

An Exploratory Factor Analysis of Financial Literacy and Awareness of Investment Scam

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ABSTRACT

Financial literacy among university students are important in preventing them from becoming victims of fraudulent investments. Such investment scams present irresistible offer of high returns with little or no risks. Since university students are expected to demonstrate low financial literacy, they are likely to be at risk when they lack awareness of which investments are legitimate and which are not. This paper attempted to identify factors that determine financial literacy and awareness of investment scams among university students. The data was collected through a survey questionnaire. Two hundred and eleven students responded to the survey that included items reflecting financial literacy and awareness of investment scams. An exploratory factor analysis of 32 items revealed three distinct factors. These results provide a validated and reliable variables for testing financial literacy and awareness of investment scams.

Key Words: *exploratory factor analysis, financial literacy, awareness, investment scams, students*

1. INTRODUCTION

Financial literacy can be defined as “the knowledge and capability to make informed and effective decisions of financial resources” (Venkataraman & Venkatesan, 2018). The Organization for Economic Co-operation and Development (OECD) refers to financial literacy as a mixture of awareness, knowledge, skills, attitude and behaviour required to make financial decisions and eventually achieve individual financial well-being (OECD INFE, 2011). Prior studies showed that financial literacy is an important determinant in investment decisions (e.g. Li, Li & Wei, 2020; Al-Tamimi & Kalli, 2009). From an individual investor perspective, common investment decisions include the decision to purchase and finance a home as well as preparing for retirement (Hung, Parker & Yoong, 2009). However, individual investors often face potential risks such as being victimised by investment fraud due to their lack of financial literacy (Venkataraman & Venkatesan, 2018). This is because an illiterate person in financial

matters may not be aware of the various methods employed by scammers when committing financial frauds. In addition, there is an assumption that human beings are not always rational (Hidajat et al., 2020). Despite the numerous studies done on the effect of financial literacy on investment decisions, research that examine how financial literacy affects awareness of the public on investment scams are still scarce.

The Securities Exchange Commission (SEC) in the US defined investment scams as affinity fraud which are scams that prey upon members of identifiable groups, such as religious or ethnic communities, the elderly, or professional groups. In Malaysia, the number of individuals declared bankrupt had grown from year to year (Nurul et al., 2016). One of the factors that contributed to the rising number is lack of financial literacy and low investment awareness among them. More importantly, according to the Bankruptcy Statistic Report (2019) by Malaysian Department of Insolvency, students are one group of individuals who are declared bankrupt and shows an increasing trend from year 2015 to year 2019. This discouraging patent reflects the low level of financial literacy and investment awareness among them. A review of the extant literature revealed that there is limited research done which focus on awareness of students on investments scams. Moreover, currently there is a lack of studies that examine how financial literacy affects the awareness of university students on investment scams. A recent study by Gui, Huang and Zhao (2020) asserted that standard financial literacy questions are not related to individuals' awareness of the link between high risk and high return, thus calling for designing a new question of financial literacy.

In the present study, we empirically explored the factors that constitute the concept of financial literacy from the point of view of its potential effect on the awareness of investment scams. The need for this study points to two fundamental issues: (1) few empirical studies focus on financial literacy as a precursor to avoid investment scams and (2) there is a lack of existing validated and reliable instrument to conceptualise financial literacy that relates to investment scam awareness. Hence, this study aims to fill the gap by conducting an exploratory factor analysis on 32 items of a set of questionnaires developed in this study.

2. LITERATURE REVIEW

Several studies on financial literacy have shown that students have very low financial literacy, and their money management skill are very weak (Md Shafik & Wan Ahmad, 2020). In recent years, financial products offered in the market has shown an increasing trend tremendously. While there are legitimate financial products that can offer high returns to the investors, there are also some financial products that could deceive the investors (Reurink, 2016). These investment scams or pseudo-investments offer high rates of return with little or no risks. With the current situation of COVID-19 and the financial predicaments faced by the public, including university students, it is important to facilitate them with financial literacy that can improve their knowledge on managing their personal financial management. In addition, proper knowledge on financial matters could prepare them with a good money management attitudes before they make a decision on how to spend their money (Al-Tamimi & Kalli, 2009).

Students who are financially literate have a better understanding on how to manage their personal financial matters (Ji, 2019). To be a financially literate does not mean that the students must master all the finance areas. A basic knowledge of personal financial management is enough for them to be able to find, analyze, making a good financial decision and cultivate a healthy financial and investing behaviour among students. Sufficient financial knowledge and investment awareness are needed to prevent these students become a financial complexity victim. Student is the most vulnerable target for the financial institutions since the student can be easily influenced and convinced to buy or invest in their financial products due to lack of financial literacy and investment awareness. Most of the adult individuals have an adequate level of financial literacy compared to younger generation (ANZ, 2008; Lusardi & Mitchell, 2011). They have a better understanding towards the financial knowledge and responsibilities which they know how to priorities their financial investment and spending. Furthermore, adult individuals tend to seek for a professional advice to help them making a wise financial decision. IN contrast, younger generation especially students who are financially illiterate, are highly exposed to financial risk and

problems. The desire and temptation for fast wealth is the main factor that the student can be a victim to a financial problem, including Pyramid or Ponzi scheme. These illegitimate schemes are referred to as fraudulent investment products which offer high returns with just a small amount of investment (Troeger, 2011). This strategy is the most common and effective way of attracting and alluring the potential victims.

University students is an easy target group to invest in their financial products (Md. Shafik & Wan Ahmad, 2020). Davidson (2006) stated that the students need to be occupied with necessary financial knowledge and appropriate training in managing their income and expenses during high school, college or university. It is important to have the training since students might failed in managing their income and they might not know to prioritise their spending.

3.0 METHODOLOGY

This study employs an exploratory quantitative research design to develop the variables to examine financial literacy among students of higher education (Williams, Onsmann & Brown, 2010), Data was collected via online questionnaires from 211 students of higher education in Malaysia and analysed using Statistical Package for Social Science (SPSS) version 24. Part A of the survey was designed for the demographic analysis of the respondents. Part B which consists of 32 items was measured using five-point Likert scale response format such as 1=strongly agree, 2=agree, 3=neither agree or disagree, 4=disagree and 5=strongly disagree. Further analysis was also done using the Parallel Analysis on Monte Carlo Simulator to confirm the factors derived from the analysis and these factors will constitute the variables for further study.

4.0 RESULTS AND DISCUSSION

The overall demographic results on the profiles of respondents such as gender, age, marital status, level of current study, accommodation type and sources of fund during study are shown in Table 1 below.

Table 1 Profile of Respondents

Profile	Frequency (n)	Percentage (%)
Gender		
Male	38	18.0
Female	173	82.0
Age		
18 – 21 years old	156	73.9
22 – 25 years old	52	24.6
26 years old and above	3	1.4
Marital Status		
Married	3	1.4
Single	208	98.6
Level of Current Study		
Bachelor	95	45.0
Diploma	106	50.2
Foundation/Certificate	8	3.8
PhD	2	0.9
Accommodation Type		
College resident	103	48.8
Non-resident with family	39	18.5
Non-resident with friends	69	32.7
Sources of fund during study		
Online business	3	1.4
Parents	77	36.5
Part-time jobs	2	0.9
PTPTN	109	51.7
Scholarship	20	9.5

The data were further analysed in a data reduction exploratory technique referred to as factor analysis. This will determine whether the items are within the same construct. In this factor analysis, the principal axis factoring (PAF) with varimax rotation was conducted to identify the latent constructs on all items. The varimax rotation, an orthogonal rotation method is for factors that are uncorrelated with one another, thus, it makes it easier to match since the factor loading produced under this rotation is either very high or very low. In order to determine the sampling adequacy of the data used for factor analysis, a Kaiser-Meyer-Olkin test was conducted. Results in Table 2 shown that the sampling is adequate since the result far exceeds the minimum value of 0.5 (Kaiser, 1981) which is 0.914 and the Bartlett test of sphericity also shown that the result is significant.

Table 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.914
Bartlett Test of Sphericity	Approx. Chi-Square	6416.839
	df	496
	Sig.	.000

From the analysis, the total variance extracted where the eigenvalues greater than 1 was explained at five stages and it explained 63.5% of the variance. This led the researchers to easily conclude that there are five factors. However, further detail on the scree plot shown that there are three predominant factors as seen in Figure 1. A further analysis using Parallel Analysis on Monte Carlo Simulator was done to identify the factors to be retained. Figure 2 shown that the lines intersect at point 3 and this justified that there are 3 factors that should be retained.

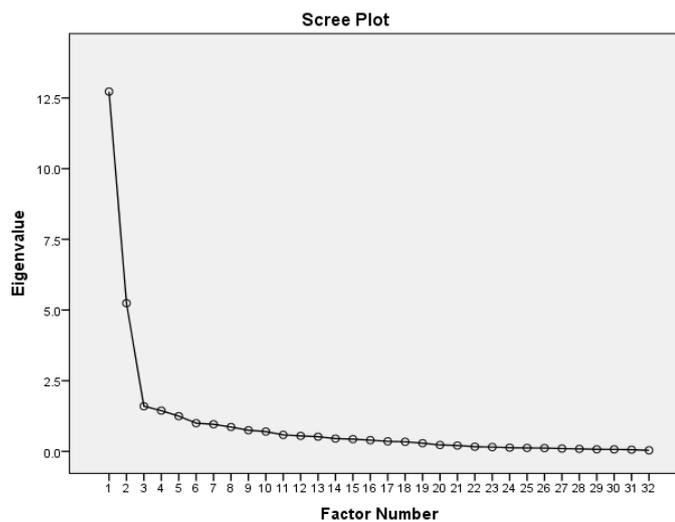


Figure 1. Scree Plot

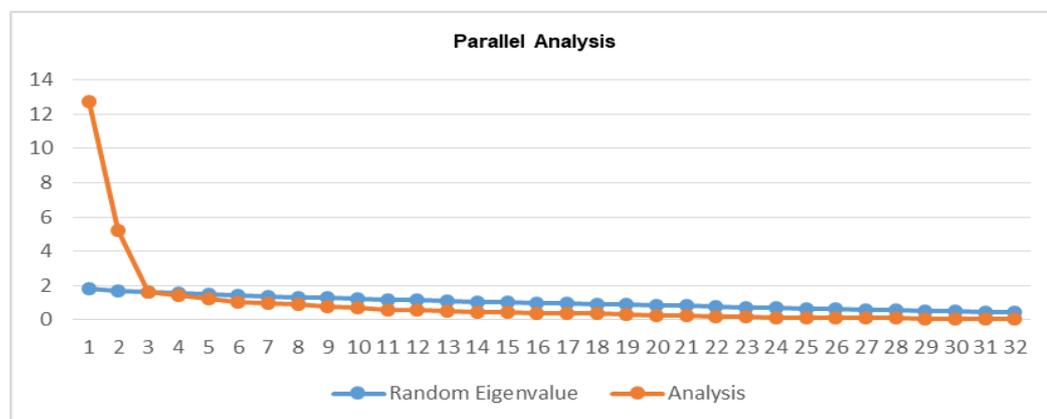


Figure 2. Parallel Analysis (Monte Carlo Simulator)

The data was then re-run with three factors. The results were further extracted from the rotation factor matrix with a loading of 0.4 or greater. Any loading below than 0.4 was dropped from the factors since Guadagnoli and Velicer (1988) considered scores greater than 0.4 to be acceptable. All the three factors were then tested using the Cronbach’s alpha coefficient of internal consistency to ensure that the factors produced are reliable and the result is shown in Table 3.

Table 3 Reliability Test Result

Factors	Cronbach’s Alpha	No. of Items
Factor 1	0.977	15
Factor 2	0.853	8
Factor 3	0.888	4

Based on the factor analysis and confirmation on the reliability of those items in the factors, a total of five items were dropped from the factors. This produced a final result of 27 items which can be classified in three distinctive extracted factors as shown in Table 4.

Table 4 Extracted Factors

Factor 1	Factor 2	Factor 3
I am aware that some fraudsters depend on their ability to continuously attract new investors	I make detailed plans to manage my money	I set my own financial goal to buy a house
I am aware that some fraudsters portray a luxurious lifestyle to continuously attract new investors	I make detailed plans to manage my expenses	I set my own financial goal to buy a car
I am aware that some fraudsters depend on their own social status to continually attract new investors	I make a note of upcoming bills to ensure I don't miss paying them	I set my own financial goal to be debt free
I am aware that some fraudsters use technical jargon to persuade investors	I make day-to-day decisions about my own money	I set my own financial goal to be financially independent
I am aware that new students are potential target victim of the Pyramid/Ponzi scheme	I record my expenses	
I am aware that some fraudsters depend on celebrity/public figure to continuously attract new investors	I put aside money for paying my bills	
I am aware that i can fall victim into a Pyramid/Ponzi scheme if I am greedy	I save money on a regular basis	
I am aware that an investment scheme that promises an abnormally high return is not to be trusted]	I save money into savings account	
I am aware that if I feel embarrassed to report that I am a victim of a fraudulent scheme, the scheme will continue to cheat other people		
I am aware that any investment that promises consistent positive returns regardless of overall market conditions is not to be trusted		
I am aware that i can fall victim into a Pyramid/Ponzi scheme if I am not financially literate		
I am aware that an investment scheme that promises an abnormally high return with no risk is a Pyramid/Ponzi scheme		
I am aware that when it comes to investment, no return is ever guaranteed		
I am aware that I can fall victim into a Pyramid/Ponzi scheme through peer pressure from my affinity group. (e.g.: classmates, student association/student) counsel/alumni)		
I am aware that i can be a target victim of a Pyramid/Ponzi scheme when I just received my scholarship/ PTPTN/ education funds		

Consistent with Williams, Onsman & Brown (2010), the above analysis concludes with an interpretation. The interpretation process involves examination of which variables are attributable to a distinct factor and giving that factor a name or theme. From the deduced three factors in the analysis, these will be operationalised and descriptively labelled for further analysis in future research.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Financial literacy helps students to engage in wiser decision by differentiating between the needs and desires. Lack of knowledge and awareness on investment scams may influence students to get involved in fraudulent investment schemes due to the attractive offer in multiplying their funds with high returns in specified period. Consequently, poor investment decisions may bring students to another level of financial difficulty in long term as the impact of greed and unwanted borrowings. This paper emphasized on the factors that reflect financial literacy and awareness of investment scams among university students. A set of 32 questions representing the items of financial literacy and awareness of investment scams have been tested in Factor Analysis, resulting in 27 of the items to be valid and can be used for further analysis. The results of this study provide a validated and reliable variables for testing financial literacy and awareness of investment scams which can be used in future research.

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