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Effects of Risk Tolerance and Financial Literacy to Investment Intentions

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Financial decisions have become important to researchers, personal financial planners, investment counsellors, and policy makers, especially when considering the new changes that have increased the economic landscape complex. Within the domain of financial decision-making, an individual's tendency to take a risk performs a crucial role in the making of financial decisions and in achieving financial goals. This paper provides a conceptual development of the relationship between financial literacy, risk tolerance and investment intention. Many papers have documented the correlation between financial literacy and a set of behaviours: e.g. saving, wealth, and portfolio choice. Meanwhile risk tolerance is a significant factor in a number of household financial decisions. In order to predict intentions and behaviour, The Planned Behaviour Theory has tested that attitude, subjective norm and perceived behaviour control as determinant of intention and behaviour. In the context of this study, investors may be interested in investing in a particular company only when they have the time and skill to evaluate the company and have money to invest. Therefore, when forming an intention to invest, individual investors normally begin with evaluations of companies' financial positions based on some objective measures such as return on equity, dividend payout ratio and beta. Next, their emotional perceptions of such evaluations may come into effect as they are trying to justify their investing decisions in company stock.

Key words: *Financial decision, financial literacy, risk tolerance, investment intention.*

Introduction

Risk tolerance has been conceptualized separately, as well as measured and evaluated in many recent empirical studies. It is defined as the maximum uncertainty that will be received when making personal financial decisions, or as the willingness to take risks on opportunities to achieve more profit (Grable, 2008; Grable and Joo, 2004). As shown in the review of risk tolerance research, there is a consensus that individuals who are more financially literate tend to be more tolerant of risk (Grable and Joo, 1999, 2004; Grable, 2000; Frijns *et al.*, 2008; Grable and Roszkowski, 2008; Gibson *et al.*, 2013). Furthermore, Grable and Joo (1999) state that financial knowledge is the most important factor for predicting risk tolerance when compared to other factors such as demographics and socioeconomic characteristics. Likewise, Grable (2000) also found that there was a combination of personal characteristics and socioeconomic background in achieving financial success.

Frijns *et al.* (2008) examined the effect of self-assessed financial expertise on portfolio choices. They found that individuals who valued themselves low in terms of financial expertise tended to allocate their funds into less risky assets. Beal and Delpachitra (2003) in their study of the financial literacy of Australian students found that participants who are low risk adverse (more risk tolerant) are usually those who have higher financial knowledge and skills. The ability to understand financial literacy is very important in making good investment decisions.

Several studies have revealed financial literacy interventions in an individual’s financial decision-making processes. The researchers revealed that the biggest problem causing a person to stay away from investment is a lack of financial knowledge (Jureviciene and Jermakova, 2012). The study found that people who are financially literate and know the difference between mutual funds and stocks are willing to take risks during the investment decision making process. People who are less financially literate about the stock market do not want to take risks (Sabri, 2016).

A strong individual has a different level of risk tolerance than individuals with little or no wealth. As a result, risk tolerance increases with increasing wealth (Chaulk *et al.*, 2003). In addition, risk tolerance is not only related to the amount of individual wealth. Individuals have different levels of risk tolerance due to different life experiences and differences in social and cultural backgrounds (Olsen and Cox, 2001). Risk tolerance and its relationship with financial or investment decision making are explained by two theoretical perspectives in the literature: traditional finance (normative model / theory) and behaviour finance (descriptive model / theory) (Grable, 2008).

Research conducted by Jihadi (2018) states that there is a significant positive effect between financial literacy and investment intentions. This means that the higher a person's financial literacy, the higher the intention to invest. This is related to Sabri's (2016) research which says that people with low financial literacy do not want to take risks. The next question is whether it is possible for people with low financial literacy to have high financial tolerance so that the investment intention is high.

Review of Previous Research

Financial Literacy

There are several definitions of financial literacy expressed by researchers, including Servon and Kaestner (2008), which state that financial literacy is a person's ability to understand and utilize financial concepts. Furthermore, Lusardi and Mitchell (2011) stated that individuals who have high levels of financial literacy understand compound interest rates. Agarwalla *et al.* (2013) state that individuals who have financial literacy will understand the time value of money, and will participate in the formal financial markets and stock markets (Klapper *et al*., 2012; Lusardi *et al*., 2009).

Some studies reveal the involvement of financial literacy in the process of making financial decisions individually. The researchers revealed that the biggest problem that caused a person to avoid investing was a lack of financial knowledge (Jureviciene and Jermakova, 2012). The study found that people who are financially literate and know the difference between mutual funds and stocks are willing to take risks during the investment decision making process. People who are less financially literate about the stock market do not want to take risks (Sabri, 2016).

There is an argument that perceptions of financial knowledge can have an additional effect on financial behaviour. Perceived financial knowledge (or trust) has been shown to be strongly correlated with a large number of financial decisions (Allgood *et al.*, 2016; Anderson *et al.*, 2016; Farrell *et al*., 2016; Tang and Baker, 2016). In fact, the correlation between actual financial knowledge and perception has been found to be rather weak (Lusardi and Mitchell, 2009; Parker *et al.*, 2011).

There are various definitions of financial literacy in the literature. For example, financial literacy can be defined broadly as a general understanding of the economy, or just a matter of money management (Gallery *et al.*, 2011). This can also be referred to by different terms, for example, "financial capability" in the US, which includes different components such as financial skills, attitudes, and knowledge (Gallery *et al*., 2011). However, there are other definitions, namely "the ability to make informed judgments and make effective decisions regarding the use and management of money" (Schagen and Lines, 1996; Noctor, Stoney, and Stradling, 1992), that have been widely accepted (Galeri *et al.* , 2011).

A more detailed explanation of financial literacy is presented by Vitt (2005), financial literacy is the ability to read, analyse, manage and write financial conditions related to life. This is further clarified by Mandell and Klein (2007) who state that financial literacy also covers several financial aspects, namely basic knowledge of personal finance, money management, credit management, savings and investment, and risk management. Financial literacy of an individual is directly related to behaviour individual finance (Gustafsson and Omark, 2015). Increasing financial literacy can lead to effective financial decisions (Bernheim *et al.*, 2001). Al-Tamimi and Al Anood (2009) note that, on average, investors lack knowledge of money issues and investment decisions and that this is what happens in developing countries. There is also some literature published in identifying the factors that cause the separation of financial knowledge and investment decisions. The issue of financial literacy is not uncommon in developing countries. Studies show because of the unconsciousness of financial products, most people in developing countries do not invest in financial products (Honohan, 2008).

Risk Tolerance

Financial risk is usually assumed to be a function of the possible return distribution. The greater the variance, the greater the risk (Olsen, 2008). Risk tolerance is one of the characteristics that is most needed by an investor if he wants to succeed. Individual risk tolerance is assumed to be the main determinant in the selection of asset allocation, securities selection and strategic objective plans, so that risk tolerance assessments talk more about plans for future goals (Grable and Lytton, 2001).

Risk tolerance can be defined as the willingness of individual investors to take investment decisions where there is a desired goal, but the achievement of that goal is uncertain and there is a possibility of loss (Kogan and Wallach (1964) in Grable, 2008). Risk tolerance affects the decisions of investors who invest their savings for short-term and long-term goals. Investors with various levels of risk tolerance behave differently when making investment decisions regarding various investment avenues. Furthermore Cordell (2001) divides investment risk tolerance into four elements: attitudes towards risk, financial ability to bear risk, knowledge, and the tendency for secrecy. Risk tolerance is not static but changes all the time. In good times, when asset prices rise, people tend to have a higher risk tolerance. On the other hand, in bad times, risk tolerance decreases to a low level (Grable *et al.*, 2006).

However, Roszkowski (1998) in Grable and Lytton (2001) states that to assess a person's risk tolerance is through a process that is not easy. This is because risk tolerance is difficult to understand, and the concept is unclear. Hallman and Rosenbloom (1987), added that investor risk tolerance tends to be subjective rather than objective, and is rather difficult to measure because investor risk tolerance refers to how well an investor is able to overcome the volatility of stock prices and how he is able to control attitudes and emotional tolerance in the face of risk. This opinion is reinforced by Trone *et al.* (1996) who state that the ability to achieve the desired investment objectives is most significantly influenced by the emotional ability of investors to accept the possibility of loss in portfolio value. Pak and Mahmoed's (2012) research supports what was conveyed by Trone *et al.* (1996) that investors will not behave rationally in all situations; sometimes, they can show opportunistic or irrational behaviour in the investment decision making process. Therefore, the government must take effective steps to control such behaviour, because if not, the stock market can "balloon".

Most macroeconomic models describe risk as an internal component of an asset. Conversely, prospect theory defines risk differently, that is, as not only related to assets but also to investors, or more precisely to their amount of wealth. Wealthy individuals have different levels of risk tolerance than individuals who have little or no wealth. As a result, risk tolerance increases with increasing wealth (Chaulk *et al.*, 2003). In addition, risk tolerance is not only related to the amount of individual wealth. Individuals have different levels of risk tolerance due to different life experiences.

There are two main theoretical perspectives that can explain the risk tolerance and its relationship with investment decision making. The first is the traditional financial model (normative model), which assumes rational behaviour determines how individuals must make decisions in expected utility theory (Von Neumann and Morgenstern, 1947). The theory is the most popular model (Grable, 2008). The second is Behaviour Finance Theory (descriptive model). This theory opposes the assumption of rational behaviour and assumes that individuals are generally irrational and can involve behavioural biases or cognitive errors in their actual decision making (de Dreu and Bikker, 2012). Behaviour Finance has received more attention with leading theories such as Prospect Theory (Kahneman and Tversky, 1979, 1984) where individuals see their advantages and disadvantages differently and their risk tolerance is related to how the problem is framed (i.e. the problem of framing).

Risk tolerance is an important factor influencing various personal financial decisions (Snelbecker *et al.*, 1990, as quoted in Grable, 2008). Risk tolerance and its relationship with financial or investment decision making are explained by two theoretical perspectives in the literature: traditional finance (normative model / theory) and behaviour finance (descriptive model / theory) (Grable, 2008). In general, the normative model determines how people must make decisions rationally, while the descriptive model describes how and why people make actual decisions behave non-rationally (Grable, 2008).

Investment Intentions

Various experts define intention in many ways. In general, intention is considered as an individual indication of what he will do in the future. Thus, a person's intention is his desire or plan to take the action in question in the future. Because intention presents information about the future direction, attitudes, beliefs, and intentions usually adjust. Bird (1988,) sees intention as a state of mind that directs one's attention to certain objects (goals) based on past experiences or certain ways of achieving things. Meanwhile, according to Angelle (2006), an individual's intention is their resolution to act in a certain way. Furthermore, it is said that intention is the construct of intentional and clear attitudes and individual intrinsic values that play an important role in predicting the future behaviour of individuals.

Intention is assumed to identify motivational factors that influence behaviour and to show how hard people want to try, or how much effort they will make to conduct the behaviour (Ajzen, 1991). In other words, the individual's future behaviour can be predicted by intention, because intention is the first step that forms the next pattern of behaviour. As a result, that intention can indicate the direction of an individual's possible behaviour in the future.

In The Theory of Reasoned Behaviour as expressed by Fishbein and Ajzen (1975) it is assumed that an individual will act rationally and act using available information. Ajzen (1991) further suggests that the stronger the intention to engage in behaviour, the more likely the performance is. Several studies involving financial products have used investment intentions as a dependent variable including Dey *et al.* (2015) (Kozup *et al.*, 2008; Lim *et al.*, 2013). Lim *et al.* (2013) conducted research on the Singapore market showing a negative relationship between market investment intentions and risk aversion.

Beck (2004) also considers intention as someone's adoption of an action on several other actions where the results might be known for each action. Hanafiah *et al.(*2016) found that there is a positive relationship between economic benefits and intrinsic rewards with the intention to invest. Intrinsic appreciation is determined in terms of a sense of personal achievement and self-satisfaction. The results show that intrinsic rewards are the most important factor in predicting an entrepreneur's intention to invest in the future (Hanafiah *et al.*, 2016). More explicitly, Calvart and Campbell (2007) state that there is a positive relationship between knowledge and financial behaviour.

Research Objectives

The research builds several research objectives that are based on gaps in the existing literature, specifically:

a. To study the potential influence of risk tolerance between the relationship between financial literacy and investment intentions.
b. To provide useful insights on the application of financial behaviour and financial decision making.

Methodology

The research method in this article is literature review. Although an extensive literature review cannot be carried out due to limitations of various constraints, a large amount of literature has been reviewed and provided, including those published by Emerald Insight, Elsevier, JStor, EBSCOhost, Google Schoolar, SSRN, Research Gate, Taylor and Francis and some online journal articles.

The keywords used to search the literature are financial literacy, risk tolerance and investment intentions. The literature search results are then summarized, tabulated, and analysed using a workbook so that it can provide a conceptual framework

Results and Findings

Financial Literacy and Investment Intentions

Many researchers have defined financial literacy in their own words, Servon and Kaestner (2008) define it as a person's ability to understand and utilize financial concepts. Individuals have a high level of financial literacy understand compound interest, (Lusardi and Mitchell, 2011) the time value of money, (Agarwalla *et al.*, 2013) and participate in formal financial markets and stock markets (Klapper *et al.*, 2012; Lusardi *et al.*, 2009). Several studies have revealed financial literacy interventions in individual financial decision-making processes. The researchers revealed that the biggest problem that causes a person to stay away from investment is a lack of financial knowledge (Jureviciene and Jermakova, 2012). The study found that people who have financial literacy and know the difference between mutual funds and stocks are willing to take risks during the investment decision making process. People whose financial literacy is low in regard to the stock market, do not want to take risks (Sabri, 2016).

Individuals who have financial literacy participate in risk investments (Van Rooij *et al.*, 2007). Households with little knowledge make poor investment decisions (Lusardi and Mitchell, 2007). The issue of financial literacy is less prevalent in developing countries. Studies show because of the unconsciousness of financial products, most people in developing countries do not invest in financial products (Honohan, 2008). Lusardi (2004) found that there was a marked increase in total net worth and financial wealth that was seen after parents were given financial seminars at work.

Financial Literacy and Risk Tolerance

Grable and Joo (1999) state that financial knowledge is one of the most important factors for predicting risk tolerance and incorporating that factor into a risk tolerance regression model, causing demographic factors to be less important. Likewise, Grable (2000) also found that the combination of financial knowledge, education, income, and employment was the biggest influence on risk tolerance in everyday money matters.

The relationship between financial literacy and risk tolerance has been proven in previous studies (Grable and Joo, 1999, 2000, 2004; Grable, 2000; Frijns *et al.*, 2008; Grable and Roszkowski, 2008; Gibson *et al.*, 2013). Frijns *et al.*, (2008) examined the effect of self-valued financial expertise on portfolio choices. They found that individuals who valued themselves low in terms of financial expertise tended to allocate their funds into less risky assets. Beal and Delpachitra (2003) in their study of financial literacy of Australian students found that participants who are low risk adverse (more risk tolerant) are usually those who have higher financial knowledge and skills. Furthermore, in his review of risk tolerance, Grable (2008) reviewed 125 relevant studies from 1960 to 2006 and also conveyed a high level of support for the relationship between financial knowledge and financial risk tolerance.

Risk Tolerance and Investment Intentions

Kiev (2002) described risk as one of the most important factors related to investment behaviour. The ability to adapt to risk and maintain a certain level of risk even when under pressure to make large losses is what makes an investor successful. Meanwhile financial risk is usually assumed to be a function of the possible return distribution. The greater the variance, the greater the risk (Olsen, 2008). Tolerance of risk is one of the characteristics most needed by an investor if he wants to succeed.

Financial theory assumes that investors think logically to increase their capital and pay attention to financial makers. Investors when choosing investments, will compare the risks and returns obtained with other potential investments they can make. The level of risk that investors are willing to tolerate depends on their mental condition and characteristics. However, a logical investor, if faced with investments of the same risk, will not opt for lower output. It is different from the general paradigm in classical financial theory which notes that decision makers have complete rational behaviour and maximize their profits. Studies conducted in the area of financial behaviour show that human decision making is not a fully rational process which considers all information. Decision makers use emotions which can lead to decisions that are not optimal. Lachanse and Tang (2012) examined the variable of trust in financial advisors. It is said that trusting financial advisors is fundamentally different from trusting an individual. Trust in financial advisors is closely related to age and willingness to take investment risks. While the willingness to take investment risks is related to risk aversion, it might also reflect trust.

According to Hanna and Chen (1997), profit or loss on investment and the increase or decrease in wealth has a positive relationship with risky investment decisions. In addition, Roszkowski and Davey (2010) state that financial risk tolerance reduces investor frustration and increases confidence in making better financial decisions. Likewise, investors assess the expected risk and return on investment according to their preferences. However, their risk perception as related to investment decisions still depends on previous financial investment experiences that make losses and profits (Corter and Chen (2006); Byrne (2005)).

Conclusion

Based on Lusardi's (2004) research, it is known that the increase in total net wealth and financial wealth occurs after parents are given financial seminars at work. Conversely, poor investment decisions occur because households have little knowledge (Lusardi and Mitchell, 2007). Thus, it can be concluded that financial literacy has a positive effect on investment intentions.

The biggest problem that causes a person to stay away from investment is a lack of financial knowledge (Jureviciene and Jermakova, 2012). A study conducted by Sabri (2016) revealed that people who have financial literacy and know the difference between mutual funds and stocks willing are to take risks during the investment decision making process. This means that the more financial knowledge someone has, the higher the risk tolerance.

The general paradigm in classical financial theory states that decision makers have rational behaviour and are after the maximization their profits. This is contrary to the theory of financial behaviour, because decision makers use emotions that can lead to decisions that are irrational and less than optimal. Pak and Mahmood (2012) confirm that investors will not behave rationally in all situations. For this reason, financial advisors must make personal characteristics and risk tolerance factors in providing advice to their clients. It can be concluded that risk tolerance affects investment intentions.

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