

## Acquired Financial Knowledge and Attitudes of South African University Students And Their Financial Decisions

Oloyede Obagbuwa<sup>1</sup>, Joseph Olorunfemi Akande<sup>2</sup>, Dev Tewari<sup>3</sup>

**Abstract:** This paper considers the financial management practices of university students by examining the relationships among financial knowledge, financial management attitudes and spending habits (financial decisions) of university students in South Africa. The evaluation of the relationships employed the established theories of planned behaviour and family resource management in conjunction with structural equation modelling analysis. The study collected survey data from 479 students that had taken finance-related courses at a major university in South Africa. The results suggest that students' financial knowledge positively influenced their financial management attitudes and that higher level of students' financial management attitudes led to good spending habits. However, students' financial knowledge had no direct impact on students' spending habits. Instead, students' financial management attitudes fully mediated the relationship between students' financial knowledge and their spending habits, suggesting financial knowledge does not on its own lead to good spending habits (financial decisions). The findings of the paper have implications for students, their funders, the government, and university administrators in terms of students' financial literacy education and the allocation of increasingly scarce economic resources devoted to educational welfare.

**Keywords:** Financial knowledge; financial management attitude; spending habits; university students; South Africa

**JEL Classification:** A22; D14; I22; I28

### 1. Introduction

The rising cost of university education has significantly reduced students' disposable income, which manifested in their reaction to increases in tuition fees in countries around the world and especially in South Africa. Indeed, the mounting cost of education and government funding support has an inverse relationship in South Africa (Calitz & Fourie, 2016). Malaza (2016) reported that tuition fees for state universities increased by 27% between 2010 and 2012 while the general cost of education rose by 9.2% in 2015 from 8.1% in 2009; during this time government's allocation to education declined from

<sup>1</sup> PhD Student, School of Accounting, Economics and Finance, University of KwaZulu-Natal, Durban, South Africa, E-mail: obagbuwa\_loyede@yahoo.co.uk.

<sup>2</sup> Department of Accounting, Economics and Finance, Namibia University of Science and Technology, Windhoek, Namibia, Secondary Affiliation and School of Accounting, Economics and Finance, University of KwaZulu-Natal, Durban, South Africa, Corresponding author: jakande@nust.na.

<sup>3</sup> Faculty of Commerce, Administration and Law, University of Zululand, KwaDlangezwa, South Africa TewariD@unizulu.ac.za

49% to 40%<sup>1</sup>. The consequences for students' debt profiles, stood at R711.9 million (USD 49.8 million) in 2016 and increased by 31% from 2000 to 2012 ((Malaza, 2016), due to their inability to service their loans (Staff, 2015). The inadequate funding prolongs students' length of study, and their failure to manage the relatively few funds available to them exacerbates the situation (Lomax, 2016). Thus, given the significant increase in university education costs and students' mismanagement of funds, their disposable income is under ever-growing pressure. Students increasingly find themselves unable to service their loans because, according to Murphy (2005), some spend more than their income. Student spending in 2015 in South Africa averaged R2702 (USD 189.14) a month in contrast to the R2100 (USD 147) of the average South African ((Shange, 2015), an amount that has been rising at almost 8% annually in recent times (Ssalkinder, 2015). This implies little room for investment and savings. Moreover, their academic performance also suffers as many students take on menial jobs to maintain their lifestyle at the expense of their academic work (Lomax, 2016). The economic situation and students' financial management challenges impact even more on those from the most impoverished backgrounds with meagre disposable income for their studies. Hence, there are calls for students to make sound financial decisions and spend wisely to manage their current and future finances responsibly (Falahati & Paim, 2011; van Deventer & de Klerk, 2016).

Thus, this paper investigates the financial management practices of South African students by examining the relationships among the financial knowledge, financial management attitudes and spending habits of university students. The existing literature on South African students' financial management emphasises the issue of financial literacy (for example, (Botha, 2013; Fatoki, 2014; Kotzé & Smit, 2008; Murphy, 2005; Oseifuah & Gyekye, 2014; Shambare & Rugimbana, 2012; Van der Merwe, 2012) but very little on the financial behaviour of students. Furthermore, given the claim that students' lack of financial knowledge makes them reckless in managing their funds (Becchetti et al.; 2013; (Chen & Volpe, 1998; Jariah, Husniyah, Laily, & Britt, 2004; Sabri et al.; 2008). Therefore, the study focused on students in South Africa, who were assumed to have received some financial education to investigate the relationships among financial knowledge, financial attitudes and spending habits.

In summary, we found that financial knowledge of the students positively influenced their financial management attitudes and that higher levels of students' financial management attitudes led to good spending habits. However, we found no statistically significant evidence that students' financial knowledge had a direct impact on students' spending habits. Instead, we found students' financial management attitudes fully mediated the relationship between students' financial knowledge and their spending habits. Therefore, suggesting that financial knowledge does not by itself own translate to good spending habits (financial decisions) instead students develop good spending habits when financial management attitudes became more positive as a result of enhancing financial knowledge.

The paper makes at least three unique contributions to the literature. Firstly, previous studies examined the effects of financial knowledge on financial decision-making. Likewise, the impact of financial attitudes on financial decision-making individually among college/university students; there are no studies that have examined the three constructs together among university students. This study makes a unique contribution by examining the joint dynamics among the three constructs to provide a holistic view of how spending habits among university students are influenced. Secondly, the study focuses on university students who have exposure to finance and accounting concepts in their studies. Hence, are

---

<sup>1</sup> Government's inability to provide requisite funding generated a year-long "#fees must fall" agitation in South Africa in 2016.

considered to be financially educated and as such, examines whether this higher levels of financial knowledge leads to more positive spending habits among this group of students. Thirdly, the study also contributes to the policy debate about the need for massive financial education for university students in South Africa and other countries to ensure sound financial consumption behaviours. The study findings show that financial knowledge does not lead to good financial consumption behaviours without the right financial management attitude among university students. Thus, policymakers should focus on implementing financial literacy programmes that can enhance financial management attitudes in students, such as real-life learning experiences like student-run businesses on campus and internships at local businesses. They should also make policies that emphasise the acquisition of money management skills and attitudes that are focused on real-life financial problem solving, rather than just a lecture-and-test approach to financial education.

## **2. Theoretical Background and Hypotheses Development**

Generally, two factors influence financial management practices, namely financial knowledge and attitudes to finance (Eagly and Chaiken (1993). These factors are predicated on the theories of the family resource management (FRM) (Deacon and Firebaugh (1988); Parrotta and Johnson, 1998) and the theory of planned behaviour (Ajzen, 1991; Ajzen, 2002). These two primary theoretical constructs underpin this study. Parrotta and Johnson (1998) theorised using the FRM framework that financial knowledge and financial attitudes affect financial management practice. Besides, the theory of planned behaviour proposes that individual attitudes towards a specific behaviour shape the intention for the actual behaviour (Ajzen and Fishbein, 1980; Ajzen, 1991; Barbic et al.; 2018). In other words, individual financial attitudes influence financial management behaviour (Barbic et al, 2018; Ajzen & Fishbein, 1980).

Financial knowledge (Huston, 2010; Lusardi et al.; 2010; Jorgensen et al.; 2017) is about gaining a skill that enhances the understanding of operations of financial information and concepts in making favourable financial decisions (Rootman & Antoni, 2015; Shuttleworth, 2011). Meanwhile, Mundy and Musoke (2011) emphasise that consumers should have sound knowledge about financial concepts such as budgeting, financial planning, savings, investment, regulations, as well as the dangers inherent in them. Studies internationally have found that college/university students have limited financial knowledge (Chen & Volpe, 1998; Erner et al.; 2016; Jones, 2005; Robb, 2011). These findings are a reflection of students of South African University (Fatoki, 2014; Oseifuah & Gyekye, 2014). Micomonaco (2003) found evidence that college students have the tendency not to budget nor to evaluate the bills on their credit cards before spending. However, studies have found a positive link between higher financial knowledge and financial decisions among students (Chen & Volpe, 1998; Robb, 2011; Xiao et al.; 2011). Shaari et al. (2013) found that students with financial knowledge invest their money in education, housing and other interest yielding investments instead of spending it all on consumption and entertainment.

On the other hand, some studies have argued that there is no causal link between financial knowledge and right consumer financial decision making as there can be a divergence between what people say they will do and what they do (Willis, 2009; West, 2012). Xiao et al. (2014) further argued that the specific type of financial knowledge received influences the differences in financial behaviour of college students. They found that subjective financial knowledge (which refers to an individual's beliefs about one's own understanding of financial knowledge) had a more substantial effect compared

with objective financial knowledge (which refers to accurate, stored knowledge regarding individual credit content) on both composite and individual measures of reducing risky borrowing and spending behaviours. Thus, based on previous research, we test the following hypotheses:

**H1:** *Financial knowledge (SKF) positively influences financial management attitudes (FMA).*

**H2:** *Financial knowledge (SKF) positively influences good spending habits (SFA).*

Financial management attitude explains the behaviour exercised by an individual in approaching financial matters (Deacon & Firebaugh, 1988; Dew & Xiao, 2011; Van Hörne & Wachowicz, 2003). It is the psychological tendency expressed when evaluating recommended financial management practices with some degree of agreement or disagreement (Parrotta & Johnson, 1998). Hence, financial management attitude becomes a notable variable when estimating financial management practices with some level of agreement or disagreement (Anthony, Ezat, Al Junid, & Moshiri, 2011; Parrotta & Johnson, 1998). Studies have shown that university students' attitude towards their finances reflects in their borrowing and spending habits. Students see the accumulation of debt as a necessary exchange for higher education (Bell, Grayson & Stowe, 2001), and they have developed a nonchalant attitude toward indebtedness (Beale & Cude, 2017). Students' attitudes about debt have a connection with their behaviour because their readiness to borrow to fund their education tends to increase borrowing money for other purposes (Bell et al.; 2001) and their tolerance for debt in general (Beale and Cude, 2017). This attitude towards debt by students and young adults further exacerbated because of a consumer culture that is used to debt and easy accessibility to credit (Dowling, Tim, & Hoiles, 2009; Parrotta & Johnson, 1998).

There is also evidence that the financial management attitudes of students impact their spending habits (Jorgensen & Savla, 2010; Gutter & Copur, 2011). Joo et al. (2003) noted that a positive attitude towards the use of credit cards for spending, leads to an increased number of credit cards and its greater use, while a negative or fearful attitude toward credit cards leads to fewer credit cards and less spending with these cards. Cummins, Haskell, and Jenkins (2009) stated that students that exercised restraint in their finances have a low default rate on their loan debt. And Simpson, Smith, Taylor, and Chadd (2012) surveyed 144 first-year students and concluded that these students found it challenging to manage their money, hence made unrewarding financial decisions. Moreover, there is research evidence, which shows that increased financial knowledge influences financial management attitudes, which ultimately result in healthy financial behaviours (Chaudhuri and Holbrook, 2001; Lattin and Bucklin, 1989; Bandura, 1986; Shim et al.; 2010; Mangleburg et al.; 2004; Borden et al.; 2008). Thus, given the foregoing we test the following hypotheses:

**H3:** *Financial management attitudes (FMA) positively influences good spending habits (SFA).*

**H4:** *Financial management attitudes (FMA) mediates the relationship between financial knowledge (SKF) and good spending habits (SFA).*

### 3. Method

#### 3.1. Survey and Participants

We used a paper questionnaire survey to collect data among students who were in year one to year three, majoring in business, i.e. studying accounting, economics and finance degrees and those not majoring in business, i.e. studying law and social science degrees at a major university in South

Africa<sup>1</sup>. These questionnaires were administered in the year 2018 to these students face-to-face for completion during lectures after the necessary permission had been obtained from the Research Ethics office of the University and the relevant faculty authorities. Face-to-face approach for conducting the survey was preferred to the online method to ensure respondents (students) commitment to completing the survey. As of 2018, the total population of the students at this University (the study site) was 10,320, to which we administered 500 questionnaires using the convenience sampling technique. The sample size of the population was estimated using the sample estimation equation<sup>2</sup> developed by Krejcie, and Morgan's (1970) used widely in the literature. The estimation procedure suggested that the appropriate sample size for a population of 10,320 is at least 370 respondents. Thus, we distributed 500 questionnaires to meet this requirement. Of this, 479 students (95.8%) responded and completed the questionnaires, nine students (1.8%) didn't satisfactorily complete the questionnaires, while 12 students did not return their questionnaires. In general, the response rate of 95.8% was considered statistically reliable for generalisability giving the estimated sample size is following (Krejcie & Morgan, 1970).

We posed similar questions as Potrich, Vieira, and Kirch (2015) on which the respondents were scored about financial knowledge, attitude and spending habit constructs, for our survey. The survey consisted of two components. The first involved the social-educational profile of the respondents, capturing details of gender, age, family background, and racial group, among others (Table 1). The second part dwelt on the three elements of students' financial management practices. The scales of financial attitude and spending habits were measured using responses to 10 questions and nine questions<sup>3</sup>, respectively, with a 4-point Likert scale ("strongly disagree", "disagree", "agree" and "strongly agree"). The financial knowledge scale contained nine multiple-choice questions testing the scale of financial knowledge ranging from students with extremely poor financial knowledge to very good financial knowledge. Overall, students giving at least six correct answers to these questions were considered highly knowledgeable about finance and those having five correct answers and below ranged from moderate to low financial knowledge.

---

<sup>1</sup> The justification for surveying this group of students, even though some majored in business degrees and some did not, was that they were all exposed to the study of finance related courses during their studies. Thus, there is an expectation that they should have higher financial knowledge than would be the case for students from other disciplines such as engineering for example.

<sup>2</sup> The equation is given as  $S = \frac{X^2 NP(1-P)}{d^2(N-1)+X^2P(1-P)}$  where S is the required sample size;  $X^2$  is the table value of chi-square for 1 degree of freedom at the desired confidence level. N is the population size; P is the population proportion (assumed to be 0.50 since this would provide the maximum sample size) and D is the degree of accuracy expressed as a proportion (0.05).

<sup>3</sup> The degree of agreement to responses such as 'I like to buy things because it makes me feel good' and 'money is made to be spent' are some examples of the responses used to measure financial attitude. Whilst, the degree of agreement to responses such as 'I spend more money than I get', and 'I normally spend all my monthly allowance before month end' are examples of responses used to measure spending habits among the survey participants.

**Table 1. Respondents' Profile**

Characteristics	Category	Frequency	%
Gender	Male	158	33
	Female	321	67
Age	18-21	246	51.4
	>21	233	48.6
Family background	Single parent	186	39
	Married parent	293	61
Course of study Business major	Accounting	100	20.9
	Finance	100	20.9
	Economics	45	9.4
Non-business majors	Law	121	25.3
	Social Science	113	23.6
Years in University	Year 1	100	20.9
	Year 2	161	33.6
	Year 3	218	45.5
Racial group	White	14	2.9
	African	322	67.2
	Indian	134	28
	Coloured	9	1.9
Financial aid	Parent	193	40.3
	Loan	155	32.4
	Bursary	63	13.2
	Scholarship	11	2.3
	Parent + other	49	10.2
Monthly allowance	Other sources	8	1.7
	≤ R1000	280	58.5
	R1001 - R2000	142	29.6
	R2001 - R3000	32	6.7
	R3001 - R4000	15	3.1
	R4001 - R5000	4	0.8
>R5000	6	1.3	

*Source: Survey responses*

From Table 1, of the 479 students who took part in the study, 158 (33%) were male students, and 321 (67%) were female students. The sample analysis showed that 20.9% of the students studied Accounting, 9.4% studied Economics, 20.9% studied finance, 25.3% studied Law, and 23.6% studied Social science. Regarding how many years students were already in the University, 20.9% of the students were in the first year, 33.6% were in the second year, and 45.5% were in the third year of undergraduate studies. In terms of the race of the students surveyed, 2.9% of the students identified as White, 67.2% said they were African, 28% identified as Indian and 1.95 identified as coloured.

About 40.3% of the students said their parents primarily supported their finances. Whereas 32.4% said, loans supported them financially, while bursaries and scholarships financially supported 13.2% and 2.3% of the student, respectively. A large percentage of the students (58.5%) had a monthly allowance of less than R1000 (USD 70), while 29.6% of the students received a monthly allowance of between R1001-R2000 (USD 70.07 – USD 140). Only 1.3% of the students received a monthly allowance of over R5000 (USD 350).



### 3.2. Data Analysis Plan

We used the confirmatory factor analysis (CFA) and structural equation modelling (SEM) to test the hypotheses of this study. Thus, based on the factor analysis (see Table 2), of the 28 items (questions asked in the survey) evaluated only 13 were extracted and grouped into four measures for financial management attitudes (FMA), six for financial knowledge (SKF) and three for spending habits (SFA). These items were the only ones that met the reliability threshold for the latent factors - thus ensured that the reflective latent constructs were correctly identified, grouped and that the observed data appropriately fits into the latent factors. This is particularly important as some of the observed data did not correlate with the sets of the reflective latent variables. The reliability of these classifications was measured by Cronbach's Alpha ( $\alpha$ ) at 0.773 for SKF, 0.823 for FMA and 0.704 for SFA. This follows generally accepted norms of Cronbach's Alpha ( $\alpha$ ) greater or equal to 0.70 (Shaari, Hasan, Mohamed, & Sabri, 2013; Viswesvaran, Ones, & Schmidt, 1996) as a test of composite reliability.

**Table 2. Factor Analysis Statistics**

Factor	Factor loading	Mean	SD	N
<b>Financial management attitude</b> (Cronbach's Alpha = 0.823)				
I like to buy things because it makes me feel good	0.425	2.47	0.874	479
I find it more satisfying to spend money than to save it for the future	0.656	2.94	0.906	479
Money is made to be spent	0.686	2.57	0.934	479
It's quite hard for me to make a spending plan	0.433	2.54	0.893	479
<b>Financial Knowledge</b> (Cronbach's Alpha = 0.773)				
Scale of financial Knowledge 2	0.351	0.55	0.502	479
Scale of financial Knowledge 3	0.471	0.67	0.469	479
Scale of financial Knowledge 4	0.602	0.66	0.473	479
Scale of financial Knowledge 6	0.363	0.63	0.487	479
Scale of financial Knowledge 7	0.539	0.66	0.478	479
Scale of financial Knowledge 8	0.467	0.75	0.435	479
<b>Spending Habits</b> (Cronbach's Alpha = 0.704)				
I will borrow money to spend in anticipation of my monthly allowance	0.474	3.28	0.904	479
I normally spend all my monthly allowance before month end	0.755	2.61	1.010	479
I spend more than I get	0.765	3.10	0.907	479

*Source: Survey Responses*

This study used the confirmatory factor analysis (CFA) and structural equation modelling (SEM) implemented in Analysis of Moment Structure (AMOS) software (Sekaran & Bougie, 2016) to analyse the relationship among the three student financial management practice constructs: financial knowledge (SKF), financial management attitudes (FMA) and spending habits (SFA).

### 4. Results

To begin the analysis, we first use a set of global model fitness indices (see Table 3) to assess the fitness of the data collected for the CFA and SEM aggregate models (Byrne, 2016; Fan, Thompson, & Wang, 1999). To gauge the overall fitness of the model we employed the normalised chi-squared test (CMIN/DF) which is the value of the chi-squared ( $\chi^2$ ) value divided by the number of degrees of freedom ( $df$ ). The result was 1.639, which falls within the required expectation of  $\chi^2/df \leq 5$ , for overall model fit consideration (Byrne, 2016).

**Table 3. Model Fit Measurement Indices for CFA and Path Analysis in SEM**

Model Fit Indices	Aggregate model
	Estimate
CMIN/DF	1.639
DF	62
RMSEA	0.037
PCLOSE	0.962
SMR	0.022
GFI	0.968
NFI	0.896
IFI	0.957
TLI	0.944
CFI	0.956

Source: Authors Estimation

We followed Hu and Bentler (1999) to select three comparative fit indices: the comparative fit index (CFI), the incremental fit index (IFI) and the Tucker-Lewis index (TLI) to establish the overall fitness of the data to the model tested. The results of the comparative fit indices according to Hu and Bentler (1999) should range between 0 and 1, with values from  $> 0.9$  considered to be a good model fit and those  $\geq 0.95$  indicate perfect model fit. The CFI, IFI, and TLI of our model are 0.956, 0.957 and 0.944 respectively suggesting that our model is a good fit.<sup>1</sup> The root mean square error of approximation (RMSEA) is sometimes considered the most important model fit index (Byrne, 2016; Diamantopoulos & Siguaw, 2013) given its sensitivity to most of the model estimating parameters (Hooper et al.; 2008). It indicates how well a model fits the population covariance and correlation matrix. The values of  $RMSEA \leq 0.05$  in a range 0 and 0.05 is good, with values up to 0.08, suggesting an approximate model fitness according to Katou and Budhwar (2010)<sup>2</sup>. The indicators from our model fit measurement indices suggest a perfect fit as, according to Fields and Atiku (2015), good model fitness was achieved with at least four good indices. In the case of our study, we found most of the indices satisfied the fitness criteria.

#### 4.1. Confirmatory Factor Analysis (CFA)

Figure 1 showed the result of the CFA. The oval shapes in figure 1 represent the latent variables: financial management attitudes (FMA), financial knowledge (SKF) and spending habits (SFA), whereas the rectangular shapes stand for the observed variables. The GFI result in Table 3 indicates that the data collected explained over 95% of the variance and covariances of the model proposed; hence, the model is statistical validity. We found empirical evidence from the CFA result to show that the factor loadings (FL) overall ranged from 0.36 to 0.81 (FMA:  $0.45 \leq FL \leq 0.69$ ; SKF:  $0.36 \leq FL \leq 0.59$ ; SFA:  $0.51 \leq FL \leq 0.81$ ). The factor loadings indicate the proportion of each of the latent variables explained by the items used, corresponding to their contributions in determining the latent constructs. The probability values of the factor loadings are significant at  $< 0.001$  (see Table 4)

<sup>1</sup>A further model fit criterion we adopted is the goodness of fit index (GFI), which, according to Hooper, Coughlan, and Mullen (2008), provides an alternative means of measuring the extent of the variance resulting from the population covariance. The GFI value is expected to range between 0 and 1, with 0.95 and above a very good indicator of fit and an acceptable fit starting from 0.8. The GFI for our model fit was 0.968.

<sup>2</sup>Other tests of model fitness conducted include PCLOSE and the standardised root means square residual (SMR). PCLOSE is the p-value for testing the null hypothesis that the population RMSEA is not  $> 0.05$ , which is expected to be  $> 0.50$ , hence, our PCLOSE value of 0.962 gives further confirmation of model fitness. SMR provides an absolute measure of fit. It is the standardised difference between the predicted correlation and the observed correlation. As an absolute measure, a value of 0 equals a perfect model fit, and Hu and Bentler (1999) suggest a value  $< 0.08$  as generally considered a good model fit.



indicative that each of FMA, SKF and SFA is explained by each of their items and are outcome factors of students’ financial management cognisance.

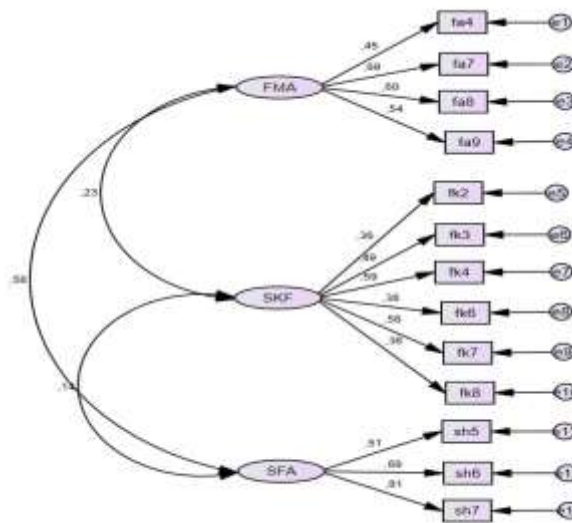


Figure 1. Confirmatory Factor Analysis estimates result

Table 4. Estimates of the Parameters in the Path Analysis Model- Direct Effects Only

			Standardised estimate	P-Value
FMA	<—	SKF	0.230	***
SFA	<—	SKF	0.011	0.905
SFA	<—	FMA	0.575	***
fa4	<—	FMA	0.450	***
fa7	<—	FMA	0.690	***
fa8	<—	FMA	0.603	***
fa9	<—	FMA	0.543	***
fk2	<—	SKF	0.357	***
fk3	<—	SKF	0.492	***
fk4	<—	SKF	0.590	***
fk6	<—	SKF	0.381	***
fk7	<—	SKF	0.561	***
fk8	<—	SKF	0.383	***
sh5	<—	SFA	0.508	***
sh6	<—	SFA	0.691	***
sh7	<—	SFA	0.806	***

Standardized estimates of the coefficients in the structural model. P-value: \*<0.01, \*\*<0.05, \*\*\*<0.10.

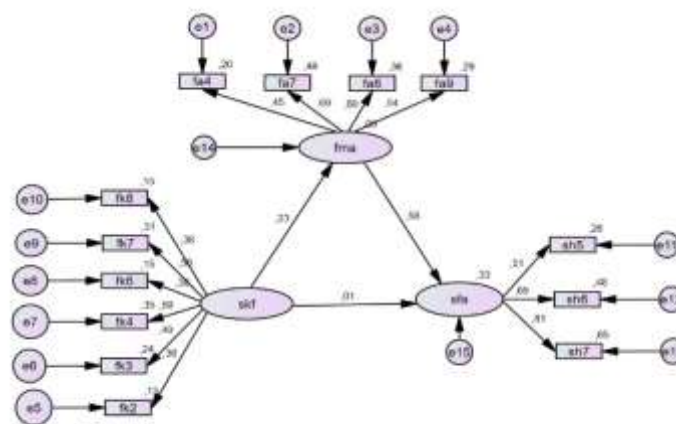
#### 4.2. Structural Model and Mediation Analysis

To test the relationships among SKF, FMA (the exogenous variables) and SFA (the endogenous variable) for the whole sample (aggregate model) we conducted path and mediation analysis using SEM (see Table 5 and Figure 2). We examined the direct, indirect and total effects of the relationships as well as the direction of connection among the three variables. From the results, we found SKF to be positive and significantly related to FMA with a coefficient of 0.230 and statistically significant at the 1% level of (see Table 5 and Figure 3), indicating that as students’ financial knowledge increases, their financial management attitudes increase. This result is consistent with the a priori theory that financial knowledge helps to shape financial attitudes and supports our first hypothesis (H1).

**Table 5. Direct, Indirect and Total Effects (Standardised Estimates) of the Path Analysis for SKF, FMA and SFA – Aggregate Model**

Total effects		
	Estimates	P-value
FMA ← SKF	0.230	***
SFA ← FMA	0.575	***
SFA ← SKF	0.144	***
Direct effects		
FMA ← SKF	0.230	***
SFA ← FMA	0.575	***
SFA ← SKF	0.011	0.905
Indirect effect		
SFA ← FMA ← SKF	0.132	***
Standardized estimates of the coefficients in the structural model. P-value: *<0.01, **<0.05, ***<0.10.		

Source: Authors' estimation



**Figure 2. Mediation Analysis Estimates Result**

Further to this, we find FMA to be positive with a coefficient of 0.575 and significantly related to SFA and statistically significant at the 1% level too, implying that higher levels of financial management attitude influence good spending habits of students. This result is consistent with our third hypothesis (H3) and again meets our theoretical expectation that financial management attitude (FMA) has a positive link to good spending habits (SFA). On the other hand, we find no statistically significant direct path running from SKF to SFA, as the direct relationship between SKF and SFA is not statistically significant from the results (see Table 5 and Figure 2). This result does not support our second hypothesis (H2), which suggest that financial knowledge positively influences good spending habits. While the relationship is positive as expected, it is not statistically significant, indicating that financial knowledge does not in themselves translate to good spending habits among the students surveyed.

Thus, from the mediation (path) analysis (Figure 2 and Table 5) SKF has a direct relationship with FMA (H1), and FMA has a direct relationship with SFA (H3). However, the study could not establish a direct connection between SKF and SFA (H2) as the path is not statistically significant. The mediation analysis further shows that SKF has an indirect relationship with SFA through FMA, because FMA is related to both SKF and SFA, hence performing a mediation role between the two variables. The coefficient of this indirect relationship is 0.132, and it is statistically significant at the 1% level (see Table 5). Therefore, the addition of the coefficients of the direct and indirect effects between SKF and SFA provides a statistically significant total effect of 0.144 (0.132 + 0.011) the

relationship between SKF and SFA. This result supports our fourth hypothesis (*H4*) that sound financial management attitudes (FMA) mediate the relationship between students' financial knowledge (SKF) and good spending habits (SFA). Mediation analysis suffices where a direct relationship between two variables could not be established, and it can be demonstrated that the influence of one of these variables on the other variable is transmitted through another (a third) variable referred to as the mediator (Iacobucci, 2010). Where this is the case, the third variable could either fully mediate the relationship or play the role of partial mediation where the direct path of the actual two variables became statistically significant (Iacobucci et al.; 2007). Thus, from our results, as shown in Figure 2 and Table 5, FMA fully mediates the relationship between SKF and SFA among the students surveyed. In other words, the positive effects of students' financial knowledge on good spending habits in students transmit through sound financial management attitudes<sup>1</sup>.

### 4.3. Discussion

This study analysed the relationships among financial knowledge, financial management attitudes and the spending habits of South African students. Structural equation model was used, based on a survey of 479 students at a major university in South Africa. While previous studies have examined the effects of these constructs individually among university students, our research makes a unique contribution by examining the joint dynamics among the three constructs to provide a holistic view of how spending habits among students is influenced. The examination of the relationships among these constructs rested mainly on the theories of the family resource management and the theory of planned behaviour.

We found from the mediation analysis that financial knowledge, financial management attitudes, and spending habits are interrelated among the students surveyed. Further, we found in support of the first hypothesis (*H1*) that financial knowledge influenced financial management attitudes of students. This is consistent with Barbic et al. (2018) who found this relationship within a broader-based sample of a general population survey. Likewise, we found support for the third hypothesis (*H3*) that high level of financial management attitudes, in turn, influences good spending habits, agreeing with Cummins et al. (2009), Jorgensen and Savla (2010), Gutter and Copur (2011), Atkinson and Messy (2012) and Jorgensen, Foster, Jensen, and Vieira (2017). They established that financial attitude has a positive link to financial behaviour. Moreover, this result concurs with the theory of planned behaviour, which attests that attitude precedes behaviour. We, however, found no significant support for the second hypothesis (*H2*) as there was no statistically significant relationship between financial knowledge and good spending habits. This is consistent with the divergence hypothesis about differences between what people know and what they do as suggested by Borden et al. (2008), Willis (2009), West (2012) and Barbic et al. (2018). This finding is also consistent with Tang, Baker, and Peter (2015) and Cordero & Pedraja (2019), who found evidence that financial knowledge alone is insufficient to guarantee responsible financial behaviour. While some previous studies ((Hilgert, Hogarth, & Beverly, 2003; Mandell & Klein, 2009; Sohn, Joo, Grable, Lee, & Kim, 2012) suggested that financial knowledge influences financial behaviour, there is however limited empirical support for this assertion (Alsemgeest, 2015).

---

<sup>1</sup> In untabulated further analysis we conducted a multigroup analysis on the various sub-groups of students, considering the students in our sample studied accounting, economics and finance degrees (i.e. majoring in business), and law and social science degrees (i.e. not majoring in business). The results were consistent with the results of the aggregate model in section 4.2 where the focus was on the whole sample for all the four hypotheses tested.

Through the mediation analysis, we found support for the fourth hypothesis (*H4*) that high levels of financial management attitudes fully mediate the relationship between financial knowledge and good spending habits of students. This is consistent with the family resource management theory by Parrotta and Johnson (1998). This result is also compatible with Barbic et al. (2018) who found that financial attitudes partially mediate the relationship between financial literacy and responsible financial consumption behaviour in a survey of a general population. Furthermore, this finding suggests that the most dominant construct that positively influences good spending habits among students is their financial management attitude rather than their financial knowledge.

This study has two critical policy implications. Firstly, governments and policymakers must as a matter of priority in designing and implementing financial literacy programmes consider programmes that can enhance financial management attitudes in students. Such programs could include real-life learning experiences like student-run businesses on campus, internships at local businesses and actual jobs in finance, rather than just a lecture-and-test approach to financial education. Secondly and complementarily, the emphasis should move towards the acquisition of money management skills and attitudes that are focused on real-life financial problem-solving. Such skill will give students the requisite critical thinking about financial decisions instead of just financial education that focuses on a body of information to remember for assessments.

## **5. Conclusion**

This study extends previous research that model the relationships among financial knowledge, financial management attitudes and financial decision-making. The paper has policy implications for governments, university administrators, and university students as policies on responsible personal financial behaviour are planned and implemented for students. The empirical findings suggested that financial management attitude is the most important factor influencing good spending habits, as financial knowledge without financial management attitude does not result in good spending habits, which ultimately is required as the foundation for a secure financial future, particularly for students. Thus, considering some studies emphasise the need to financially educate university students with South African students, not an exception, we make the case that after surveying a group of students who were already exposed to accounting and finance courses, that just having knowledge is not sufficient for these students to make good spending decisions. Instead, it is the level of financial management attitude that ultimately influences good spending habits. We, therefore, agree with Roberts, Struwig, Gordon, Viljoen, and Wentzel (2012)'s call for a broad and aggressive financial education programme to upgrade students' financial knowledge in South Africa. However, we recommend that such a programme needs to encompass financial management attitude acquisition skills as our analysis demonstrated that financial knowledge on its own does not induce good spending habits among university students unless this is mediated with the right financial attitude.

This study has three main limitations. Firstly, the study data were collected from one of the large state-owned universities in South Africa. Thus, there is a possibility that different results might be found in other universities that have different characteristics like private universities or universities with different demographics. Future research could examine this possibility. Secondly, the focus of the study was on the influences of financial knowledge and financial attitudes on spending behaviour, and we acknowledge, that there can be other influences on spending behaviour beyond these two factors particularly social norms. Thus, future research could consider specifically the influence of social

norms on the spending habits of university students. Thirdly, the study relies on the students' self-reporting, which may have resulted in the students providing answers that may not reflect their actual reality. However, this is a limitation that applies to all studies using self-reported data. As part of a future proposal for future research, it would also be of interest to test the similarities and differences between the responses from students majoring in accounting, economics, and finance and those from Law and social science degrees. The analysis between the students from the first, second, and third-year would also be interesting to obtain.

## 6. Acknowledgement

We would like to acknowledge Dr Dimu Ehalaye of the Department of Accounting, University of Massey, New Zealand, for his technical and editing supports in preparing the manuscript of the paper.

## 7. References

- Ajzen, I. (1991). The theory of planned behavior. *Organisational behavior and human decision processes*, 50(2), 179-211.
- Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior 1. *Journal of applied social psychology*, 32(4), pp. 665-683.
- Ajzen, I. & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*.
- Anthony, R.; Ezat, W. S.; Al Junid, S. & Moshiri, H. (2011). Financial management attitude and practice among the medical practitioners in public and private medical service in Malaysia. *International Journal of Business and Management*, 6(8), p. 105.
- Atkinson, A. & Messy, F.-A. (2012). *Measuring financial literacy*.
- Beale, E. M. & Cude, B. J. (2017). College Students' Attitudes toward Debt. *International Journal of Undergraduate Research and Creative Activities*, 9(1), p. 5.
- Bell, S.; Grayson, J. P. & Stowe, S. (2001). Students' Attitudes Toward Debt-A Study of Atkinson Faculty of Liberal and Professional Studies, York University, and Ryerson University. *Journal of Student Financial Aid*, 31(3), 1.
- Botha, M. (2013). *A comparative analysis of the financial literacy of final year diploma students in different fields of study at the University of Johannesburg*. University of Johannesburg,
- Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*: Routledge.
- Calitz, E. & Fourie, J. (2016). The historically high cost of tertiary education in South Africa. *Politikon*, 43(1), pp. 149-154.
- Chen, H. & Volpe, R. P. (1998). An analysis of personal financial literacy among college students. *Financial services review*, 7(2), pp. 107-128.
- Cummins, M. M.; Haskell, J. H. & Jenkins, S. J. (2009). Financial attitudes and spending habits of university freshmen. *Journal of Economics and Economic Education Research*, 10(1), p. 3.
- Deacon, R. E. & Firebaugh, F. M. (1988). *Family resource management: Principles and applications*: Allyn & Bacon.
- Dew, J. & Xiao, J. J. (2011). *The financial management behavior scale: Development and validation*.
- Diamantopoulos, A. & Siguaw, J. A. (2013). *Introducing LISREL: A guide for the uninitiated*: Sage.
- Dowling, N.; Tim, C. & Hoiles, L. (2009). *Financial management practices and money attitudes as determinants of financial problems and dissatisfaction in young male Australian workers*.
- Eagly, A. H. & Chaiken, S. (1993). *The Psychology of Attitudes* Harcourt Brace Jovanovich College Publishers. Fort Worth, TX.

- Falahati, L. & Paim, L. H. (2011). Toward a framework of determinants of financial management and financial problems among university students. *African Journal of Business Management*, 5(22), pp. 9600-9606.
- Fan, X.; Thompson, B. & Wang, L. (1999). Effects of sample size, estimation methods, and model specification on structural equation modeling fit indexes. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), pp. 56-83.
- Fatoki, O. (2014). The Financial literacy of non-business university students in South Africa. *International Journal of Educational Sciences*, 7(2), pp. 261-267.
- Fields, Z. & Atiku, S. O. (2015). Testing and Operationalizing a Model to Measure Creativity at Tertiary Educational Level. *International Journal of Educational Sciences*, 9(3), pp. 283-296.
- Hilgert, M. A.; Hogarth, J. M. & Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior. *Fed. Res. Bull.*; 89, pp. 309.
- Hooper, D.; Coughlan, J. & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Articles*, 2.
- Hu, L. t. & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, 6(1), pp. 1-55.
- Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, 44(2), pp. 296-316.
- Jariah, M.; Husniyah, A.; Laily, P. & Britt, S. (2004). Financial behavior and problems among university students: Need for financial education. *Journal of Personal Finance*, 3(1), pp. 82-96.
- Jorgensen, B. L.; Foster, D.; Jensen, J. F. & Vieira, E. (2017). Financial Attitudes and Responsible Spending Behavior of Emerging Adults: Does Geographic Location Matter? *Journal of Family and Economic Issues*, 38(1), pp. 70-83.
- Katou, A. A. & Budhwar, P. S. (2010). Causal relationship between HRM policies and organisational performance: Evidence from the Greek manufacturing sector. *European management journal*, 28(1), pp. 25-39.
- Kotzé, L. & Smit, A. (2008). Personal financial literacy and personal debt management: the potential relationship with new venture creation. *The Southern African Journal of Entrepreneurship and Small Business Management*, 1(1), pp. 35-50.
- Krejcie, R. V. & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), pp. 607-610.
- Lomax, T. (2016). *Why Fees Must Fall deserves your support (and how you can give it)*. <https://www.mediaforjustice.net/why-fees-must-fall-deserves-your-support-and-how-you-can-give-it/>.
- Malaza, D. (2016). *University of KwaZulu-Natal Submission to the Presidential Commission on Fees into Higher Education and Training*.
- Mandell, L. & Klein, L. (2009). *The impact of financial literacy education on subsequent financial behavior*.
- Micomonaco, J. P. (2003). *Borrowing Against the Future: Practices, attitudes and knowledge of financial management among college students*. Virginia Tech,
- Mundy, S. & Musoke, C. (2011). Towards an Effective Framework for Financial Literacy and Financial Consumer Protection in Uganda. *Bank of Uganda Paper*, 5, pp. 1-76.
- Murphy, A. J. (2005). Money, Money, Money: An Exploratory Study on the Financial Literacy of Black College Students. *College Student Journal*, 39(3).
- Oseifuah, E. K. & Gyekye, A. B. (2014). Analysis of the Level of Financial Literacy among South African Undergraduate Students. *Journal of Economics and Behavioral Studies*, 6(3), p. 242.
- Parrotta, J. L. & Johnson, P. J. (1998). The impact of financial attitudes and knowledge on financial management and satisfaction of recently married individuals. *Journal of Financial Counseling and Planning*, 9(2), p. 59.
- Potrich, A. C. G.; Vieira, K. M. & Kirch, G. (2015). Determinants of financial literacy: analysis of the influence of socioeconomic and demographic variables. *Revista Contabilidade & Finanças*, 26(69), pp. 362-377.



- Roberts, B.; Struwig, J.; Gordon, S.; Viljoen, J. & Wentzel, M. (2012). Financial Literacy in South Africa: Results of a baseline national survey. *Report Prepared by the Human Sciences Research Council on behalf of the Financial Services Board. Pretoria: Financial Services Board.*
- Rootman, C. & Antoni, X. (2015). Investigating financial literacy to improve financial behaviour among Black consumers. *Journal of Economic and Financial Sciences*, 8(2), pp. 474-494.
- Sabri, M. F.; MacDonald, M.; Masud, J.; Paim, L.; Hira, T. & Othman, M. (2008). Financial behavior and problems among college students in Malaysia: Research and education implication. *Consumer Interests Annual*, 54(1), pp. 166-170.
- Sekaran, U. & Bougie, R. (2016). *Research methods for business: A skill building approach*: John Wiley & Sons.
- Shaari, N. A.; Hasan, N. A.; Mohamed, R. & Sabri, M. (2013). Financial literacy: A study among the university students. *Interdisciplinary journal of contemporary research in business*, 5(2), pp. 279-299.
- Shambare, R. & Rugimbana, R. (2012). Financial literacy among the educated: An exploratory study of selected university students in South Africa. *Thunderbird International Business Review*, 54(4), pp. 581-590.
- Shange, N. (2015). Students Spending on Booze, Bling and Clothes. *News24*. <https://www.news24.com/SouthAfrica/News/Students-spending-on-booze-bling-and-clothes-20150513>.
- Shuttleworth, C. (2011). A financial literacy education framework for non-financial individuals in organisations. *Progressio*, 33(1), pp. 94-115.
- Simpson, L.; Smith, R.; Taylor, L. & Chadd, J. A. (2012). College debt: An exploratory study of risk factors among college freshmen. *Journal of Student Financial Aid*, 16.
- Sohn, S.-H.; Joo, S.-H.; Grable, J. E.; Lee, S. & Kim, M. (2012). Adolescents' financial literacy: The role of financial socialization agents, financial experiences, and money attitudes in shaping financial literacy among South Korean youth. *Journal of Adolescence*, 35(4), pp. 969-980.
- Ssalkinder, L. (2015). *Student Spend Report 2015*. Retrieved from
- Staff, W. (2015). *How much money students owe South Africa's universities*. <https://businesstech.co.za/news/general/101826/how-much-money-students-owe-south-africas-universities/>
- Tang, N.; Baker, A. & Peter, P. C. (2015). Investigating the disconnect between financial knowledge and behavior: The role of parental influence and psychological characteristics in responsible financial behaviors among young adults. *Journal of Consumer Affairs*, 49(2), pp. 376-406.
- Van der Merwe, E. (2012). *Economic literacy as a factor affecting allocative efficiency*. University of the Free State,
- van Deventer, M. & de Klerk, N. (2016). African Generation Y Students' knowledge of Personal Financial Management.
- Van Hörne, J. & Wachowicz, J. (2003). Fundamentals of financial management. In: Prentice Hali Professional Technical Reference.
- Viswesvaran, C.; Ones, D. S. & Schmidt, F. L. (1996). Comparative analysis of the reliability of job performance ratings. *Journal of applied psychology*, 81(5), pp. 557.
- West, J. (2012). Financial literacy education and behaviour unhinged: combating bias and poor product design. *International Journal of Consumer Studies*, 36(5), pp. 523-530.
- Willis, L. E. (2009). Evidence and ideology in assessing the effectiveness of financial literacy education. *San Diego Law Review*, 46, pp. 415.
- Xiao, J. J.; Serido, J. & Shim, S. (2011). Financial education, financial knowledge, and risky credit behavior of college students. *Consumer Knowledge and Financial Decisions*, pp. 113-128. Springer, New York, NY.
- Xiao, J. J.; Ahn, S. Y.; Serido, J. & Shim, S. (2014). Earlier financial literacy and later financial behaviour of college students. *International Journal of Consumer Studies*, 38(6), pp. 593-601.