037 |
| 0.052 | 0.041 | 0.081 | 0.061 | 0.080 | 0.142 | 0.044 | 0.258 | 0.088 | 0.054 |
| 0.069 | 0.260 | 0.115 | 0.060 | 0.102 | 0.174 | 0.133 | 0.104 | 0.168 | 0.143 |

| Moderating Effect 2 | Moderating Effect 3 | Moderating Effect 4 | Moderating Effect 5 | Moderating Effect 6 | Moderating Effect 7 | Moderating Effect 8 | Moderating Effect 9 | Religious affiliation | Risk perception |
|---|---|---|---|---|---|---|---|---|---|
| 0.059 | | | | | | | | | |
| 0.356 | 0.104 | | | | | | | | |
| 0.231 | 0.590 | 0.125 | | | | | | | |
| 0.146 | 0.838 | 0.121 | 0.528 | | | | | | |
| 0.021 | 0.004 | 0.056 | 0.099 | 0.084 | | | | | |
| 0.272 | 0.065 | 0.041 | 0.028 | 0.035 | 0.176 | | | | |
| 0.082 | 0.376 | 0.043 | 0.191 | 0.295 | 0.185 | 0.059 | | | |
| 0.047 | 0.011 | 0.063 | 0.011 | 0.031 | 0.015 | 0.117 | 0.056 | | |
| 0.081 | 0.052 | 0.211 | 0.141 | 0.048 | 0.025 | 0.020 | 0.046 | 0.132 | |
| 0.181 | 0.105 | 0.319 | 0.047 | 0.089 | 0.076 | 0.123 | 0.056 | 0.073 | 0.401 |

Source: Field survey, (2022)

Discriminant validity was measured with the HTMT ratio. The results are presented on Table 33. The results show discriminant validity is measured by the paired constructs (HTMT ratios<1) as prescribed by Benitez, et al., (2020).

**Table 34: Outer VIF Values of collinearity validity of the measurement model of the moderating role of demographic characteristics of the relationship between personal financial behaviour and Investment Decision-Making (Product)**

| | VIF |
|---|---|
| AGE | 1.000 |
| EDU | 1.000 |
| ESTA | 1.000 |
| FA1 | 2.683 |
| FA1 | 3.712 |
| FA2 | 3.932 |
| FA2 | 3.288 |
| FA4 | 2.843 |
| FB1 | 2.210 |
| FB1 | 3.483 |
| FB2 | 2.145 |
| FB2 | 2.346 |
| FB3 | 3.068 |
| FB3 | 3.478 |
| FB4 | 1.624 |
| FB4 | 1.629 |
| FB5 | 1.657 |
| FB5 | 1.700 |
| FK1 | 1.598 |
| FK1 | 1.668 |
| FK2 | 1.547 |
| FK2 | 1.775 |
| FK5 | 1.087 |
| FK5 | 2.382 |
| FL5 | 1.000 |
| FL5 | 3.031 |
| Financial literacy * Age | 1.000 |
| Financial literacy * Education | 1.000 |
| Financial literacy * Employment status | 1.000 |
| Financial literacy * Gender | 1.000 |
| Financial literacy * Income | 1.000 |
| Financial literacy * Religious affiliation | 1.000 |
| GENDER | 1.000 |
| ICM | 1.000 |
| ID10 | 2.220 |
| ID8 | 1.730 |
| ID9 | 2.136 |
| IDP2 | 2.676 |
| IDP3 | 2.740 |

**Table 34 contiuned**

| | |
|---|---|
| IDP4 | 1.681 |
| IDP5 | 1.534 |
| IDP7 | 1.796 |
| RLG | 1.000 |
| RP10 | 3.314 |
| RP11 | 2.807 |
| RP2 | 2.689 |
| RP3 | 3.319 |
| RP4 | 2.090 |
| RP5 | 3.018 |
| RP6 | 4.935 |
| RP7 | 4.035 |
| RP9 | 2.454 |
| RT1 | 1.758 |
| RT2 | 1.835 |
| RT3 | 1.784 |
| RT5 | 1.639 |
| RT6 | 2.396 |
| RT7 | 2.024 |
| Risk perception * Age | 1.000 |
| Risk perception * Education | 1.000 |
| Risk perception * Employment status | 1.000 |
| Risk perception * Gender | 1.000 |
| Risk perception * Income | 1.000 |
| Risk perception * Religious affiliation | 1.000 |
| Risk tolerance * Age | 1.000 |
| Risk tolerance * Education | 1.000 |
| Risk tolerance * Employment status | 1.000 |
| Risk tolerance * Gender | 1.000 |
| Risk tolerance * Income | 1.000 |
| Risk tolerance * Religious affiliation | 1.000 |

Source: Field survey, (2022)

The results in respect of multi-collinearity for the measures of the constructs under consideration are presented in Table 34. The results demonstrate there is no problem with multi-collinearity (Outer VIFs<5).

**Table 35: Common method bias of the measurement model of the moderating role of demographic characteristics of the relationship between personal financial behaviour and Investment Decision-Making (Product)**

| | Financial literacy | Investment decision making (product) |
|---|---|---|
| Age | | 1.431 |
| Education | | 1.245 |
| Employment status | | 5.802 |
| Financial attitude | 2.387 | |
| Financial behaviour | 2.649 | |
| Financial knowledge | 1.931 | |
| Financial literacy | | 1.809 |
| Financial wellbeing | 2.209 | |
| Gender | | 1.186 |
| Income | | 1.692 |
| Moderating Effect 1 | | 2.065 |
| Moderating Effect 10 | | 1.321 |
| Moderating Effect 11 | | 1.632 |
| Moderating Effect 12 | | 11.785 |
| Moderating Effect 13 | | 1.920 |
| Moderating Effect 14 | | 1.699 |
| Moderating Effect 15 | | 9.090 |
| Moderating Effect 16 | | 1.398 |
| Moderating Effect 17 | | 2.652 |
| Moderating Effect 18 | | 7.876 |
| Moderating Effect 2 | | 1.885 |
| Moderating Effect 3 | | 8.680 |
| Moderating Effect 4 | | 1.551 |
| Moderating Effect 5 | | 2.700 |
| Moderating Effect 6 | | 6.810 |
| Moderating Effect 7 | | 1.491 |
| Moderating Effect 8 | | 1.461 |
| Moderating Effect 9 | | 12.941 |
| Religious affiliation | | 5.545 |
| Risk perception | | 1.448 |
| Risk tolerance | | 1.636 |

Source: Field survey, (2022)

The results with respect to the measure of common method bias are presented in Table 35. The results show there is no problem of common method bias (Inner VIFs<5) as recommended by Kock (2015) for most of the constructs/variables except for Employment status, Moderating Effect 12, Moderating Effect 15, Moderating Effect 18, Moderating Effect 3, Moderating Effect 6, Moderating Effect 8, Moderating Effect 9 and religious affiliation.

**Table 36: Outer Loading of the measurement model of the moderating role of demographic characteristics of the relationship between personal financial behaviour and Investment Decision-Making (Product)**

| | Loading | T Statistics | P Values |
|---|---|---|---|
| AGE <- Age | 1.000 | | |
| EDU <- Education | 1.000 | | |
| ESTA <- Employment status | 1.000 | | |
| FA1 <- Financial attitude | 0.905 | 42.018 | 0.000 |
| FA1 <- Financial literacy | 0.788 | 22.739 | 0.000 |
| FA2 <- Financial attitude | 0.944 | 97.697 | 0.000 |
| FA2 <- Financial literacy | 0.800 | 22.072 | 0.000 |
| FA4 <- Financial attitude | 0.898 | 30.422 | 0.000 |
| FB1 <- Financial behaviour | 0.829 | 35.215 | 0.000 |
| FB1 <- Financial literacy | 0.787 | 27.401 | 0.000 |
| FB2 <- Financial behaviour | 0.807 | 26.992 | 0.000 |
| FB2 <- Financial literacy | 0.758 | 20.186 | 0.000 |
| FB3 <- Financial behaviour | 0.903 | 58.053 | 0.000 |
| FB3 <- Financial literacy | 0.863 | 35.274 | 0.000 |
| FB4 <- Financial behaviour | 0.706 | 12.828 | 0.000 |
| FB4 <- Financial literacy | 0.597 | 9.864 | 0.000 |
| FB5 <- Financial behaviour | 0.718 | 14.787 | 0.000 |
| FB5 <- Financial literacy | 0.637 | 11.137 | 0.000 |
| FK1 <- Financial knowledge | 0.791 | 17.336 | 0.000 |
| FK1 <- Financial literacy | 0.517 | 6.787 | 0.000 |
| FK2 <- Financial knowledge | 0.753 | 13.968 | 0.000 |
| FK2 <- Financial literacy | 0.500 | 6.562 | 0.000 |
| FK5 <- Financial knowledge | 0.720 | 19.906 | 0.000 |
| FK5 <- Financial literacy | 0.655 | 14.512 | 0.000 |
| FL5 <- Financial wellbeing | 1.000 | | |
| FL5 <- Financial literacy | 0.786 | 27.628 | 0.000 |
| Financial literacy * Age <- Moderating Effect 1 | 0.920 | 12.540 | 0.000 |
| Financial literacy * Education <- Moderating Effect 2 | 0.899 | 15.420 | 0.000 |
| Financial literacy * Employment status <- Moderating Effect 3 | 1.018 | 10.756 | 0.000 |
| Financial literacy * Gender <- Moderating Effect 4 | 0.833 | 19.783 | 0.000 |
| Financial literacy * Income <- Moderating Effect 5 | 0.896 | 14.913 | 0.000 |
| Financial literacy * Religious affiliation <- Moderating Effect 6 | 0.924 | 11.704 | 0.000 |
| GENDER <- Gender | 1.000 | | |
| ICM <- Income | 1.000 | | |
| ID10 <- Investment decision making (product) | 0.739 | 18.333 | 0.000 |
| ID8 <- Investment decision making (product) | 0.653 | 11.368 | 0.000 |
| ID9 <- Investment decision making (product) | 0.734 | 17.273 | 0.000 |
| IDP2 <- Investment decision making | 0.719 | 18.575 | 0.000 |

**Table 36 contiuned**

| | | | |
|---|---|---|---|
| (product) | | | |
| IDP3 <- Investment decision making (product) | 0.755 | 21.910 | 0.000 |
| IDP4 <- Investment decision making (product) | 0.643 | 12.823 | 0.000 |
| IDP5 <- Investment decision making (product) | 0.674 | 14.123 | 0.000 |
| IDP7 <- Investment decision making (product) | 0.746 | 21.433 | 0.000 |
| RLG <- Religious affiliation | 1.000 | | |
| RP10 <- Risk perception | 0.827 | 16.269 | 0.000 |
| RP11 <- Risk perception | 0.815 | 16.908 | 0.000 |
| RP2 <- Risk perception | 0.805 | 15.105 | 0.000 |
| RP3 <- Risk perception | 0.854 | 19.472 | 0.000 |
| RP4 <- Risk perception | 0.747 | 14.284 | 0.000 |
| RP5 <- Risk perception | 0.867 | 20.126 | 0.000 |
| RP6 <- Risk perception | 0.894 | 20.559 | 0.000 |
| RP7 <- Risk perception | 0.861 | 18.208 | 0.000 |
| RP9 <- Risk perception | 0.781 | 14.377 | 0.000 |
| RT1 <- Risk tolerance | 0.772 | 27.813 | 0.000 |
| RT2 <- Risk tolerance | 0.765 | 16.406 | 0.000 |
| RT3 <- Risk tolerance | 0.755 | 16.331 | 0.000 |
| RT5 <- Risk tolerance | 0.753 | 21.075 | 0.000 |
| RT6 <- Risk tolerance | 0.798 | 18.428 | 0.000 |
| RT7 <- Risk tolerance | 0.724 | 14.299 | 0.000 |
| Risk perception * Age <- Moderating Effect 7 | 0.856 | 20.218 | 0.000 |
| Risk perception * Education <- Moderating Effect 8 | 1.073 | 14.267 | 0.000 |
| Risk perception * Employment status <- Moderating Effect 9 | 0.928 | 19.631 | 0.000 |
| Risk perception * Gender <- Moderating Effect 10 | 0.985 | 28.227 | 0.000 |
| Risk perception * Income <- Moderating Effect 11 | 0.928 | 22.636 | 0.000 |
| Risk perception * Religious affiliation <- Moderating Effect 12 | 0.976 | 18.044 | 0.000 |
| Risk tolerance * Age <- Moderating Effect 13 | 0.912 | 16.615 | 0.000 |
| Risk tolerance * Education <- Moderating Effect 14 | 0.914 | 17.713 | 0.000 |
| Risk tolerance * Employment status <- Moderating Effect 15 | 1.019 | 14.915 | 0.000 |
| Risk tolerance * Gender <- Moderating Effect 16 | 0.957 | 25.632 | 0.000 |
| Risk tolerance * Income <- Moderating Effect 17 | 0.899 | 16.197 | 0.000 |
| Risk tolerance * Religious affiliation <- Moderating Effect 18 | 1.014 | 15.637 | 0.000 |

Source: Field survey, (2022)

The outer loadings in Table 36 show that all the indicators significantly measured the constructs/variables they purported to measure ($p<0.05$).

**Table 37: Path Co-efficient of the measurement model of the moderating role of demographic characteristics of the relationship between personal financial behaviour and Investment Decision-Making (Product)**

| | Beta | f2 | t Statistics | p Values |
|---|---|---|---|---|
| Moderating Effect 1 -> Investment decision making (product) | -0.100 | 0.008 | 1.236 | 0.108 |
| Moderating Effect 10 -> Investment decision making (product) | -0.029 | 0.001 | 0.455 | 0.325 |
| Moderating Effect 11 -> Investment decision making (product) | 0.110 | 0.012 | 1.688 | 0.046 |
| Moderating Effect 12 -> Investment decision making (product) | 0.091 | 0.001 | 0.079 | 0.469 |
| Moderating Effect 13 -> Investment decision making (product) | -0.022 | 0.000 | 0.301 | 0.382 |
| Moderating Effect 14 -> Investment decision making (product) | -0.028 | 0.001 | 0.258 | 0.398 |
| Moderating Effect 15 -> Investment decision making (product) | 0.028 | 0.000 | 0.028 | 0.489 |
| Moderating Effect 16 -> Investment decision making (product) | -0.025 | 0.001 | 0.313 | 0.377 |
| Moderating Effect 17 -> Investment decision making (product) | -0.043 | 0.001 | 0.439 | 0.330 |
| Moderating Effect 18 -> Investment decision making (product) | 0.067 | 0.001 | 0.071 | 0.472 |
| Moderating Effect 2 -> Investment decision making (product) | -0.053 | 0.002 | 0.460 | 0.323 |
| Moderating Effect 3 -> Investment decision making (product) | 0.013 | 0.000 | 0.013 | 0.495 |
| Moderating Effect 4 -> Investment decision making (product) | 0.006 | 0.000 | 0.059 | 0.477 |
| Moderating Effect 5 -> Investment decision making (product) | -0.068 | 0.003 | 0.716 | 0.237 |
| Moderating Effect 6 -> Investment decision making (product) | -0.247 | 0.015 | 0.261 | 0.397 |
| Moderating Effect 7 -> Investment decision making (product) | 0.091 | 0.008 | 1.363 | 0.086 |
| Moderating Effect 8 -> Investment decision making (product) | 0.082 | 0.010 | 1.320 | 0.093 |
| Moderating Effect 9 -> Investment decision making (product) | 0.084 | 0.001 | 0.067 | 0.473 |

Source: Field survey, (2022)

Table 37 presents the results of the path co-efficient of the measurement model of the moderating role of demographic characteristics in the relationship between personal financial behaviour and investment decision-making (Product). Observation of the moderation results shows almost all the variables (Gender, age, education, religious affiliation, marital status, employment status) significantly failed to moderate the predictive relationships between the dimensions of personal investment behaviour (Financial literacy, risk perception and risk tolerance) and institution-based investment decision-making among the respondents. Only income positively and significantly moderated the predictive relationship between risk perception and product-based investment decision-making (Beta=0.110; p=0.04: p<0.05) with a small effect size ($f^2$=0.012).

The results show that income is a statistically positive moderating predictor of the association between risk perception and product-based investment decision making of respondents. This result corroborates prior findings that found that income positively and significantly moderates the predictive relationship between risk perception and product-based investment decision-making. For example, Udeepa (2015) in his study aimed at exploring the factors affecting the investment decisions of 162 investors in the Colombo Stock Exchange stock market found that demographic factors (including income) significantly influence investors' perception of investing in stock markets. Also, Khanam (2017) found that selected demographic characteristics, such as income levels of respondents' influence their product-based investment decision, for instance, the amount of investment in different types of shares. Similarly, Lufti (2011) posits that the income levels of

investors influence their risk perception about product-based investment decisions. He further explained that investors with high-income levels invest in long-term investments (such as investments in bonds, shares and others) whiles investors with low incomes tend to invest in short-term investments.

The path results show that age is not a significant moderating predictor of the relationship between financial literacy and product-based investment decision making of respondents (Beta= -0.100; p=0.108: p>0.05) with a small effect size ($f^2$=0.008). The finding confirms a study by Oteng (2019) that an individual's capability to make rigorous and relevant product-based investment decisions and consequently invest more depends on the individual's financial literacy level and not necessarily their age. This result is inconsistent with findings obtained from a study conducted by Khanam (2017) that investigated the impact of demographic characteristics of some selected 300 investors on their stock market investment. Khanam (2017) found that selected demographic characteristic such as the age of respondents influences investors' product-based investment decision, for instance, the amount of investment in different types of shares. Other scholars such as Kumari (2020) and Kumari and Ferdous (2019), stipulate that an individual's age does not provide him or her needed skill to exploit knowledge and understanding to enforce valuable financial decisions.

The path results show that education is not a significant moderating predictor of the relationship between financial literacy and product-based investment decision making of respondents (Beta= -0.053; p=0.323: p>0.05) with a small effect size ($f^2$=0.002). This finding confirms Radianto et al., (2020) who state that an individual's education has no statistically significant

influence on his or her product-based investment decisions. Contrary to previous expectations, Pratiwi and Prijati (2015) argued that individuals with high educational levels have the tendency of engaging in long-term investment products because they understand well how to achieve financial management through investment. Also, Bhavani and Shetty (2017) posit that investors' educational level impacts their financial literacy and hence influences their selection of investment products to invest in. This indicates that people could have the skills to enable them to venture into investment avenues irrespective of their educational level. Similarly, Udeepa (2015) in his study found that demographic factors (such as education) significantly influence investors' perception of investing in stock markets.

The path results show that employment is not a significant moderating predictor of the relationship between financial literacy and product-based investment decision making of respondents (Beta= 0.013; p=0.495: p>0.05) with no effect size ($f^2$=0.000). This study per Patel and Modi's (2017) findings shows that demographic variables such as employment status do not necessarily have an impact on investors' product investment decision-making. On the contrary, the finding is not in line with Obamuyi (2013) whose study aimed at examining the most influential factors on product-based investment decisions of 297 investors in Nigeria and found that investors' socio-demographic characteristics (such as employment status) impact their product decision making; with people who are employed and into formal occupations investing more in long term investments such as bonds.

The path results show that gender is not a significant moderating predictor of the correlation between financial literacy and product-based

investment decision making of respondents (Beta= 0.006; p=0.477: p>0.05) with no effect size ($f^2$=0.000). The result shows that an individual's gender, either male or female does not provide him the skill to exploit knowledge and understanding to enforce valuable financial decisions. The finding is consistent with findings by Sharif, Ahadzadeh and Turner (2020) which highlighted that gender has no influence on investors' financial literacy as well as their financial behaviour. The result is however contrary to previous studies (such as Udeepa, 2015) who found that selected demographic characteristic of investors (such as gender) influences their product-based investment decision, for instance, the amount of investment in different types of shares. Also, Chen and Volpe (2002), in their study found that generally, men are more enthusiastic, more confident and more willing to learn about financial issues as compared to women.

The path results show that income is not a significant moderating predictor of the relationship between financial literacy and product-based investment decision making of respondents (Beta= -0.068; p=0.397) with a small effect size ($f^2$=0.003). This finding is inconsistent with previous studies, for instance, Henager and Cude (2016) highlight that investors' income greatly impacts their financial literacy level and consequently their product-based investment decision, implying that the income level of productive workers influences their interest and ability in investing a portion of their generated income. Also, Udeepa (2015) in his study aimed at exploring the factors affecting the investment decisions of 162 investors in the Colombo Stock Exchange stock market found that demographic factors (including income) significantly influence investors' decisions in investing in stock markets.

Additionally, Khanam (2017) found that selected demographic characteristic (such as income levels of respondents) influences their product-based investment decision, for instance, the amount of investment in different types of shares.

The path results show that religious affiliation is not a significant moderating predictor of the relationship between financial literacy and product-based investment decision making of respondents (Beta= -0.247; p=0.397) with a small effect size ($f^2$=0.015). The finding is in line with Udeepa (2017) whose study found that religious reasons have a minimal impact on respondents' financial literacy and hence a minimal influence on their product-based investment decisions. Also, Tahir and Brimble (2011) found evidence for the influence of Islamic teachings on investment decision-making among people identified as Muslims. The finding is however inconsistent with research by Alderman, Forsyth and Walton (2017) who found that an individual's religiosity does not significantly influence his/her investment choice decisions, most especially on retirement investments.

The path results show that age is not a significant moderating predictor of the relationship between risk perception and product-based investment decision making of respondents (Beta=0.091 p=0.086) with a small effect size ($f^2$=0.008). The finding confirms previous studies such as Bairagi (2021) who found that individuals' age does not affect their investment risk perceptions and their investment. The result is, however, not consistent with findings by Chavali and Mohanraj (2016) who aimed at examining the influence of demographic variables and investors' risk perception on their product-based investment decision and found that age had an influence on investors'

investment patterns and their product-based investment decision making. Agrawal et al., (2009) also argue that age displays an individual's risk perception and investment decision-making over their life span and further explain that on average, an individual's financial decision-making peak is over 50 years.

The path results show that gender is not a significant moderating predictor of the association between risk perception and product-based investment decision making of respondents (Beta= -0.029; p=0.325) with a small effect size ($f^2$=0.001). The result is not consistent with existing studies such as (Fisher, 2010) that emphasized that women display less risk-taking than men in making product-based investment decisions; hence men tend to invest in long-term investments (such as investment in bonds and shares) compared to women. Perera (2016) asserts that gender differentials impact greatly on an individual's emotional, cognitive and herding factors, and thus the gender of an investor impacts his or her decision-making, as to the product to invest in. Moreover, Bhavani and Shetty (2017) also argue that investors' demographics (including gender) significantly influence the selection of investment products and avenues.

Furthermore, the path results show that education is not a significant moderating predictor of the association between risk perception and product-based investment decision-making of respondents (Beta=0.082; p=0.093) with a small effect size ($f^2$=0.010). This result is consistent with findings from a study carried out by Bairagi (2021) which revealed that investors' level of education does not impact their perception of investment decisions. That is to say, investors' level of education has no influence on their investment risk

perceptions and their investment decisions, including the kind of product to invest in. On the other hand, the findings vary from findings by Davar and Gill (2007) that investors' selection of investment products is influenced by their demographic characteristics (including education).

The path results show that employment is not a significant moderating predictor of the association between risk perception and product-based investment decision making of respondents (Beta=0.084; p=0.473) with a small effect size ($f^2$=0.001). This finding is consistent with Patel and Modi (2017) who posit that a socio-demographic characteristic of investors, for instance, investors' employment status, does not necessarily have an impact on their investment decision-making, (including their product-based investment decisions). On the contrary, the finding is inconsistent with Bhavani and Shetty (2017) who highlighted that investors' employment status significantly influences their selection of investment products.

The path results show that religious affiliation is not a significant moderating predictor of the relationship between risk perception and product-based investment decision making of respondents (Beta=0.091; p=0.469) with a small effect size ($f^2$=0.001). The findings are contrary to the findings of Mansour and Jlassi (2014) which highlighted that religion influences the risk level at which investors are eager to undertake and as well affects the nature of the investment product they intend to opt for. Similarly, Tahir and Brimble (2011) in their study found evidence for the influence of Islamic teachings on the product-based investment decision among people identified as Muslims.

Moreover, the path results show that age is not a significant moderating predictor of the association between risk tolerance and product-

based investment decision of respondents (Beta= -0.022; p=0.382) with no effect size ($f^2$=0.000). The result corroborates with Sadiq and Ishaq (2014) who in their study aimed at examining the impact of demographic characteristics on Pakistan investors' risk tolerance on their investment choices and found that the age of investors' does not influence their level of tolerance to risk, and hence has no impact on their product-based investment choices. However, the findings do not conform with the findings of Ton and Nguyen (2014) whose study aimed at examining the effects of demographical characteristics on investment decisions on the Stock Market among investors in Vietnam found that investors' demographic factors (such as age) influence their investment in the stock market. Yao et al., (2005) also found that risk tolerance reduces as individuals' age increases and thus affects their investment decision choices. Older respondents have the tendency of underestimating their tolerance to financial risk, possibly due to their past experiences (Gilliam & Grable, 2010).

The path results show that education is not a significant moderating predictor of the association between risk tolerance and product-based investment decision of respondents (Beta= -0.028; p=0.398) with a small effect size ($f^2$=0.001). The finding is consistent with the findings of Heena (2015) which posit that investors' educational level has no influence in determining their attitude toward product-based investment risk. However, the result does not confirm findings by Sadiq and Ishaq (2014) that posit that investors' level of education is among demographic factors that influence their level of risk tolerance. Ainia and Lutfi (2019) also posit that educated investors exhibit high-risk tolerance willing to invest in long-term investment

products including bonds market. Also, investors with high education levels are likely to overestimate their tolerance in taking a financial risk, as a result of their knowledge in investment decisions (Gilliam & Grable, 2010).

The path results show that employment is not a significant moderating predictor of the correlation between risk tolerance and product-based investment decision of respondents (Beta=0.028; p=0.489) with no effect size ($f^2$=0.000). This result corroborates the findings of Sadiq and Ishaq (2014) who claim that investors' employment status does not influence their level of risk tolerance towards investment products.

The path results show that gender is not a significant moderating predictor of the association between risk tolerance and product-based investment decision of respondents (Beta= -0.025; p=0.377) with a small effect size ($f^2$=0.001). The result confirms similar findings by Sulaiman, (2012) that found that investors' gender does not impact their risk tolerance and hence has no influence on their product-based investment decisions. The result is however inconsistent with some prior studies that found that gender significantly influences investors' risk tolerance level and thus influences their product-based investment decisions. For instance, Kabra et al., (2010) argue in their study that men are risk-tolerant compared to women (risk averse). They further explained that women, as risk-averse investors take into consideration numerous factors before embarking on any financial investment than men do.

The path results show that income is not a significant moderating predictor of the association between risk tolerance and product-based investment decision of respondents (Beta= -0.043; p=0.330) with a small effect size ($f^2$=0.001). Khanam (2017) found that selected demographic

characteristics (such as income levels of respondents) influence their product-based investment decisions, for instance, the amount of investment in different types of shares. Also, Sulaiman (2012) argues that investors with high incomes are more risk tolerant compared to lower income investors and therefore higher income earners invest more relative to lower income earners. Similarly, Lufti (2011) posits that the income levels of investors influence their risk tolerance to investment decisions. This current finding is however inconsistent with these findings.

Lastly, the results depict that, religious affiliation is not a significant moderating predictor of the association between risk tolerance and product-based investment decision of respondents (Beta=0.067; p=0.472) with a small effect size ($f^2$=0.001). Mansour and Jlassi (2014) found that religion influences investors' level of risk tolerance toward investment products. Similarly, Tahir and Brimble (2011) in their study found evidence for the influence of Islamic teachings on the product-based investment decision among people identified as Muslims. However, the finding from this study is at variance with these earlier reported studies.

**Table 38: Co-efficient of Determination of the measurement model of the moderating role of demographic characteristics of the relationship between personal financial behaviour and Investment Decision-Making (Product)**

| | R Square | R Square Adjusted |
|---|---|---|
| Financial literacy | 0.997 | 0.997 |
| Investment decision making (product) | 0.488 | 0.423 |

Source: Field survey, (2021)

The predictors, the purported moderating variables given their moderating effects jointly accounted for a moderate positive change in product-based investment decision-making among the respondents (48.8%). The configured model is pictorially presented in Figure 6

Structural Model for Objective 4 (Product-based investment decision)

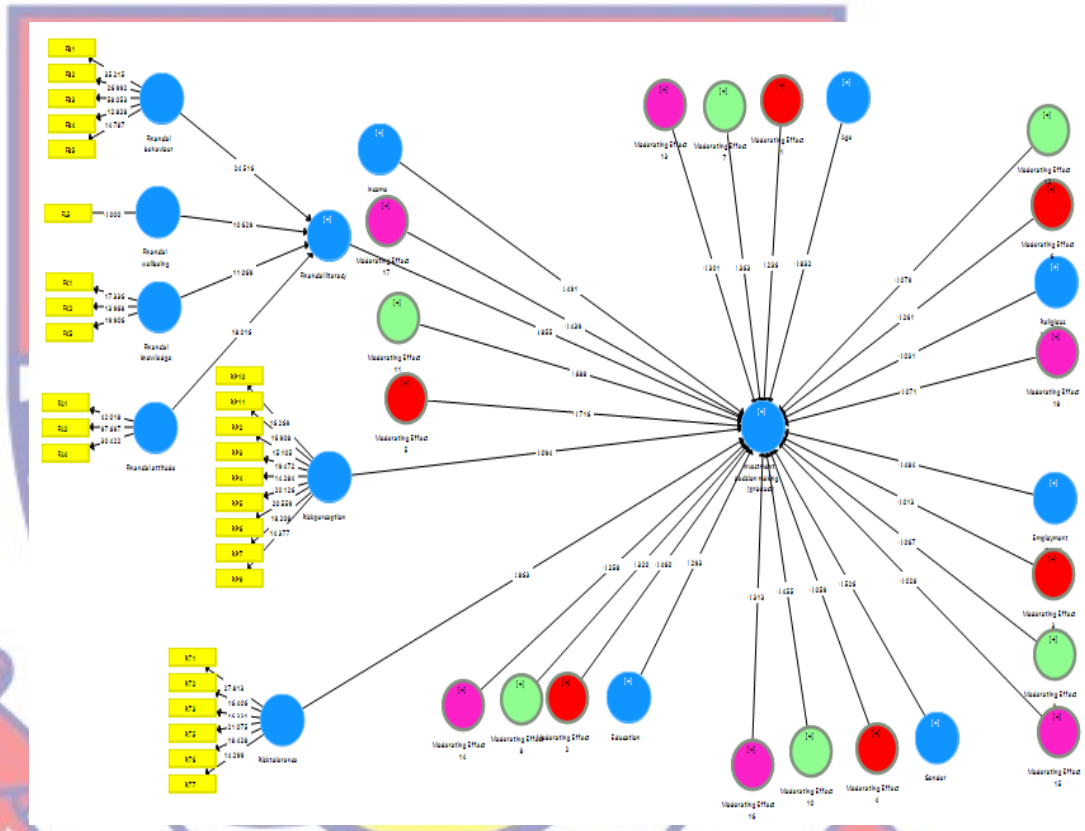

*Figure 7*: Structure Model for Moderation Analysis 4b

Source: Field survey, (2022)

# CHAPTER NINE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## Introduction

The key findings, conclusions, recommendations and contributions to the knowledge of the study can be found in this chapter. Some suggestions have been made for future research studies, based on the findings and the limitations of the study to make the understanding of cultural adherence, personal financial behaviour and investment decision making clearer in the Ghanaian context.

## Study Summary

The main objective of the study was to investigate the mediating role of personal financial behaviour on cultural adherence and investment decision making of household's heads in Ghana. The study was necessitated by the complexity of the financial market and how psychological factors affect the investment decision making of the Ghanaian investor and the seemingly little research conducted on the influence of culture on personal financial behaviour and investment decision making in the Ghanaian context.

Using the explanatory design, the study employed a descriptive and correlational study design, a systematic sampling was used to select 766 households heads within the Accra Metropolitan Assembly for the study as respondents for the study. With the help of research assistants, questionnaires were used to gather data for the study within three months starting from 15th July 2021 to 15th October 2021.

Through the adjusted Yamane sample size determination formula by Adam (2020), a total of 476 responses were analysed using SmartPLS. All the

variables for the study were measured using a seven-point Likert scale with 1 representing the least score and 7 representing the highest score. The study used only primary data, where a structured questionnaire was designed and used to collect the data from the household heads. The study adopted both descriptive and inferential statistical analyses. For descriptive analysis, tables were used while for the inferential analysis, factors analysis and Structural Equation Model.

The study was guided by four objectives and these are: to assess the influence of personal financial behaviour on investment decision making; to investigate how adherence to culture can influence personal financial behaviour; to exame the mediating role of personal financial behaviour on cultural adherence and investment decision-making and to investigate how demographic characteristics can moderate between personal financial behaviour, cultural adherence and investment decision-making. The Cronbach's Alpha and Factor Loading indicated that all the items under each construct measured adequately those constructs. Moreover, the model was free from serial collinearity problems and common bias because the variance inflation factor (VIF) and INNER VIF values obtained were within the threshold. Discriminant validity for each construct indicated that each construct was valid.

**Findings of objective One: impact of personal financial behaviour on investment decision-making**

This section presents the summary of the findings from research objective one which sought to examine the impact of personal financial behaviour on the investment decision-making of the respondents. Financial

attitude, financial behavior and financial knowledge were found to impact significantly the financial literacy of respondents. Also, financial literacy was found to be a significant positive predictor of respondents' financial well-being and investment decision-making. This means that investors with high financial literacy are more likely to make good and prudent investment decisions, and investors with low levels of financial literacy are not likely to make good investment decisions. Moreover, respondents' risk perception and risk tolerance had a significant positive impact on their investment decision-making. A person's risk perception is how they interpret the hazards that differ from their estimations or ideas and what actually occurs. Perception plays a significant effect on the risks that exist in any investment instrument related to human behaviour while making decisions, as perception is the initial phase of the risk response. When aware of the existence of a danger to an asset, a person naturally perceives or considers the amount of risk. The results of the study indicate that risk perception has a considerable and favourable influence on investment decision making. This implies that the greater the impression of a person's risk, the more likely they are to devote funds to high-risk assets.

Risk tolerance has a substantial positive effect on investment decisions. The greater the risk tolerance, the greater the investment decision making in high-risk assets. Risk tolerance is the level of acceptance or tolerance of risk. The result indicates that risk tolerance has a positive and significant effect on investment decision making. This indicates that the greater a person's risk tolerance, the greater the likelihood of allocating funds to riskier investments. Investors with a high risk tolerance are more willing to accept the possibility of incurring a loss from an investment if it offers a greater potential for return.

**Adherence to Culture and Personal Financial Behavior**

This section presents the summary of the findings from the second research objective which sought to assess the effect of cultural adherence on respondents' personal financial behaviour. Except for fatalism, all cultural adherence proxies included in the study (egalitarianism, hierarchy and individualism) were statistically significant predictors of risk tolerance among respondents. Hierarchy and Individualism were found to be significant predictors of financial literacy among respondents; however, egalitarianism and fatalism were statistically not correlated to financial literacy among respondents. Also, hierarchy and individualism were statistically significant predictors of risk perception among respondents. However, egalitarianism and fatalism were statistically insignificant predictors of risk perception among respondents.

**Cultural Adherence and Personal Financial behavior and Investment Decision-Making**

This section presents the summary of the findings from the third research objective which sought to assess the effect of cultural adherence and personal financial behaviour on investment decision making. With the exception of risk tolerance, all the other personal financial behaviour proxies, that is, financial literacy and risk perception, included in the study were not statistically significant predictors of respondents' institution- and product-based investment decisions. This means that risk tolerance affects the relationship between cultural adherence and investment decision making. The result indicates that individual investment decisions are influenced by cultural beliefs in ways that have varying effects on the success of businesses. The

investment decision that is made primarily based on cultural adherence works through risk tolerance.

**Moderation Analysis Demographic Characteristics on Investment Decision-Making (Institution)**

This section presents the summary of the findings from the fourth research objective which sought to assess the moderating effects of the demographic characteristics (gender, age, education, employment status, income and religious affiliation) on the relationships between the components of personal investment decision-making (Risk perception, risk tolerance and financial literacy) and institution-based investment decision-making.

Age, gender and income level of respondents were found to be significant predictors of respondent's institution-based decision-making. On the other hand, respondents' education, employment status and religious affiliation had no statistical association with their institution-based decision-making. However, the results indicated that all the demographic variables included in the study significantly failed to moderate the predictive relationships between the dimensions of personal investment behaviour (Financial literacy, risk perception and risk tolerance).

**Moderation Analysis of Demographic Characteristics on Investment Decision-Making (Product)**

This section presents the summary of the findings from the fourth research objective which sought to assess the moderating effects of the demographic characteristics (age, gender, employment status, gender, income and religious affiliation) on the relationships between the components of personal investment decision-making (Risk perception, risk tolerance and

financial literacy) and product-based investment decision-making. The moderation results indicate that with the exception of income, all the demographic variables included in the study significantly failed to moderate the predictive relationships between the dimensions of personal investment behaviour and product-based investment decision-making among the respondents. Only income positively and significantly moderated the predictive relationship between risk perception and product-based investment decision-making.

**Conclusions**

This study focused on the influence of personal investment behaviour and culture on investment decision-making. The analysis was based on a rigorous quantitative analysis and this study based on the research findings makes the following conclusions:

Firstly, the study concludes that all three components of personal investment behaviour significantly influence household heads' investment decisions. For example, it was observed that financial literacy (comprising attitude, knowledge and behaviour), risk perception and risk tolerance significantly influence individuals' decisions when it comes to an institutional-based investment as well as product-based investment. However, among the three components of personal investment behaviour, financial literacy is the most important variable that contributes to household heads' investment decision making. Financial literacy provides individuals with the skill to explore the knowledge and understanding to enforce valuable financial decisions including their institution-based investment decisions as well as product-based investment decisions. Also, investors face a certain level of

trade off between expected returns and risk, in an attempt to make investment decisions, hence individual investors' perspectives on risk can impact their institution-based investment decisions as well as product-based investment decisions. Risk tolerant investors tend to invest in higher-risk investments with unknown returns while risk-averse or risk conservative investors tend to avoid high-risk investments, and stick to investments with guaranteed results.

Secondly, this study concludes that the impact of cultural adherence on personal financial behaviour depends on how cultural adherence and personal financial behaviour are measured. This implies that the proxy for cultural adherence and or personal financial behaviour is critical for studies of this nature. For example, Egalitarianism has a significant impact on risk tolerance but not on financial literacy and risk perception. Also, individualism has a significant impact on risk perception and risk tolerance but financial literacy. However, the hierarchy has a significant impact on all the personal financial behaviour indicators whiles fatalism has no statistically significant impact on any of the personal financial behaviour indicators.

Thirdly, this study concludes that risk tolerance mediates the relationship between cultural adherence proxies has a significant impact on investment decision-making with regards to the product to invest in or the investment institution to invest with. The results show that egalitarianism does impact the investment decision making of respondents through risk tolerance. Individuals will venture into investment negotiations, provided they are interested to do so or not. For example, individuals' decision to invest in products is influenced by authority or affirmation of benefits by respected

people in society. The path results also show that individualism is a significant predictor of investment decision making.

Finally, though demographic characteristics such as age, gender and income have a significant impact on institution-based investment decisions, they do not significantly moderate the impact of personal financial behaviour and institution-based investment decision making. However, household heads' product-based investment decision-making do not significantly dependent on their demographic characteristics. These demographic characteristics also do not significantly mediate the impact of personal financial behavior on product-based investment decisions of household heads.

**Recommendation**

This study makes several policy recommendations based on the findings and conclusions indicated above;

**Objective One: impact of personal financial behaviour on investment decision-making**

Based on the findings, the study recommends that key financial stakeholders such as governments, Non-Governmental Organizations, and Financial Institutions create awareness of financial literacy by sensitizing and educating people on fundamental financial concepts needed to improve their financial literacy. Also, the study recommends that Government should make possible efforts to include financial literacy education in the current educational curriculum for all students at the elementary, secondary and higher levels to instill positive financial literacy knowledge, attitude, skills and behaviour among the population. Financial institutions should develop products that investors can easily understand. Investors should also be

encouraged to seek financial advice when making decisions concerning investments. Financial literacy week by the Bank of Ghana should be used to educate investors on investment and portfolio management. Financial institutions should understand the risk perception of their clients to enable them to develop an investment portfolio that suits them. Investors should also be encouraged to seek financial advice when making investment decisions. A law should be promulgated to make financial advice compulsory for all financial institutions.

**Adherence to Culture and Personal Financial Behaviour**

Based on the findings, the study recommends that the Government through the Ministry of Finance, Financial Institutions and Non-Governmental Organization should take into consideration cultural adherence factors, particularly, hierarchy in personal financial education. These stakeholders should encourage individuals in the high social class to involve in financial literacy since they have much influence on their families and society at large.

Financial institutions should enquire about their clients' cultural lineage in order to develop an investment portfolio that will suit their cultural identity. Opinion leaders and stakeholders, particularly those from affluent backgrounds, should be encouraged to participate in financial education because they wield considerable power within their families and society at large. The study recommends that the government, through the Ministry of Finance, financial institutions, and non-governmental organizations, take into consideration cultural adherence factors, particularly hierarchy, individualism, and egalitarianism, in personal financial education

**Adherence to Culture and Investment Decision-Making**

Based on the findings, the study recommends that investment products of investment institutions should pay much attention to cultural adherence of households. People in influential positions should be careful about endorsing financial products that are not licensed and that they have little knowledge about. They should rather promote financial institutions and products that are licensed. Financial education should be intensified to enable investors to acquire information about investments. Financial institutions should offer financial advisory services to their clients. Financial institutions should be made to develop a risk tolerance matrix to assess the risk tolerance level of their clients before offering them investment services.

**Moderation Analysis Demographic Characteristics on the Relationship Between Personal Financial Behaviour and Investment Decision Making**

This study recommends that the policy aimed at improving investment decisions of households through personal financial behaviour should not pay much attention to specific demographic characteristics of household heads. Thus, financial institutions should not invest many resources to segregate the financial market based on demographic characteristics if personal financial behaviour is targeted to improve the investment decision-making of households.

**Recommendations for Future Studies**

This study recommends that future studies in finance consider the following to improve the literature on personal financial behaviour and cultural adherence and investment decision-making:

1. future studies should consider all personal financial behaviour as a composite variable and assess its impact on investment decision-making.
2. future studies should focus on how culture as measured by religion, norms and value system influence investment decision making and moderate the relationship between personal financial behaviour and investment decision-making of households.
3. individual personal traits should be explored.

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# APPENDICS

## APPENDIX A

## QUESTIONNAIRE

This questionnaire is part of a research work aimed at gathering information for academic purposes. The topic of the study is ***Personal Financial Behaviour, Culture and Investment Decision Making.*** The research is aimed at examining individuals' beliefs and attitudes towards risk characteristics of different investment products and financial institutions. You are humbly invited to participate by filling the attached questionnaire. Your responses will be confidentially kept for the purposes of the research work only.

| **Part I: Please tick the option that best describes your answer.** | | |
|---|---|---|
| **1. Age:** | ☐ 18-25<br>☐ 36-45<br>☐ 56-65 | ☐ 26- 35<br>☐ 46-55<br>☐ 66 and more |
| **2. Gender:** | ☐ Male | ☐ Female |
| **3. Employment status:** | ☐ Permanent full-time job<br>☐ Self employed (work on my own business) | ☐ Permanent part-time job<br>☐ Student/ Unemployed/ Retired |
| **4. If you work, what is the company main activity:** | ☐ Finance / Banking/ Investment | ☐ Others |
| **5. Income per month (GHS):** | ☐ 500 or less<br>☐ More than 1,000 to 2,000<br>☐ More than 3,000 to 4,000<br>☐ More than 5,000 to 6,000 | ☐ More than 500 to 1,000<br>☐ More than 2,000 to 3,000<br>☐ More than 4,000 to 5,000<br>☐ More than 6,000 |
| **6. Education Level:** | ☐ MSLC/JHS<br>☐ Diploma/High National Diploma ☐ Graduate degree (Master's or Ph.D) | ☐SHS/Technical/Vocational<br>☐ College/Bachelor |
| **Religion** | ☐Christianity<br>☐Islamic<br>☐ Tradition | |
| **Marital status** | ☐married<br>☐ not married | ☐ separated<br>☐ divorced |

This questionnaire is measured using a Likert scale from statements that shows seven response categories starting from a scale of 1 to 7, namely (7) Strongly Disagree (SD), (6) Moderately Disagree (MD) (5) Disagree (D), (4) Neutral (N), (3) Agree (A), (2) Moderately Agree and (1) Strongly Agree (SA).

**RISK PERCEPTION**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| RP 1 | I am confident that the government will protect investors if something goes wrong with this investment portfolio. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| RP 2 | I have trust and confidence in this investment portfolio's performance. | | | | | | | |
| RP 3 | I believe the value of this investment portfolio will increase a lot in the future | | | | | | | |
| RP 4 | If I invested in this portfolio, I would spend a lot of time and effort monitoring its performance. | | | | | | | |
| RP 5 | I am confident in the financial experts' ability in forecasting the medium to long-term performance of this investment portfolio | | | | | | | |
| RP 6 | I am confident that this investment portfolio is right for me and will perform well. | | | | | | | |
| RP 7 | I am confident that the providers of this investment portfolio are well-regulated | | | | | | | |
| RP 8 | I believe that the consequences of investing in this portfolio could be very serious. | | | | | | | |
| RP 9 | I think the value of this investment portfolio will fluctuate significantly over the investment period | | | | | | | |
| RP 10 | I am confident in my knowledge about this investment product | | | | | | | |
| RP 11 | This investment product is a common choice among investors | | | | | | | |

**CULTURAL ADHERENCE QUESTIONNAIRE**

| **Hierarchy** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| CH 1 I will participate in civil action groups. The ones in power do only allow what they like | | | | | | | |
| CH 2 Would you agree to accept the limits in your life if we want or not | | | | | | | |
| CH 3 It is important to preserve our customs and cultural heritage. | | | | | | | |
| CH 4 Order is a probably unpopular but an important virtue. | | | | | | | |
| CH 5 I prefer clear instruction from my superiors about what to do. | | | | | | | |
| CH 6 An intact family is the basis of a well functioning society. | | | | | | | |
| **Egalitarianism:** | | | | | | | |
| CE 1 Important questions for our society should not be decided by experts but by the people. | | | | | | | |
| CE 2 In a family adults and children should have the same influence in decisions. | | | | | | | |
| CE 3 It is important to me that in the case of important decisions at my place of work everybody is asked. | | | | | | | |
| CE 4 Firms and institutions should be organized in a way that everybody can influence important decisions. | | | | | | | |
| **Individualism:** | | | | | | | |
| CI 1 I will join clubs of any kind. | | | | | | | |
| CI 2 The freedom of the individual should not be limited for reasons for preventing crime. | | | | | | | |
| CI 3 My ideal job would be an independent business. | | | | | | | |
| CI 4. When I have problems I try to solve them on my own. | | | | | | | |
| **Fatalism:** | | | | | | | |
| C F 1 A person is better off if he or she doesn't trust anyone | | | | | | | |
| CF 2 We have to accept the limits in our life if we want or not. | | | | | | | |
| CF 3 There is no use in doing things for other people you only get it in the neck in the long run. | | | | | | | |

**RISK TOLERANCE QUESTIONNAIRE**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| R T 1. I am willing to experience volatility to generate higher returns | | | | | | | |
| R T 2. I am willingness to risk shorter-term losses for the prospect of higher longer-term returns | | | | | | | |
| R T 3. I am willing to take risks, such as starting a business or gambling, unlike other people who prefer a secure job with fixed pay to an uncertain venture | | | | | | | |
| R T 4. Would you agree if your investments were to decline in value by 20% in one year | | | | | | | |
| R T 5. If I believe an investment will carry profit, I am willing to borrow money to make this investment | | | | | | | |
| R T 6. I believe I need to take more financial risks if I want to improve my financial position | | | | | | | |
| R T 7. I am willing to run the risk of losing money if there is also a chance that I will make money | | | | | | | |
| R T 8. As compared to others, I am willing to accept investment losses | | | | | | | |

**INVESTMENT DECISION MAKING MEASUREMENT (PRODUCT)**

*Below are statements about your beliefs and attitudes about the risk attributes of investment products*: ***Shares, Bonds, Commercial paper, Debenture, Treasury Bills, Managed funds, and Bank term deposits***.

***Please indicate to what extent you agree with each of the following statements in relation to the investments products listed above.***

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| IDP 1. I make all my investment decisions on my own | | | | | | | |
| IDP 2. I believe that my skills and knowledge of the market help me to outperform the market | | | | | | | |
| IDP 3. I am usually able to anticipate the movements in market return | | | | | | | |
| IDP 4. When I make Investment, I tend to rely on my intuition | | | | | | | |
| IDP 5. When making investment I follow expert advice | | | | | | | |
| IDP 6. My investment decision is based on family orientation | | | | | | | |
| IDP 7. I investment in products which are patronized by many people | | | | | | | |
| IDP 8. My investment decision is based on advertising in the media | | | | | | | |
| IDP 9. My investment decision is based on the advice from my role models | | | | | | | |
| IDP 10. I believe that information from colleagues has high reliability | | | | | | | |

**INVESTMENT DECISION MAKING MEASUREMENT**

**(INSTITUTION)**

*Below are statements about your beliefs and attitudes about the risk attributes of financial institutions that offer investments products*: ***Commercial Banks, Savings and Loans, Mutual funds, Microfinance, investment banks, insurance companies, credit unions.***

***Please indicate to what extent you agree with each of the following statements in relation to the investments products listed above.***

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| IDI 1. I invest in institutions that are highly regulated | | | | | | | |
| IDI 2. I invest in an institution that has been in existence for a long time | | | | | | | |
| IDI 3. I invest in institutions with highly qualified managers | | | | | | | |
| IDI 4. I invest in institutions that offer a quick return | | | | | | | |
| IDI 5. I invest in product that are licensed | | | | | | | |

## FINANCIAL LITERACY QUESTIONNAIRE

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| FL 1. I am comfortable with current income | | | | | | | |
| FL 2. My current finances are sufficient for my upkeep/ Sufficiency of current finances for upkeep | | | | | | | |
| FL 3. I am able to absorb financial shocks | | | | | | | |
| FL 4. I do experience financial problems | | | | | | | |
| FL 5. I am comfortable with my current income | | | | | | | |
| **FINANCIAL BEHAVIOUR:** | | | | | | | |
| FB 1. I planned my expenditure | | | | | | | |
| FB 2. I analyze my financial situation before a major purchase | | | | | | | |
| FB 3. I pay my bills on time | | | | | | | |
| FB 4. I Keep close watch on my personal financial affairs | | | | | | | |
| FB 5. I crosscheck bank interest | | | | | | | |
| FB 6. I seek financial advice when making insurance policy | | | | | | | |
| **FINANCIAL KNOWLEDGE:** | | | | | | | |
| FK 1. High inflation means that the cost of living is increasing rapidly | | | | | | | |
| FK 2. If someone offers you the chance to make a lot of money there is a chance that you will lose a lot of money as well. | | | | | | | |
| FK 3. It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares/ it is less likely that you will lose all of your money if you save it in more than one place | | | | | | | |
| FK 4. Imagine that you get a gift of GHC1000, and you put it in the drawer at home for 12 | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| months. After one year could you buy the same item you could have bought a year ago? | | | | | | | |
| FK 5. Imagine that five brothers are given a gift of $1000. If the brothers have to share the money equally, each person will receive GHC200 | | | | | | | |
| **FINANCIAL ATTITUDE:** | | | | | | | |
| F A 1. It is important for a family to develop aregular pattern of saving and stick to it | | | | | | | |
| F A 2. Families should have written financial goals that help them determine priorities in spending | | | | | | | |
| F A 3. Planning for spending money is essential to successfully managing one's life | | | | | | | |
| F A 4. Keeping records of financial matters is too time-consuming to worry about. | | | | | | | |
| F A 5. Having a savings plan is really necessary in today's world to meet one's financial needs. | | | | | | | |

## APPENDIX B

## ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 0558093143 / 0508878309
E-MAIL: irb@ucc.edu.gh
OUR REF: UCC/IRB/A/2016/1025
YOUR REF:
OMB NO: 0990-0279
IORG #: IORG0009096

9TH JULY, 2021

Mr. Kwadwo Ankomah
School of Business
University of Cape Coast

Dear Mr. Ankomah,

**ETHICAL CLEARANCE – ID (UCCIRB/CHLS/2021/15)**

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your research titled **Personal Financial Behaviour, Culture and Investment Decision Making.** This approval is valid from 9th July, 2021 to 8th July, 2022. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Samuel Asiedu Owusu, PhD
**UCCIRB Administrator**

REGISTRAR OF
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST