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ORIGINAL ARTICLE

Money on the mind: emotional and non-cognitive predictors and outcomes of financial behaviour of young adults

Godfred Matthew Yaw Owusu[1] · Gabriel Korankye[2] · Octavia Ama Serwaa Otchere[1] · Maryam Kriese[3]

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Abstract

Studies have shown the important role financial behaviour plays in the lives of individuals. However, few papers have looked at the determinants of financial behaviour and even fewer have examined the role of non-cognitive factors in explaining financial behaviour. We examine the effect of non-cognitive factors including financial anxiety, financial attitude, financial self-efficacy, and self-control on financial behaviour of young adults. Further, we explore the impact of financial behaviour on an individual's level of happiness in life. Using cross-sectional data from a survey of business students from a university in Ghana, the partial least square structural equation modelling technique was employed to analyse the data. We find that individuals with higher levels of self-control, financial self-efficacy and financial attitude are more likely to exhibit good financial behaviour, and improved financial behaviour leads to higher levels of happiness among individuals.

Keywords Financial behaviour · Financial attitude · Self-control · Happiness · Self-efficacy · Financial anxiety

✉ Godfred Matthew Yaw Owusu
gmowusu@gmail.com; gmyowusu@ug.edu.gh

Gabriel Korankye
gkorankye2015@gmail.com; gabriel.korankye@upsamail.edu.gh

Octavia Ama Serwaa Otchere
octaviaotchere5@gmail.com

Maryam Kriese
m.kriese2018@gmail.com

[1] Department of Accounting, University of Ghana Business School, Legon-Accra, Ghana

[2] Department of Accounting, University of Professional Studies, Accra, Legon-Accra, Ghana

[3] Department of Banking and Finance, University of Professional Studies, Legon-Accra, Ghana

Introduction

One basic fact in life is that day in day out individuals are required to make decisions that have financial implications. The unfortunate reality, however, is that people make bad financial decisions including buying impulsively and compulsively (Strömbäck et al. 2017), not spending within their means (Sotiropoulos and d'Astous 2013), and having poor savings and investment culture, among others, which have important implications on quality of life. The financial decision of an individual, whether good or bad, is usually a reflection of their financial behaviour. Defined as the entirety of planning, use and control of funds covering savings, credit and cash usage (Xiao et al. 2009), financial behaviour has been acknowledged to be one of the most important concepts in human life with overarching implications (Gutter and Copur 2011; Fernandes et al. 2014; Oquaye et al. 2022). Extant studies have shown that good financial behaviours such as a proper saving habit, making the right investment choices, spending on things needed and making the right purchasing decisions, among others, improves life satisfaction (Xiao et al. 2009; Strömbäck et al. 2017), reduces retirement distress and promotes good health (Ahmad et al. 2014).

On the other hand, individuals who do not practice responsible financial behaviour usually experience retirement distress, end up with huge debts, and in extreme cases develop mental health conditions (Strömbäck et al. 2017; Rutledge and Sanzenbacher 2019). Owing to the important role that financial behaviour plays in the life of individuals, emerging studies have been concerned with examining the dominant factors that account for the differences in financial behaviour of individuals in an attempt to promote responsible financial behaviour and reduce the bad implications of same. However, most studies have predominantly focussed on the role of cognitive factors such as financial education, financial literacy, financial knowledge and numeracy skills as the predictors of financial behaviour (Lusardi and Mitchell 2008; Prihartono and Asandimitra 2018; Parise and Peijnenburg 2019). Notwithstanding the fact that these cognitive factors explain the thinking processes and mental procedures involved in judging and proffering solutions to problems (Bandura 1989), they do not completely explain differences in financial behaviour (Farrell et al. 2016). Moreover, the evidence available in many countries indicates that programmes aimed at improving the cognitive capabilities of individuals usually result in improved financial inclusion and not responsible financial behaviour (Berry et al. 2018; Venkataraman and Venkatesan 2018).

The need to focus on non-cognitive factors, which refers to the personal preferences, personality, behaviour thoughts or feelings of an individual in explaining financial behaviour, has, therefore, been highlighted by some recent studies (Tang et al. 2015; Strömbäck et al. 2017). In particular, Younas et al. (2019) argue that examining the effect of non-cognitive factors, which focus more on psychological factors, is relevant since the psyche of an individual remains key in all forms of decision-making. Indeed, Fernandes (2014) argues that the impact of cognitive factors on financial behaviour gravely reduces if psychological factors are

controlled for. The current study provides some perspective on the role of non-cognitive factors in explaining financial behaviour. While the work of Strömbäck et al. (2017) sheds some light on the influence of self-control (a non-cognitive factor) on financial behaviour, the current study examines a number of other non-cognitive factors: financial anxiety, financial attitude, financial self-efficacy, and self-control on financial behaviour. In addition, we explore an outcome of responsible financial behaviour by examining its effect on one's level of happiness.

Contextually, our study departs from extant studies in an important way. Unlike most existing studies, we focus on the financial behaviour of a rather youthful population from a developing country context. The focus on the youth is relevant given the myriad of challenges that confront the younger generation in today's world. Compared to the older generation at the same stage of life, it has been argued that younger people in recent times are confronted with serious financial problems ranging from higher levels of debt, rise in tuition fees, sharp decline in homeownership, and the inability to pay off bills promptly, among others (Houle and Berger 2015; Bleemer et al. 2021). The implications of these challenges on their development cannot be underestimated. While the focus on the youth is relevant given that most studies have concentrated on the financial behaviour of adults, Ghana provides some interesting perspectives on the financial behaviour discourse in a unique fashion.

First, the liberalisation of the Ghanaian financial sector has generated intense competition, especially in the banking sector occasioned by the influx of several foreign banks into the country within the last decade. The competition in the banking sector, coupled with massive technological advancement and the introduction of several innovative products, has made it relatively easier to access and move funds. Second, the emergence of several online shops, social media marketing platforms and e-commerce platforms have afforded many Ghanaians, especially the youth, with a wide range of alternative choices and ease of buying. While the conservative adult population may not be affected so much by these developments, the inclination to e-commerce and other technology driven products by the savvy youth makes them more prone to bad financial behaviours and decisions in this digitised financial era (Younas et al. 2019).

Given that behavioural enhancement programmes generally take a longer term to yield the desired outcomes (Berry et al. 2018), targeting the youth is an important way of shaping their financial decision-making and behaviour to help them cope with the challenges that confront them (Bucciol and Veronesi 2014; Berry et al. 2018). Thus, this current study answers the following questions: (1) what are the emotional and non-cognitive predictors of financial behaviour of young adults? and (2) does financial behaviour influence the level of happiness of young adults? This study contributes to literature by identifying various emotional and non-cognitive determinants of financial behaviour of young adults. In addition, the study provides insight into the relationship between financial behaviour and happiness from the perspective of young adults in an emerging economy.

The subsequent sections of the paper are organised as follows. "Literature review" covers a review of relevant literature and discusses the framework of the study. "Methods" discusses the methods and instrument, while the results and

discussion are presented in the "Results and discussion". "Conclusion" concludes the study with implications and directions for future research.

Literature review

Theoretical review

Empirical studies on financial behaviour tend to rely predominantly on the Behavioural Life Cycle (BLC) hypothesis as the underlying theory in explaining the determinants of financial behaviour. Propounded by Thaler and Shefrin (1981), the BLC hypothesis seeks to provide a behavioural dimension to the Traditional Life-cycle theory that assumes people spend permanent income (average income) that depletes their total wealth over the length of their life cycle. From the tenets of the BLC hypothesis, individuals are believed to treat components of their wealth as non-fungible and exhibit behavioural biases during savings. Consequently, individuals, in general, apportion their income into three mental accounts, namely current income, current assets and future income, and are less likely to spend from current assets and expected future income than the current income (Thaler and Shefrin 1981). Thus, individuals employ self-control, mental accounting and framing (how increments in wealth are framed) in their savings behaviour. However, a major drawback of the BLC is that it focuses only on the saving component of financial behaviour (Stromback et al. 2017). Further, studies that have relied on the BLC hypothesis focussed largely on the cognitive determinants of financial behaviour, and the conclusions from these studies suggest that the cognitive factors are not enough to explain financial behaviour of individuals (Stromback et al. 2017; Younas et al. 2019).

Due to the inherent limitations of the BLC, the current study employs the Social Cognitive Theory (SCT) to examine the determinants of financial behaviour. The SCT posits that the behaviour of an individual is a result of a system of triadic reciprocal causation. Thus, an individual's behaviour is influenced by environmental and personal factors. From the perspective of the SCT, the social environment in which an individual operates has an implication on the behaviour of the individual. The environmental factors are generally divided into two: social support (facilitators) and barriers (impediments). Social support refers to how and to what extent the environment influences one's engagement in specific behaviours. Barriers, on the other hand, refer to the impediments to engaging in certain behaviours (Ramirez et al. 2012). The second dimension of the SCT, 'personal factors', basically describes the knowledge, literacy, and numeracy skills (cognitive), as well as beliefs, feelings and emotions (non-cognitive) involved in judging and proffering solutions to problems. As surmised by Bandura (1989), the behaviour of an individual is shaped not only by their skills set, knowledge and other known cognitive factors but also by their beliefs, feelings, self-perceptions, and the emotional reactions of the individual.

From the triadic reciprocal proposition, however, behaviour is believed to influence both environmental factors and personal factors (Bandura 1989). Thus, the SCT also suggests the existence of a reverse relationship between behaviour and the two factors (environment and personal) that predict behaviour. By implication, while the behaviour

of an individual is predicted to be influenced by personal and environment factors, the latter can also be influenced by behaviour of individuals. Employing the SCT, this study examines financial behaviour focussing on some non-cognitive determinants of financial behaviour.

The concept of financial behaviour

Financial behaviour has become a key issue of discussion over the past decade (Strömbäck et al. 2017). These discussions have been heightened by the incidence of cases of bad investment choices as well as poor management of funds among individuals in recent times. According to Mokhtar and Rahim (2016), financial behaviour is defined simply as how people manage their finances. The management of finances encompasses the planning, allocation and controlling of financial resources to achieve one's financial goals.

Financial behaviour, at all stages in life, has some important implications on the quality of life of individuals. Good financial behaviour may lead to life satisfaction (Xiao et al. 2009; Strömbäck et al. 2017), stress free retirement, improved net worth (Parrotta and Johnson 1998) and be associated with improved health (Ahmad et al. 2014). On the other hand, improper financial behaviour may result in bankruptcy, loan dependence and stress (Ahmad et al. 2014), financial trouble (Aw et al. 2018) and other negative consequences.

Determinants of financial behaviour

The determinants of financial behaviour can be categorised under three broad headings, namely the economic, cognitive and non-cognitive factors. Some prior literature have revealed that income levels and price levels and other economic factors influence the financial behaviour of individuals (Ahmad et al. 2014; Venkataraman and Venkatesan 2018). Other studies have likewise associated cognitive factors with financial behaviour of individuals. Factors such as financial literacy (Fernandes et al. 2014; Xiao et al. 2014; Rai et al. 2019; Oquaye et al. 2022), financial knowledge (Prihartono and Asandimitra 2018; Rai et al. 2019) and financial education (Fernandes et al. 2014) are examples of cognitive factors that have been found to be good predictors of financial behaviour. These studies suggest that individuals who are financially literate, have more knowledge on financial issues and/or have gone through some level of financial education, whether formal or informal, are more likely to exhibit sound financial behaviour. However, it is believed that even though so much attention has been paid to these cognitive factors, they do not completely explain financial behaviour of individuals (Strömbäck et al. 2017). Very few studies to date have examined the nexus between the non-cognitive factors and financial behaviour of individuals.

Non-cognitive determinants of financial behaviour

While some researchers argue that there is no clear-cut definition for non-cognitive factors, others believe that it is best explained by identifying what it negates. Hence,

non-cognitive factors are referred to as those feelings, skills, traits, behaviours, mindsets and attitudes that do not relate to logic or a thought process (or cognition) (Wang et al. 2018). This study relies on the Stromback's definition, which suggests that non-cognitive factors are self-reported measures of personal preferences personality, behaviour thoughts or feelings (Strömbäck et al. 2017). This is suggestive that non-cognitive factors cover attitudes, conscientiousness, deliberativeness, self-control and a wide range of social-emotional skills, personality and soft skills. For the purpose of this study, attention is focussed on four non-cognitive factors that have been identified in literature as relevant in studying behaviour. These are self-control (Thaler and Shefrin 1981; Gathergood 2012), self-efficacy (Farrell et al. 2016; Montford and Goldsmith 2016), financial anxiety (Shapiro and Burchell 2012) and financial attitude (Parrotta and Johnson 1998).

Self-control

Self-control refers to an individual's ability to break bad habits, resist temptations and overcome first impulses (Baumeister et al. 2003; Strömbäck et al. 2017). It can also be defined as the ability to allow one's future self to overcome the current self. From the point of view of Thaler and Shefrin (1981), every individual is a two-faced being; that is, a "farsighted planner" and a "myopic doer". While the planner is concerned with lifetime gains, the doer is focussed on short term, fleeting benefits (Younas et al. 2019). There is a conflict when there is a significant difference between the preferences of the planner and the doer, such that they cannot be converged (Thaler and Shefrin 1981; Gathergood 2012). The conflict of self can be likened to the theory of agency (Thaler and Shefrin 1981). However, the difference is, while the agency theory is that of profit maximisation, the conflict of self is related to rational behaviour (Thaler and Shefrin 1981).

In controlling oneself, one resists actions that may feel good now but can have long term or permanent costs or damaging consequences. Consequently, the individual is able to alter his or her responses to conform to set standards, values, morals and social expectations (Baumeister et al. 2007). It is, therefore, argued that individuals who exhibit greater levels of self-control are mostly successful, have good physical health, and attain higher socio-economic status (Moffitt et al. 2011; Strömbäck et al. 2017). Further, Tangney et al. (2018) posit that people with a high level of self-control are more likely to get better grades, show better psychological adjustment, exhibit better interpersonal relationships, provide optimal emotional responses and have higher self-esteem. They are also less likely to take alcohol and abuse drug (Tangney et al. 2018).

In the context of behavioural finance, self-control may refer to the ability to overcome bad purchasing, credit management and poor savings attitude. It is believed that with self-control, individuals are able to refrain from making wrong and regrettable financial decisions and focus on good financial behaviour that will be beneficial in future. Studies on financial behaviour and self-control have focussed on specific decisions as credit use, retirement planning and savings behaviour (Strömbäck et al. 2017). However, the concept is broader, and includes cash management and budgeting, among others. Thus, this study considers the effect of self-control on the

broad concept of financial behaviour. The study hypothesises that self-control has a significant positive relationship with financial behaviour.

Financial self-efficacy

According to Bandura (1989), self-efficacy is an individual's sense of self-agency, borne out of a belief that they can accomplish a given task and, more broadly, cope with life's challenges (Farrell et al. 2016). It describes the feeling that one will be able to deal with situations effectively (Lim et al. 2014). Self-efficacy increases the confidence of individuals to execute tasks; hence, leading to a series of successful performances across various areas (Montford and Goldsmith 2016). Financial self-efficacy, therefore, implies one's belief in one's ability to effectively overcome financial situations or hardships (Oquaye et al. 2022).

It is believed that financial self-efficacy gives an enhanced level of assuredness in one's financial management capabilities that they have higher chances of seeing financial difficulties as challenges to quash or control. Studies have followed this argument in diverse areas. Farrell et al. (2016) investigated the impact of self-efficacy on personal finance of women and found that women who exhibit high levels of self-efficacy are more likely to have good financial behaviour. Similar studies on investment risk-taking (Montford and Goldsmith 2016) and financial help-seeking behaviour of college students (Lim et al. 2014) have revealed similar results; that is, higher levels of financial self-efficacy results in greater financial risk-taking and a higher possibility of seeking help from professionals. Accordingly, this study hypothesises that individuals with a greater sense of financial self-efficacy will most likely exhibit good financial behaviour.

Financial anxiety

People become anxious, feel uneasy and be disturbed when they do not know much about something, and that can affect their next line of action. Financial anxiety is described as a psychosocial syndrome whereby an individual feels uneasy and unhealthy about engaging with, and administering personal finances in an effective way (Shapiro and Burchell 2012); that is, one is afraid to plan and manage their finances themselves. Shapiro and Burchell (2012) termed this "financial phobia".

According to neurobiologists, people make suboptimal decisions in the face of no emotions. However, psychological research has revealed that high emotional traits are associated with poor decisions, especially financial decisions (Shapiro and Burchell 2012). Consequently, this study hypothesises that financial anxiety has a significant negative relationship with financial behaviour.

Financial attitude

Another key determinant of financial behaviour is financial attitude (Parrotta and Johnson 1998). While some extant literature suggests that financial attitude is a determinant of financial behaviour, others argue that financial behaviour determines financial attitude. For instance, Ajzen (1991) posits that financial attitude is the

product of the behaviour of a decision maker. On the other hand, Yong et al. (2018), in their study on financial attitude and financial behaviour of young adults, found that good financial attitude leads to better financial behaviour.

Attitude in psychology literature refers to a psychological tendency that is expressed by evaluating an entity with some level of favour or disfavour (Parrotta and Johnson 1998). However, financial attitude is one's personal inclination towards financial issues. Financial attitude covers one's ability or inability to plan ahead and maintain a savings account that matters (Rai et al. 2019). It is also defined as an individual's state of mind, opinion and judgement about finances (Ameliawati and Setiyani 2018). Results from prior studies indicate that individuals with a higher inclination towards financial matters exhibit good financial behaviour (Ameliawati and Setiyani 2018; Yong et al. 2018). We, therefore, propose in this study that a good financial attitude will influence good financial behaviour.

Happiness

Happiness is broadly explained as anything that is good (Veenhoven 2012). Numerous positive outcomes and states of well-being have been attributed to happiness. For instance, researchers argue that happy people are healthy, creative, appreciative of life, and successful (Kamthan et al. 2018; Khosrojerdi et al. 2018; Walsh et al. 2018). In addition, happy people are active at work, accept corrections, give off their best and contribute their quota to national development through hard work and commitment (Cummins 2012). This is the result of the zeal with which happy people work, which translates into the achievement of objectives and goals (Oswald 1997; Cummins 2012; Kamthan et al. 2018).

Prior studies have revealed that one's happiness may be a product of personal, institutional and economy-wide factors. Genetic setup, physical health, mental health, income, gender and age are some of the personal traits that have been mentioned in literature as the determinants of happiness (Cheung et al. 2014; Dai and Chu 2018; Kamthan et al. 2018; Khosrojerdi et al. 2018). Furthermore, studies at the institutional level have revealed that the education system and environmental and social factors may influence the happiness of an individual (Dolan et al. 2008). At the national economy level, researchers suggest that gross domestic product (GDP), income levels, employment, and inflation may similarly affect the happiness of citizens (Oswald 1997; Frey and Stutzer 2000, 2002; Cummins 2012).

It is worth noting that income levels have been a common element that cut across the three broad factors (Cummins 2012; Kushlev et al. 2015; Jebb et al. 2018; Kollamparambil 2020). However, there is a wide range of arguments against using income level as a determinant of happiness (Dolan et al. 2008). Researchers suggest that increases in income do not necessarily lead to improved happiness (Frey and Stutzer 2002; Kushlev et al. 2015; Jebb et al. 2018). Further, increases in income level tend to have a weak or non-significant relationship with happiness (Kushlev et al. 2015). There have been similar inconsistencies with employment as a predictor of happiness as well (Dolan et al. 2008). This has been attributed to disutility, income satiation and other economic theories (Frey and Stutzer 2002; Kushlev et al. 2015; Jebb et al. 2018).

Furthermore, while many people are generally of the assertion that income or wealth has a linear relationship with happiness, studies have proven otherwise. Evidence suggests that while income or wealth increases, happiness reaches an optimal level and stays there or even falls. The question we ask in this study is, does the way we employ and manage income or wealth (financial behaviour) have any implication on happiness?

According to Gutter and Copur (2011), domain-specific behaviours affect domain-specific well-being. In line with that, a number of studies researching the implication of financial behaviour on financial well-being or financial satisfaction have indicated a positive relationship or association. For instance, studies by Worthy et al. (2010), Xiao et al. (2009) and Hira et al. (1992) reveal that the financial behaviour of individuals have an effect on their financial well-being or satisfaction. However, these studies only pay attention to the financial well-being or satisfaction ignoring the overall happiness of individuals. Happiness covers the total good feeling of an individual whereas financial well-being or satisfaction only focuses on the financial aspects of happiness. Hence, this study furthers the relationship between financial behaviour and happiness of college students.

Methods

Research design and questionnaire development

A quantitative survey method was employed for this study, using questionnaires as the main instrument for data collection. The research instrument employed consisted of two sections. The first part sought to elicit from the respondents, information regarding their perception on their financial behaviour and the non-cognitive factors that influence one's financial behaviour. The section further sought the views of the respondents on their level of happiness. The questions used to measure these variables were adopted from previous studies (Dew and Xiao 2011; Yap et al. 2016; Strömbäck et al. 2017; Prihartono and Asandimitra 2018). Responses of the sampled students were determined on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The second section of the questionnaire sought to capture some relevant demographic characteristics of the respondents. This included the gender, age, level of study, area of study, monthly stipend/income and if the respondents have any form of investment.

Respondents and analysis technique

The sample respondents for this study were selected from a cross-section of business students (both undergraduate and graduate) in a large public university in Ghana. The university from which the sample was selected is the premier and largest university in Ghana, and it attracts students from all parts of the country and the world at large. Thus, the institution provides a representative sample of young adults from a developing country perspective. A total of 400 questionnaires were administered to

the respondents. To elicit honest responses from the sampled students, the researcher explained the purpose of the study to them, and assured them of the confidentiality of their answers. Responses were received from 375 students; however, 358 were included in the final analysis after screening. The study adopted the Partial Least Square Structural Equation Modelling (PLS-SEM) technique in analysing the data. This technique was chosen due to its high predictive accuracy and ability to handle more complex models, and its suitability for exploratory studies (Hair et al. 2014).

Demographic information of respondents

Table 1 gives a summary of the profile of the respondents. In terms of gender diversity, the sample was slightly dominated by the males accounting for about 51.12% of the total respondents. The majority of the respondents were below 26 years; that is 72.63% of the total sample, and most of the respondents are undergraduate students (73.46%). These statistics reflect the youthful nature of the sample, and the predominantly low-income levels of the respondents (64.8% earning below GHC 500). This is because most students in Ghana depend on their parents for a livelihood. In terms of the course major, the respondents were predominantly accounting students (46.93%). This reflects the general enrolment statistics of most business schools with most students pursuing accounting.

Table 1 Respondent's demographic information

Measure	Items	Frequency	Percentage (%)
Gender	Male	183	51.12
	Female	175	48.88
Age	Below 26 years	260	72.63
	26–35 years	59	16.48
	Above 35 years	39	10.89
Level	2nd year	105	29.33
	3rd year	60	16.76
	4th year	98	27.37
	Postgraduate	95	26.54
Course	Accounting	168	46.93
	Finance and insurance	34	9.50
	Health service and public administration	40	11.17
	Human resource management	10	2.79
	Marketing	11	3.07
	Masters' degree	95	26.54
Income	Below GH¢ 300	116	32.40
	GH¢ 301–GH¢ 500	116	32.40
	GH¢ 501–GH¢ 1000	20	5.59
	GH¢ 1001–GH¢ 5000	82	22.91
	Above GH¢ 5000	24	6.70

Descriptive statistics on constructs

Table 2 presents an analysis of the views of the respondents on the constructs for the study, indicating the mean scores and standard deviations of the responses. The overall mean score for the construct 'self-control' was 3.43 (SD = 0.95), suggesting that the respondents largely agree with the statements evaluating self-control. This means that the respondents are more likely to resist temptations and let go of bad habits, think through all alternatives before acting, and focus on the long term rather than short term. This is so because almost all the measurement items for self-control (except SC3) were in the negative or reversed. It must, however, be noted that before undertaking the structural model analysis, the items measuring self-control were reverse coded. The reason behind this was to ensure a consistent, meaningful and logical inference and interpretation of the results.

Further, the results show that the students perceive themselves as having high financial self-efficacy (mean = 4.52; SD = 1.15) and a good financial attitude (mean = 4.81; SD = 0.97). On the other hand, analysis of the respondents' view on the construct 'financial anxiety' (mean = 3.77; SD = 1.23) suggest the respondents consider themselves to have a "financial phobia"; that is, the respondents are generally afraid to confront financial matters. In addition, the overall mean for the construct "financial behaviour" was 4.26, which implies that the respondents agree with the statements measuring financial behaviour. The high mean score is an indication that the students generally exhibit acceptable levels of savings, credit management and fund usage behaviours. The respondents perceived themselves to be happy, and it can be observed that the construct "happiness" recorded the highest mean of 4.98. This re-iterates the fact that happiness is one of the most sought-after desires of life.

Results and discussion

Measurement model assessment

Construct reliability

The composite reliability (CR) measure was employed in assessing the reliability of the instrument employed to measure the constructs. While the Cronbach alpha measure, which assumes all indicators should be weighted equally, has been employed in most studies, the CR measure, which considers the individual outer loadings of the different indicator items, has been found to be more superior in measuring reliability (Hair et al. 2011). According to Nunnally and Bernstein (1994), a CR value of 0.70 and above is satisfactory. From Table 3, the constructs demonstrate adequate CR exceeding the 0.70 recommended threshold.

Construct validity

The average variance extracted (AVE) was used to evaluate the degree to which the various indicators of a construct correlate with one another (convergent validity).

Table 2 Descriptive statistics of constructs

Item		Mean	SD
Self-control		3.43	0.95
SC1	I have a hard time breaking bad habits	3.51	1.83
SC2	I get distracted easily	3.43	1.77
SC3	I am good at resisting temptations	4.39	1.83
SC4	I do things that feel good in the moment but regret later on	3.63	1.91
SC5	I often act without thinking through all the alternatives	2.85	1.87
SC6	I only focus on the short term	2.66	1.83
SC7	The future will take care of itself	2.64	1.89
SC8	I live more for the day of today than for the day of tomorrow	3.07	1.95
SC9	My convenience play an important role in the decision I make	4.70	1.77
Financial anxiety		3.77	1.23
FA1	I get unsure about the language jargons of financial experts	3.55	1.69
FA2	I am anxious about financial and money affairs	4.10	1.99
FA3	I tend to postpone financial decisions	3.15	1.77
FA4	After making decisions, I am anxious, whether I was right or wrong	4.27	1.91
Financial attitude		4.81	0.97
FT1	Maintaining adequate financial records	4.34	1.97
FT2	Spending less than income regularly	4.63	1.93
FT3	Maintaining adequate insurance coverage	3.74	1.87
FT4	Marinating diversified investment portfolio regularly	3.98	1.69
FT5	Avoid borrowing to balance personal budget	5.27	1.93
FT6	Using multiple sources for financial information	4.91	1.80
FT7	Confidence in financial decision-making	5.05	1.70
FT8	Increasing one's financial knowledge	5.19	1.71

Table 2 (continued)

Item		Mean	SD
FT9	Spending rather than investing	4.91	1.91
FT10	Planning and implementing personal savings	5.17	1.76
FT11	Setting goals for the future	5.74	1.74
Self-efficacy		4.52	1.15
SE1	It is hard to stick to my spending when unexpected expenses arise	3.39	1.90
SE2	It is challenging to make progress towards my financial goals	3.95	1.86
SE3	When unexpected expenses occur, I usually have to use credit	4.86	2.01
SE4	When faced with a financial challenge, I have a hard time figuring out a solution	4.72	1.76
SE5	I lack confidence in my ability to manage my finances	5.34	1.81
SE6	I worry about running out of money in retirement	4.83	2.11
Financial behaviour		4.26	1.07
FB1	I do comparison shopping when purchasing all my products or services	5.05	1.98
FB2	I pay all my bills on time	5.11	1.79
FB3	I keep a written or electronic record of all my monthly expenses	3.44	1.93
FB4	I stay within my budget or spending plan	4.38	1.95
FB5	I pay off credit card balance in full each month	4.05	1.89
FB6	I maxed out the limit on or more credit cards	4.69	1.66
FB7	I make only minimum payments on loan	3.16	1.85
FB8	I have begun or maintain an emergency savings fund	4.22	2.04
FB9	I save some amount from every pay cheque	4.53	1.98
FB10	I save for long-term goals (such as car, education, and business start-up)	4.85	2.06
FB11	I contribute money to a retirement account	3.70	2.22
FB12	I have purchased bonds, stocks or shares, T-bills, or mutual funds	3.93	2.32

Table 2 (continued)

Item		Mean	SD
Happiness		4.98	1.18
HA1	In general I consider myself very happy	5.34	1.80
HA2	Compared to my peers, I consider myself more happy	5.19	1.66
HA3	Some people are generally happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent do you agree that this statement apply to you?	5.08	1.75
HA4	Some people are generally not happy. Although they are not depressed, they never seem as happy as they must be. To what do you agree this characterisation describe you?	4.31	2.13

Table 3 Validity and reliability

Construct	CR	AVE
Financial behaviour	0.807	0.501
Financial anxiety	0.746	0.613
Financial attitude	0.859	0.505
Happiness	0.894	0.739
Self-control	0.804	0.511
Self-efficacy	0.753	0.509

An established rule of thumb suggests a minimum AVE of 0.50 is acceptable (Hair et al. 2014). As shown in Table 3, all the constructs have AVEs above 0.50. This suggests that the latent variables explain more than 50% of their respective indicator variances; hence, convergent validity was assured. The discriminant validity test was conducted using the heterotrait–monotrait (HTMT) ratio. This test is to ensure that the indicators used in this study uniquely measure their respective constructs. According to Henseler et al. (2015), the values for the HTMT ratio of the construct should be less than 0.90 for discriminant validity to be assured. Results of the HTMT as shown in Table 4 suggest discriminant validity is assured as the HTMT values for all the constructs were below the maximum threshold of 0.90.

Structural model analysis

Prior to discussing our structural model results, we checked for the appropriateness of our model by conducting several diagnostic tests. To check whether our estimated results are not affected significantly by multicollinearity issues, we tested for the presence of multicollinearity using the variance inflation factor (VIF). Results, as shown in Table 5, suggest there is no multicollinearity problem as the VIF scores are within the recommended threshold of less than 3 (Hair et al. 2017). An assessment of how the variance in the endogenous construct is explained by the exogenous

Table 4 Heterotrait–monotrait (HTMT) ratio

	Financial behaviour	Financial anxiety	Financial attitude	Happiness	Self-control	Self-efficacy
Financial behaviour						
Financial anxiety	0.287					
Financial attitude	0.685	0.320				
Happiness	0.550	0.210	0.443			
Self-control	0.436	0.594	0.400	0.220		
Self-efficacy	0.376	0.464	0.299	0.161	0.595	

Table 5 Value inflation factor (VIF)

Construct	VIF
Financial anxiety	1.177
Financial attitude	1.134
Self-control	1.342
Self-efficacy	1.223

constructs was done using the coefficient of determination (R^2). The R^2 values of 0.318 and 0.182 as shown in Table 6 suggest that while financial behaviour explains approximately 18% of the variation in happiness, 32% of the variance in financial behaviour is explained by the model. The predictive relevance of the model was assessed using cross-validated redundancy (Q^2) from the blindfolding procedure. The Q^2 values of 0.130 and 0.124 as shown in Table 6 suggest that the predictive power of our model is good (Fig. 1).

Structural path analysis

The structural model results from the bootstrapping procedure are presented in Table 6. The results showed a positive and significant relationship between self-control and financial behaviour. This implies that students who have some level of control over their lives, characterised by their capacity to break bad habits, resist temptations and overcome first impulses, are more prone to save and spend wisely. Thus, adopting responsible financial behaviour may be dependent on the level of self-control an individual has over his/her life. Empirically, this finding is supported by studies (Rha et al. 2006; Stromback et al. 2017) that found self-control to be positively associated with financial behaviour.

Consistent with our prediction, we find a negative relationship between financial anxiety and financial behaviour. This finding suggests that individuals who show signs of an uneasy feeling about financial matters are less likely to exhibit traits of good financial behaviour such as savings, investing, and responsible spending. This is because the fear about financial matters usually discourages individuals from

Table 6 Path coefficient

Hypothesis path	Path coefficient	t-statistics	*p* value
Self-control → financial behaviour	0.140	2.379	0.018
Self-efficacy → financial behaviour	0.099	1.827	0.068*
Financial anxiety → financial behaviour	− 0.014	0.261	0.794
Financial attitude → financial behaviour	0.461	8.816	0.000
Financial behaviour → happiness	0.427	8.674	0.000
R^2 (0.318), (0.182)			
Q^2 (0.130), (0.124)			

*Significant at 10%

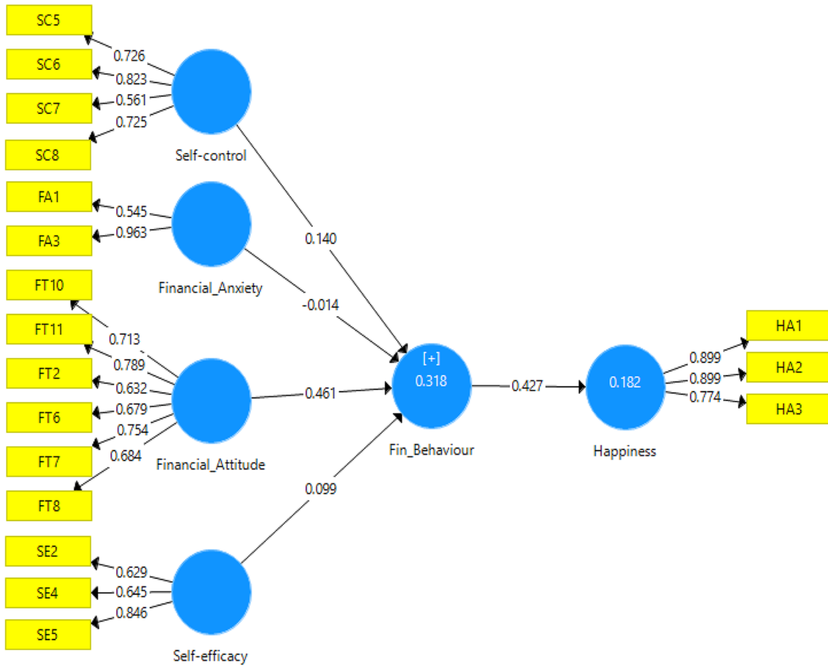

Fig. 1 Structural model

developing an interest and having the desire to even learn about finances and its related concepts. The lack of interest in the end leaves such individuals uninformed, which ultimately affect the quality of the financial decision they take. This result does not deviate from the findings of prior studies on the impact of financial anxiety on credit management (Barboza et al. 2017) and academic performance (Balogun et al. 2017).

The results indicate that financial attitude has a positive influence on financial management behaviour. Financial attitude involves making an effort to increase one's financial knowledge, planning finances, implementing personal savings, and spending within one's means. Such attitudes propel an individual to cultivate and practice good financial management behaviour. Thus, students who exhibit a positive attitude towards their finances are more likely to engage in good financial behaviours such as budgeting, savings, and ensuring control over cash usage. This finding is consistent with the evidence provided some empirical studies (Ameliawati and Setiyani 2018; Prihartono and Asandimitra 2018; Yong et al. 2018), which suggest that an individual's financial attitude has important implications on financial behaviour.

The relationship between financial self-efficacy and financial behaviour was positive and statistically significant: an indication that students who believe in their ability to deal with financial matters are more likely to exhibit good financial behaviour. Thus, proper financial behaviour can also be associated with the extent of knowledge, confidence and control an individual possesses to manage his/her finances.

The argument is that self-efficacy is believed to be the foundation of human motivation and action (Ramirez et al. 2012), and defines one's ability to overcome challenges. Previous studies by Herawati et al. (2018) and Oquaye et al. (2022) have provided evidence consistent with the findings in this study.

Lastly, we find a very strong association between financial behaviour and happiness (measured by extent to which an individual feels satisfied with his/her life and feels). The positive relationship between the two constructs is a demonstration that students who plan, manage and control their financial resources well are more likely to be happy in life. This is because such individuals usually budget their spending and save more for future spending; hence, are able to reduce their debt burden (Strömbäck et al. 2017). Individuals with this kind of lifestyle usually have their peace of mind and live without the stress of thinking about how to cover their debt or even their day-to-day expenses.

Conclusion

The analysis in this paper contributes substantially to the important role that non-cognitive factors play in understanding what shapes individuals' financial behaviour. While previous research on determinants of financial behaviour have focussed extensively on the cognitive factors, this paper provides some perspective on the non-cognitive factors by examining the impact of financial anxiety, financial attitude, financial self-efficacy and self-control on financial behaviour. Further, our analysis explores the effect of responsible financial behaviour on one's level of happiness.

Consistent with our prediction, our analysis demonstrates that non-cognitive factors have important implications on financial behaviour. Our results further indicate that financial behaviour is a good predictor of an individual's level of happiness in life. The findings of this study have two main implications. First, the results suggest that developing the non-cognitive traits such as self-control, self-efficacy and financial attitude of young adults is an important way of promoting responsible financial behaviour among the youth. Thus, while programmes targeted at improving the cognitive capabilities of people (e.g. financial education and financial literacy campaigns) are relevant, it is equally important that policy makers interested in promoting responsible financial behaviour among the younger population consider programmes targeted at the development of the non-cognitive traits as well. Second, given the implications of financial behaviour on happiness, improving the non-cognitive capabilities of the youth remains one of the important remote mechanisms by which policy makers can help improve the living standards of future generations.

Despite the contributions of this study, the findings must be interpreted considering some limitations. First, notwithstanding the predictive relevance of our model, the study focussed on only four non-cognitive factors as determinants of financial behaviour. However, Stromack et al. (2017) argue that each study is only a step closer to understanding the underlying factors of the heterogeneous financial behaviour and happiness of decision makers. Thus, future studies may consider the role of other factors such as social influence and financial stress as a useful extension to our model. Second, the study employed data from a single tertiary institution for its

analysis. The respondents used in the study can, therefore, not be considered as the overall representation of all university students. Future studies could consider more diverse data from different institutions. Finally, the study did not examine the bidirectional relationship between the non-cognitive determinants and financial behaviour, and between financial behaviour and happiness. An evaluation of the bidirectional relationship between these constructs will be a useful addition to literature.

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Declarations

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