

-RESEARCH ARTICLE-

A COMPARATIVE STUDY OF FINANCIAL LITERACY AMONG UNDERGRADUATE COMMERCE AND ARTS STUDENTS: A CASE OF A SOUTH AFRICAN UNIVERSITY

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—Abstract—

This study investigated whether there exists a significant difference in financial literacy levels of undergraduate students who are studying in the Faculties of Arts (non-Commerce students) and Commerce in a South Africa university. Students generally tend to have low levels of financial literacy, but Commerce students are reported as having higher levels of financial literacy than non-Commerce students. This suggests that the financial education needs of Commerce and non-Commerce students might differ. A quantitative research design was employed, and a closed-ended questionnaire used in collecting primary data on financial knowledge and financial skills of students. A T-test of independence and Cohen's d was used to determine whether a significant difference existed between the two groups of students. The empirical results revealed that Commerce students had higher levels of financial knowledge than non-Commerce students. The financial skills of the two groups of students, however, showed no significant difference. This result means that there was no significant difference in the financial control and planning of Commerce and non-Commerce students. It is recommended that personal financial management courses should be implemented for both groups of students. These courses should focus on improving the financial knowledge of Arts students and the financial planning skills of both groups of students.

Citation (APA): Antoni, XL, Dlepu A & Notshe N., (2020), A Comparative Study of Financial Literacy among Undergraduate Commerce and Arts Students: A Case of a South African University, *International Journal of Economics and Finance Studies*, 12 (2): 563-580. Doi: 10.34109/ijefs.202012220

Keywords: *Financial literacy, Financial knowledge, Financial skill, Commerce, Non-Commerce, Students.*

JEL Classification: P46

1. INTRODUCTION

High levels of financial literacy are crucial for making sound financial decisions; however, many studies report that students have low levels of financial literacy (Fatoki, 2014). Financial literacy refers to students having sufficient levels of knowledge and skills in personal financial management (Huston, 2010:307). Nanziri and Leibbrandt (2018) report that South African students have the lowest levels of financial literacy. This is supported by many authors (Fatoki, 2014; Louw, Fouché & Oberholzer, 2013:447; Kotzé & Smit, 2008:44). South African students answer more questions correctly on basic financial concepts than advanced financial concepts (Ramavhea *et al.*, 2017:59-60; Louw *et al.*, 2013:447). This suggests that South African students lack knowledge of advanced financial concepts such as investment, banking, and tax, financial planning and compounded interest (Ramavhea *et al.*, 2017:59-60; Louw *et al.*, 2013) and basic financial concepts such as invoices, inflation, bank charges and budgets. It is shown that Commerce students have more knowledge of the basic financial concepts than non-Commerce students (Van Deventer & De Klerk, 2017:245). Consequently, students need both basic and advanced financial concepts to make sound financial decisions (Ramavhea *et al.*, 2017), as low levels of financial literacy lead to students making poor financial decisions (Gumani *et al.*, 2017:61).

Previous studies also indicate that financial literacy levels differ for Commerce and non-Commerce students in South Africa (Van Deventer & De Klerk, 2017:245; Louw *et al.*, 2013:447; De Clercq & Venter, 2009:52). Many of these studies find that Commerce students have higher levels of financial literacy than non-Commerce students (Van Deventer & De Klerk, 2017:245; Louw *et al.*, 2013:447; De Clercq and Venter, 2009:52). However, few of these studies have investigated whether there exists a significant difference in the levels of financial literacy of Commerce and non-Commerce students in the Eastern Cape (EC) province. This is apart from Van Deventer and De Klerk (2017:245), who included 2.6% of the students from the Eastern Cape. Some of these studies investigating the levels of financial literacy of Commerce and non-Commerce students have been conducted in Limpopo and Gauteng (Fatoki, 2014; Botha 2013:91). This is surprising, since the Eastern Cape has the lowest levels of financial literacy in South Africa (Nanziri & Leibbrandt, 2018:17). Therefore, this

study will seek to add to the body of knowledge by investigating whether there exists a significant difference in the financial literacy levels of Commerce and non-Commerce students in the Eastern Cape. The results of the study may be used to develop a personal financial management course that will assist universities to improve the financial literacy levels of Commerce and non-Commerce students.

2. RESEARCH AIM AND OBJECTIVES

2.1. Research aim

To investigate whether the financial literacy levels of undergraduate Commerce and non-Commerce students are significantly different in the Eastern Cape.

2.2 Research objectives

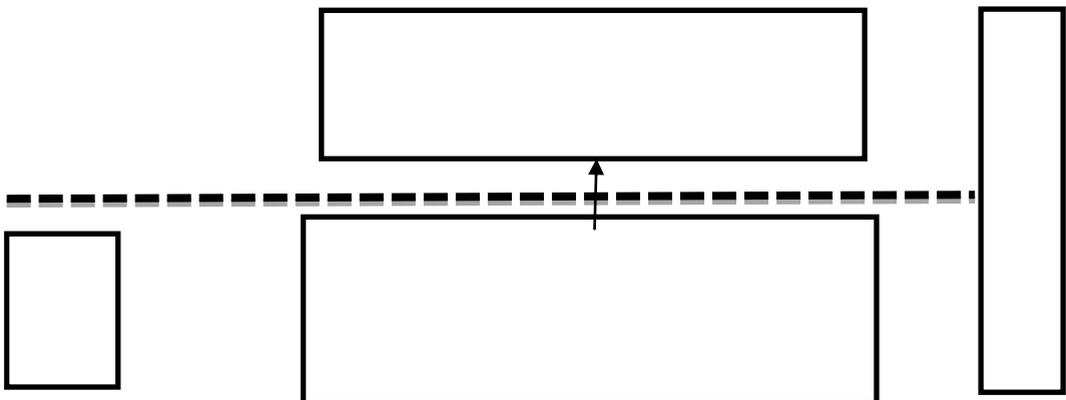
- To describe and to measure the concepts of financial literacy among Commerce and non-Commerce students in the Eastern Cape.
- To determine whether there is a significant difference in the financial literacy levels of undergraduate Commerce and non-Commerce students in the Eastern Cape.

3. LITERATURE REVIEW

3.1 Theoretical framework

Figure 1 shows the dimensions of financial literacy.

FIGURE 1: FRAMEWORK FOR THE CONCEPT OF FINANCIAL LITERACY



Source: Huston (2010:307).

The next section will explain the concept of financial literacy.

3.2. The concept of financial literacy

According to Huston (2010:307), financial literacy has two dimensions: a knowledge dimension and an application dimension. This suggests that individuals must be knowledgeable in the subject area; namely, personal finance, but also be able to apply their knowledge to make sound financial decisions. This study adopted the theoretical framework proposed by Huston (2010:307). Various authors identify the knowledge dimension as financial knowledge and the application dimension as financial skills (NFEC, 2012:8 cited in Beale, Johnson, Calder, Hayes & Rose, 2015; Lusardi & Mitchell, 2014:6; Remund, 2010:279; Hung, Parker & Young, 2009). This study will adopt the definition of Hung *et al.* (2009) that financial literacy refers to knowledge of financial concepts as well as the ability to use financial knowledge and financial skills to achieve financial well-being. The next section will define the dimensions of financial literacy: financial knowledge and financial skills.

3.3 Description of financial knowledge

Financial knowledge is one of the core elements of financial literacy and refers to the understanding of financial concepts that allows consumers to make informed financial decisions (Huston, 2010:307; Bowen, 2002:93). Shuttleworth (2011:98) states that financial knowledge refers to consumers' ability to understand financial information and to use such information to make informed, sound financial decisions. This definition suggests consumers need to be knowledgeable about basic and advanced financial concepts, such as savings and investments, time value of money, debt management and insurance (Swart, 2012:229; Walstad, Rebeck & MacDonald, 2010:46). Consumers need to be able to transfer financial knowledge into financial skills, such as financial control and financial planning.

3.4 Description of financial skills

Mundy and Musoke (2011:15) define financial skills as the ability of consumers to apply their financial knowledge in manage their financial situations. Financial skills are the ability to perform activities such as financial planning and financial control (Struwig, Roberts, & Gordon, 2013:28). According to PISA (2012:14), consumers must be able to apply their financial knowledge in their financial decisions and execute those decisions in the financial market.

Financial skills include financial control and financial planning. Financial control refers to the ability to control financial affairs through drawing a monthly budget and being able to open a bank account. It also refers to the careful consideration of

what one can afford and being able to decline financial products that do not meet one's needs (Mihalčová, Csikósová, and Antošová, 2014:320; Struwig *et al.*, 2013:11-12). Furthermore, financial planning refers to the ability to set cash aside for emergency purposes, having written down long-term financial goals and being able to compare financial products. It also refers to ensuring that one's monthly allowance covers monthly expenses, the ability to calculate bank charges and the ability to ask for advice about financial products (Struwig *et al.*, 2013:12-13; Mihalčová *et al.*, 2013:320).

3.4 Financial literacy of Commerce and non-Commerce students in South Africa

Fatoki (2014:263) investigated the financial literacy among final undergraduate students in the Departments of Agriculture and Chemistry (non-Commerce qualification) at two selected universities located in the Limpopo and Gauteng Provinces of South Africa. It was found that students studying towards non-Commerce qualifications had low levels of financial literacy, especially in terms of understanding money management (Fatoki, 2014:264). Van Deventer and De Klerk (2017:240) investigated the Generation Y students registered at the 26 public higher education institutions in South Africa and found that field of study influenced the financial literacy levels of students. It was found that students who were studying towards a Commerce qualification (BCom) had higher levels of financial literacy in areas such as spending, savings, and debt than students who were studying towards a non-Commerce degree (BA). It was also found that students studying towards a Commerce qualification had higher levels of financial literacy than students studying towards a BSc and diploma qualifications (Van Deventer & de Klerk, 2017:245). Botha (2013:91) investigated the levels of financial literacy of diploma students studying towards Commerce and non-Commerce qualifications. It was found that the students studying towards Commerce qualifications seemed to have, on average, a higher level of financial literacy than students who were studying towards a non-Commerce qualification.

Based on this literature review, the following hypotheses are presented.

4. RESEARCH HYPOTHESES

H₀: There is no significant difference in the financial literacy levels between Commerce and non-Commerce students of the Eastern Cape.

H₁: There is a significant difference in the financial literacy levels between Commerce and non-Commerce students of the Eastern Cape.

5. RESEARCH METHODOLOGY

5.1 Sampling and data collection

The ‘population’ of a study refers to the people that hold the information that the researcher wishes to collect (Struwig & Stead, 2013:114-115; Muijs, 2011:34; Zikmund *et al.*, 2010:387). The population of this study consisted of all the undergraduate students in a selected university in the Eastern Cape. A sample is usually identified, as the members of the population are often difficult to access, or the researcher has insufficient time to use the population in the research (Muijs, 2011:33). The sample of this study was made up of undergraduate students studying in the Faculty of Arts (non-Commerce) and Commerce at South African university located in the Eastern Cape. The selection of this sample was based on the logic that Commerce students learn more about personal finance-related concepts in their curriculum than Arts students (Van Deventer & De Klerk, 2017:245).

The study made use of a non-probability sampling technique; namely, convenience sampling, which refers to a sampling technique where the researcher selects sampling elements who are readily available to participate in the study (Dorofeev & Grant, 2006:411). Convenience sampling was appropriate because a sampling frame was not available to researchers (Dorofeev & Grant, 2006:411).

5.2 Questionnaire design

Closed-ended questions were used in both sections A and B of the questionnaire, which consisted of questions about the demographics of the respondents, as well as questions about the levels of financial literacy of Commerce and non-Commerce students.

A nominal scale was used in section A, while section B used a nominal and Likert-scale. Nominal scales are used in the description of labels or categories (Struwig & Stead, 2013:160; Crowther & Lancaster, 2009:154; Argyrous, 2005:8-9). The Likert-scale consists of a list of related questions, statements or items that the respondent is asked to answer by choosing from an increasing scale of responses (Verhoeven, 2011:165). Furthermore, section B contained a three-point nominal scale; namely, ‘Correct’ (coded 1), ‘Incorrect’ (coded 2) and ‘Do Not Know’ (coded 3) to measure financial knowledge; and a five-point Likert scale, ranging from ‘Strongly Disagree’ (coded 1) to ‘Strongly Agree’ (coded 5) to measure financial skills.

This research focused only on undergraduate students in the Eastern Cape. The population was grouped according to Faculties of the university as follows: Arts and Commerce. Two graduate students from the university conducted the fieldwork as part of their research project. The fieldworkers received a proper briefing on sample selection and interview procedures. Convenience sampling (willingness to be interviewed) was used to select respondents to participate in the study.

5.3 Data analysis

Validity refers to the extent to which the research instrument measures that which it is supposed to measure (Struwig & Stead, 2013:149; Verhoeven, 2011:36). The validity of the research instrument was assessed through content and construct validity. Content validity was assessed through the use of financial planning experts, while construct validity was assessed through Exploratory Factor Analysis and a loading of 0.5 was accepted (Maskey, Fei, & Maskey, 2018).

Once validity was assessed, the reliability of the study was assessed. Reliability refers to the extent to which the collection of data for the study will produce the same results (Pietersen & Maree, 2016:13). For the purpose of this study, Cronbach's alpha coefficient was used to assess the internal consistency of the construct 'financial skills' (Hardy & Bryman, 2009:23). A Cronbach alpha value of 0.7 and above is regarded as acceptable (Muijs, 2011:217).

To analyse variance among groups, a T-test of independence was used. An independent T-test was used to establish whether there was a difference between two groups (Howell, 2004:10; Collis & Hussey, 2009:262). The T-test was used to determine the difference between financial knowledge and Faculty. Thereafter, Cohen's d was calculated in order to measure the effect size of the difference in the respondents' financial knowledge. According to Steinberg (2008:365), Cohen's d indicates the size of the effect related to the standard deviation of a sample. A value below 0.4 indicates a small effect, while a medium effect includes values from 0.5 to 0.7, and values that refer to a large effect range from 0.8 or above (Steinberg, 2008:365).

6. EMPIRICAL RESULTS

Before the data were analysed in Statistica, they were captured in Microsoft Excel. Questionnaires with missing data were removed from the data analysis. This means that 240 questionnaires were administered. Only 197 questionnaires were completed and returned. Only 180 questionnaires of those were usable for

statistical purposes and a response rate of 82% was achieved. The empirical results refer to only 180 respondents. This approach is similar to that of Fatoki (2014:263), who used a sample of 152 students to measure the levels of financial literacy of students from two departments.

6.1 Demographic information

The questionnaire was evenly distributed between both Faculties, with 50% of respondents from the Arts Faculty (non-Commerce) and 50% from the Commerce Faculty. There was also a fairly even spread between male (45.6%) and female (54.6%) respondents. The majority of the respondents were between the ages of 18-21 (60.56%), followed by respondents between the ages of 22-25 (33.33%), with only 6.11% of the respondents being 29 years and older. Of the respondents, 57.22% were black, 26.11% white and 13.33% coloured, with only 2.17% belonging to the Asian population. The majority of the respondents were isiXhosa speaking (43.89%), while other respondents spoke English (34.44%), Afrikaans (10.56%), (3.33%) isiZulu, Sotho (1.11%) and other (6.67%).

6.2 Financial knowledge levels

Table 1 below presents respondents' answers to several questions regarding their levels of financial knowledge.

Table 1: Financial knowledge score per Faculty

Topics	Correct answers (Arts)		Correct answers (Commerce)	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Risk and investment	55	61.1	82	91.1
Requirement to open a bank account	87	96.7	88	97.7
Interest rate and cost of debt	65	72.2	81	90
Inflation and cost of living	9	10	12	13.3
Inflation rate	26	28.9	61	67.8
Compound interest	41	45.6	67	74.4
Good credit record	82	91.1	79	87.8
Function of FSB	26	28.9	7	7.8
Credit cards and least expensive form of credit	30	33.3	18	20
Motor vehicle insurance premiums	17	18.9	10	11.1
Overdraft as a credit facility	42	46.6	73	81.1
Interest rate calculation	14	15.6	6	6.7
Loans and interest rates	75	83.3	82	91.1
Total correct answers	644	7.16%	751	8.3%

As illustrated in Table 1, 61.1% of respondents in the Faculty of Arts, compared to 91.1% of respondents in the Faculty of Commerce, answered questions regarding risk and investment correctly. This means that more respondents studying in the Faculty of Commerce were knowledgeable of the impact of risk on investment return. Respondents from both Faculties, Arts (96.7%) and Commerce (97.7%), knew that an identity document is required in order to open a bank account. Respondents from the Faculty of Arts (72.2%) and the Faculty of Commerce (90%) were aware that a rise in interest rates will cause the cost of borrowing to increase. However, more respondents studying in the Faculty of Commerce (90%) were more knowledgeable of the effect interest rates have on the cost of borrowing. Few respondents were aware that a rise in the inflation rate does not cause the price of food to decrease: only 10% of respondents studying in the Arts Faculty and only 13.3% of respondents in the Faculty of Commerce answered this question correctly. This indicates that respondents from both Faculties were not aware of the effect of inflation on their purchasing power. Only

28.9% of respondents studying in the Faculty of Arts was aware that the South Africa’s inflation rate target ranges from 3% to 6%, while 67.8% of Commerce students were able to answer the question correctly. This indicates that students in the Faculty of Arts are not knowledgeable about South Africa’s inflation guidelines.

Further differences in financial knowledge were highlighted by compound interest-related questions, with 45.6% of respondents in the Faculty of Arts, compared to 74.8% of respondents in the Faculty of Commerce, answering compound interest questions correctly. This means that respondents studying in the Faculty of Arts are less knowledgeable of the effect of compound interest on the value of cash. In addition, 15.6% of respondents studying in the Faculty of Arts and only 6.7% of respondents studying in the Faculty of Commerce were able to calculate the interest calculation correctly.

Table 2 below shows the financial knowledge scores across the two Faculties. The financial knowledge levels of respondents are ranked from high (70%-100%), to medium (50%-69%), to low (0%-40%), based on the respondents’ level of financial knowledge.

Table 2: Financial knowledge score per Faculty

Levels of financial knowledge	Arts Faculty		Commerce Faculty	
	Frequency	Percentage	Frequency	Percentage
High Financial Knowledge (70%-100%)	32	35.56%	69	76.67%
Medium Financial Knowledge (50%-69%)	48	53.33%	18	20%
Low Financial Knowledge (0%-40%)	10	11.11%	3	3.33%
All groups	90	100%	90	100%

As seen in Table 2, the majority of the respondents from the Commerce Faculty (76.67%) had high levels of financial knowledge compared to the respondents from the Arts Faculty (35.56%). This further translates into 53.33% of respondents studying in the Arts Faculty having a medium level of financial knowledge as compared to 20% of respondents studying in the Commerce Faculty. Most respondents from the Arts Faculty (11.11%) have a low level of financial knowledge, as opposed to only 3.33% of the respondents studying in the Commerce Faculty. The following section will provide the validity and reliability analysis of the measuring instrument.

6.3 Results of validity and reliability analysis

EFA (Exploratory Factor Analysis) was used to assess the validity of the factor financial skills. EFA is used in order to find correlation between factors and states that factor loadings of above 0.5 are valid or significant (Yang, 2010:160). Thereafter, reliability was determined by calculating Cronbach's alpha, where a coefficient value of 0.7 is usually considered reliable (Muijs, 2011:217).

In the study, 13 items were expected to measure the factor 'financial skills'. 'Financial skills' was divided into 'financial control' and 'financial planning'. Table 3 below presents the factor loadings and the Cronbach-alpha coefficient for the factors.

Table 3: Validity and reliability of financial skills

FINANCIAL CONTROL				
% of Variance: 3.633735		Cronbach's alpha: 0.809		
Item	Statement	Factor loading	Item-total correlation	Cronbach's alpha deletion
FS1	Before I buy something, I carefully consider whether I can afford it	0.822803	0.691125	0.729802
FS6	I can physically draw up a monthly budget	0.541178	0.508192	0.816475
FS7	I know how to open a bank account	0.814198	0.701808	0.728706
FS13	I am able to say no if I do not want to buy a financial product	0.766924	0.620490	0.765153
FINANCIAL PLANNING				
% of Variance: 3.455932		Cronbach's alpha: 0.802894		
Item	Statements	Factor loading	Item-total correlation	Cronbach's alpha deletion
FS3	I keep cash aside in case of an emergency	0.562640	0.57779	0.772697
FS4	I write down my long-term financial goals	0.615451	0.553178	0.773854
FS8	My monthly allowance is enough to cover my monthly expenses	0.650365	0.474883	0.7928804
FS9	I am able to compare different financial products and services	0.614616	0.625315	0.759600
FS11	I am able to calculate the fees that are charged on my bank account	0.709114	0.539999	0.778438
FS12	I ask for help or advice about financial products	0.702637	0.629218	0.756983

Table 3 presents the EFA results, indicating that four items loaded as expected (FS1, FS6, FS7 and FS13). However, a cross-loading of items FS2 and FS10 did occur and these items were deleted for further data analysis. Furthermore, items FS1 and FS7 had the highest loading of 0.82 and 0.81 respectively. On the basis of the result of the EFA, the factor was named 'financial control'. The factor 'financial control' reported a Cronbach-alpha coefficient of 0.809, meaning that it was reliable.

Table 3 also shows that seven items; namely, FS3, FS4, FS8, FS9, FS10 FS11, and FS12 were expected to load onto the factor ‘financial planning’. However, the EFA results shows that six items loaded onto ‘financial planning’: namely, items FS3, FS4, FS8, FS9, FS11, and FS12, with a factor loading greater than 0.5. FS5 had a loading less than 0.5 and thus was not considered for further data analysis. Items FS2 and FS10 had cross loaded and were also removed from further data analysis. Items FS11 and FS12 has the highest loadings of 0.7. The Cronbach-alpha of 0.802 was reported for the factor ‘financial planning’, which is greater than the 0.7, which is considered reliable.

‘Financial control’ reported a mean of 4.07. The majority of the respondents from both Faculties (89.45%) agreed, while only 6.11% of the respondents disagreed with the factor ‘financial control’. This means that most of the respondents (89.45%) agreed that they carefully consider whether they can afford something before they buy it, they keep cash aside for an emergency, they can physically draw up a monthly budget, they know how to open a bank account and they are able to say ‘no’ if they do not want to buy a financial product.

‘Financial planning’ scored a mean of 3.42. This means that the majority of the respondents (72.2%), tended to agree that they are able to keep cash aside for an emergency, write down financial goals, and are able to see whether or not their monthly allowances are enough to cover their monthly expenses. Furthermore, they are able to compare different financial products or services, calculate the fees charged on their bank account and ask for assistance or advice about financial products when required. Only 20% of the respondents were neutral about these statements, with 7.78% of the respondents disagreeing.

7. ANALYSIS OF VARIANCE AMONG GROUPS

The following section will present the T-test and Cohen’s d between the Faculties. Table 4 below presents the t-value, p-value and Cohen’s d for ‘financial knowledge’ and ‘financial skill’.

Table 4: T-test of independence for level of financial knowledge and skill

Factor	Mean		t-value	p-value	Cohen's d
	Arts	Commerce			
Financial knowledge	0.6174	0.7722	6.6496	0.0001*	0.9968
Result (p=0.0001, d=0.9968)*					
Factor	Mean		T-test		
	Arts	Commerce	t-value	p-value	
Financial control	4.11	4.04	-0.4657	0.6420	
Financial planning	3.39	3.45	0.5471	0.5849	

As illustrated in Table 4, and indicated by the p-value ($0.0001 < 0.05$), there is a statistically significant difference between the Faculties' level of financial knowledge. Furthermore, there is a practical significance in the level of financial knowledge between the respondents in the Faculty of Arts and those from the Faculty of Commerce. This is indicated by the Cohen's d ($d=0.9968$) which is larger than the 0.8, which in turn indicates a large practical significance. Table 4 also illustrates that there is no significant difference the Faculties' 'financial control' with $p = 0.6420$ or 'financial planning' with $p = 0.5849$. This means that there is no significant difference in terms of how respondents in the two Faculties perceive their levels of financial control and financial planning.

8. DISCUSSION, RECOMMENDATIONS AND CONCLUSION

The empirical results indicated that there is a significant difference between the Faculties' financial knowledge. In other words, the Commerce students had higher levels of financial knowledge than non-Commerce students. This is similar to the findings of Van Deventer and De Klerk (2017:240) and Botha (2013:91), who found that Commerce students in South Africa have higher levels of financial knowledge than non-Commerce students. The empirical results indicate that there is no significant difference between the financial skills (financial control; financial planning) of respondents in the two Faculties ($p = 0.6420$; $p = 0.5849$). This is similar to the study of Oseifuah (2014:249) who found no significant difference in the attitude towards financial skills and levels of financial knowledge among students in South Africa. This may result from both Commerce and non-Commerce students being confident in their ability to control their finances (4.11). Therefore, the null hypothesis (H_0) is accepted and the alternative is rejected (H_1).

It is recommended to the Faculty of Arts to implement a personal financial management course, as students who have attended such a course have high levels of financial knowledge (Oseifuah, 2014:247). This personal financial management course should focus on basic financial concepts such as inflation and the time value of money. It should also focus on advanced financial concepts, such as forms of credit, for example credit cards, calculation and motor vehicle insurance. It is also recommended to the Faculties of Commerce and Arts to use the personal financial management course to teach their students about financial skills, especially financial planning. This is because both groups of students tend to agree (3.42) with the statements reflecting sound financial planning. Additionally, cash management as part of financial planning is very important to South African students (Louw *et al.*, 2013:445). Therefore, students should be taught how to set aside cash for emergency, write down long-term financial goals, and compare financial products. The personal financial management course should also focus on teaching students how to calculate bank charges and the effect of inflation on their buying power.

This study had a few limitations, since the sample was only Arts and Commerce students. It also used a non-probability sampling to choose those students. Future studies should consider using probability sampling to be able to generalise the study to the entire population. Lastly, this study measured perceived financial skills and any future study should include actual financial skills of the students. Notwithstanding these limitations, this study makes a valuable contribution to the financial literacy literature in South Africa by providing evidence of the gap in financial knowledge between Commerce and non-Commerce students in the Eastern Cape.

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