Financial Literacy and the Limits of Financial Decision-Making

Edited by

Tina Harrison

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Introduction

Tina Harrison

The welfare of consumers and nations is heavily impacted by financial decisions. Yet, due to a variety of factors, consumers are often poorly informed and susceptible to making poor decisions that can have significant personal as well as societal consequences. The recent global financial crisis has served to highlight consumers' deficiencies in financial literacy and the need to enhance it.

The terms *financial literacy*, *financial knowledge*, and *financial capacity* are often used interchangeably. Financial literacy is defined as comprising two key elements: how well an individual can understand financial information and how well an individual can use financial information to manage his or her personal finances through both short-term decision-making and long-term financial planning (Huston, 2010; Remund, 2010). Hence, financial literacy assumes both knowledge and capacity and can be viewed as a finance-specific form of human capital (Fernandes et al., 2014). Recently, the term *financial capability* has emerged emphasising a shift in importance from financial knowledge and understanding to ability to manage personal finances.

Financial literacy is a global issue. In both well-developed and developing nations financial illiteracy is widespread (Atkinson and Messy, 2013; Lusardi and Mitchell, 2013). The contexts individuals face vary both across and within nations. For some, processes of de-regulation, pension reforms, and increased product complexity have placed greater responsibility on individuals to better understand financial products, to navigate financial landscapes and generally take increased responsibility for their own financial decisions and welfare. For others, financial literacy serves as a more fundamental means of achieving inclusion in mainstream financial markets and protection from vulnerability and abuse.

International comparative research notes that financial illiteracy is more severe among key demographic groups (Lusardi and Mitchell, 2011a), including low-income households, ethnic minorities, and the less educated in general. Persistent international differences have also been found according to gender; in most cases women are found to be less financially knowledgeable than men. Age patterns are also notable. Lusardi and Mitchell (2011a) observe that financial knowledge follows an inverted U-shaped curve: the lowest financial knowledge is found among the younger and older ages peaking among those in middle age, possibly reflecting patterns of experience and use of financial products throughout the life course.

The case for financial literacy is well made in research evidence. Consumers who are better informed and educated about financial matters have been shown to make better financial decisions. Individuals possessing greater numeracy and financial literacy are more likely to participate in financial markets (Yoong, 2011) and are more likely to plan for retirement and accumulate more wealth (Lusardi and Mitchell, 2011b). By contrast, individuals and households with low levels of financial literacy are less likely to plan for retirement, are more likely to have poor borrowing behaviour, are more likely to incur higher fees and use higher cost methods of borrowing (Lusardi and Tufano, 2009), are more likely to default on mortgage payments (Gerardi et al., 2010), and are at greater susceptibility to fraud and abuse.

A key challenge is how to increase effective levels of financial literacy in order to achieve better capability in financial management. Governments and policymakers have embraced financial education programmes as a means of addressing financial literacy. The OECD (2015) observes that almost 60 counties in 2015 were engaged in implementing national strategies on financial education, compared with just a handful in 2009.

Despite the international attention to financial education, research is inconclusive about the impact of such interventions on financial outcomes (Gerardi et al., 2010) and reveals a complex relationship between financial literacy, experience, and capability (Devlin, 2011). A meta-analysis of over 200 studies carried out in the United States (Fernandes et al., 2014) observes that whilst financial education programmes did improve longer term financial behaviour, the impact was negligible and the effect decreased over time. However, the study highlights a role for 'just in time' financial education. Clearly a one-size-fits-all approach is unlikely to be effective. Financial education is not a value-free curriculum and should take account of the social context in which it is

delivered (Brimble and Blue, 2013). Hence, there is a need to better understand the complex relationships between contexts, interventions, and outcomes.

Set against this context, this book draws together a range of studies from the *Journal of Financial Services Marketing* that shed light on financial literacy and the limits of financial decision-making. The articles in this collection take account of the following factors that exert an impact on financial literacy and effective financial decision-making: (1) individual-level cognitive and social factors affecting understanding of financial matters and financial capability; (2) firm-level factors relating particularly to the marketing mechanisms that support, or inhibit, effective financial decisions and choices, such as advertising and the behaviour of financial experts or advisers; and (3) macro-level factors such as national financial education programmes and regulatory or structural processes aimed at supporting and protecting consumers.

The first three articles demonstrate the limits of consumers in making rational decisions and the tendency to oversimplify decision criteria. Hooman Estelami (Chapter 1) demonstrates that knowledge of financial matters is necessary but not sufficient on its own to ensure that individuals are able to make rational financial decisions. Drawing on empirical evidence from behavioural science and cognitive psychology, Estelami discusses how suboptimal decision styles often result from the basic and inherent limitations hard-wired into the human cognitive and neurological systems. The article profiles five decision patterns which account for a range of suboptimal financial decisions by consumers and highlights the impact of each decision style on decision-making behaviour. A possible explanation for the lack of apparent effectiveness of financial literacy programmes may be the failure to acknowledge or counter these forces.

Sanjay Kumar Mishra and Manoj Kumar (Chapter 2) demonstrate the impact of subjective knowledge (i.e. perceived knowledge as opposed to actual objective knowledge) on information searching and involvement in the purchase decision process of mutual funds. They find that investors who perceive themselves as highly knowledgeable perceive the purchase of mutual funds to be less risky, and are motivated to actively engage in investment decisions, whereas investors who perceive themselves as less knowledgeable perceive the purchase of mutual funds as more risky, and are motivated to remain passive during investment decisions. High perceived knowledge can lead to overconfidence which has been shown in other studies to lead to self-regulation failure and greater risk-taking (Chu et al., 2012).

In the context of socially responsible investing decisions, Jonas Nilsson, Anna-Carin Nordvall and Sofia Isberg (Chapter 3) reveal how use of information sources depends on consumer knowledge of the information. While involved and knowledgeable consumers generally searched for more information than less involved and knowledgeable consumers, different types of involvement and perceived knowledge were associated with different search behaviours. More financially involved and knowledgeable investors tended to exhibit information search processes that focused on financial aspects of the mutual fund, whereas investors who were more involved and knowledgeable about social, environmental, and ethical issues searched more for such information. The findings of Nilsson et al. and Mishra and Kumar suggest that investors are drawn to search for and use information that they are most likely to understand (and therefore can process), rather than attempt to fill knowledge gaps.

The next three articles (Chapter 4–6) highlight the ways in which advertising can influence consumers' information processing and effective decision-making through the use of ad disclosures (disclaimers). The use of ad disclosures is assumed to enhance the use of advertising as an information source by serving to reduce the information-processing burden, highlighting salient information, and warning of potential risks, thus leading to more informed consumer choices. However, the true effects of ad disclosures are largely untested. Whilst ad disclosures are intended to enhance information provision and aid information processing, they may potentially lead to unintended consequences.

A key informational cue often communicated to investors in advertising is past performance. However, past performance is generally understood to be a poor predictor of future returns, and firms must provide such disclaimers in their promotional material to inform potential investors. Using an eye tracking experiment, Andreas Hüsser and Werner Wirth (Chapter 4) demonstrate that disclaimers relating to past performance are actually ineffective. Investors seem to believe in the persistence of past performance and are prone to be drawn to it as an informational cue, thus potentially leading to suboptimal decisions.

In a more nuanced study of the impact of ad disclosures, Taejun (David) Lee, TaiWoong Yun and Kwang Seok Han (Chapter 5) show that the effect of ad disclosures depends on certain psychological predispositions. Distinguishing between promotion-focused investors (individuals who are motivated to achieve positive outcomes) and prevention-focused investors (individuals who are motivated to avoid negative outcomes), they find that investors with a promotion focus

evaluated advertisements without disclosures more positively, whereas investors with a prevention focus preferred advertisements with disclosures. Hence, psychological predisposition can serve as a filter to process advertising claims and can lead to selective information use.

In the final study of ad disclosures, Alex Wang (Chapter 6) takes into account the influence of socialisation (prior experience of use) and processing (message involvement and motivation to process disclosures) on college students' comprehension of disclosures in credit card advertisements. He finds that whilst processing may enhance understanding of the disclosures, socialisation may have an inverse and negative effect. The study also reveals that, despite having more experience of credit cards, female students may be more susceptible to ignoring disclosures. This suggests that experience (and possibly habit formation) may override the effects of potentially useful disclosures.

A possible explanation may be found in the interplay between rationality and irrationality, as discussed in the next article. Na Shen (Chapter 7) provides a detailed review of the literature to understand the extent to which credit card consumers make rational decisions, and the impact of financial literacy, cognitive ability, financial knowledge and financial education on credit card decisions and behaviour. The review suggests that consumer rationality and irrationality are equally possible in relation to consumer credit card decisions and behaviour. Moreover, irrationality creates the potential, if not managed appropriately, for credit card issuers to exploit the limitations of consumers, a situation that can be improved by financial literacy. James Peltier, Nadia Pomirleanu, Michael Endres and Ereni Markos (Chapter 8) take account of a range of psycho-social variables that impact the acquisition of credit cards by college students and credit card debt. They show that compulsivity, impulsivity, financial anxiety, social status and external locus of control lead to more credit card usage, whereas parental involvement leads to lower balances.

Financial literacy may impact decisions on borrowing and investing differently. As a comparison the following two articles specifically explore the factors influencing investment decisions and behaviours. Kang Li Lim, Geoffrey Soutar and Julie Lee (Chapter 9) find that product knowledge and product involvement have the greatest impact on intentions to invest in the stock market. Perceived risk was found to have a mediating effect on intentions to invest, whereas perceived uncertainty did not, emphasising the importance of viewing risk and uncertainty as separate constructs. Allan Lee, Yingzi Yu and Kenneth F. Hyde (Chapter 10) identify the five key factors influencing

consumer choice of retirement investment fund in the context of an auto-enrolment retirement regime: attitude to financial risk; perceived time to retirement; advice from family, friends and colleagues; information from providers and the media; and knowledge of investing. Despite the importance of retirement saving, the study suggests that choice of retirement investment fund is a low-effort decision for many people, and there is a tendency to opt for the default fund. These findings are consistent with other research that suggests consumers engage in more extended information search for simple financial products than for complex financial products.

Most studies of financial literacy are largely based on the assumption that individuals make their own independent financial decisions. In many cases, though, individuals delegate those decisions to a financial expert – typically a financial adviser. Decision delegation can alleviate the stress associated with making a decision, minimising the need for mental effort (Broniarczyk and Griffin, 2014). Financial advisers use their professional skills to reduce uncertainty, to advise of the risks and make expert-supported recommendations. Expert financial advice, thus serves as a substitute for lack of consumer financial knowledge. Consumers who delegate a financial decision to a financial expert usually do so in the expectation that it will lead to a better financial outcome. However, despite expert knowledge, financial advisers are not immune to the inherent cognitive limitations and biases that affect individuals.

The next two articles specifically highlight potential gender bias or gender stereotyping in financial adviser behaviour. A number of studies have separately confirmed gender-related differences in risk-aversion behaviour and investment behaviour (Charness and Gneezy, 2010). The studies generally show that women are more risk averse than men, and that men exhibit overconfident behaviour. The literature also notes that advisors have a tendency to tailor their approach according to customer gender. Diane Halstead, Michael A Jones, Vance P Lesseig and Thomas I Smythe (Chapter 11) find that customer orientation of financial advisers varies across gender, income, and company type. Female advisers have significantly higher customer orientation levels than male advisers. Advisers earning the least amount had lower levels of customer orientation and advisers working for brokerage and security firms reported slightly higher customer orientation than advisers working for banks or insurance companies.

Inga-Lill Söderberg's research (Chapter 12) finds evidence that advisers assess their customers differently according to risk tolerance and

customer financial literacy depending not only on customer gender, but also on adviser gender. Thus, the gender of the financial adviser may influence the way in which information and advice is framed, suggesting possible gender stereotyping of advice. These results, and the results of the study by Halstead et al., suggest a need to educate advisers as well as consumers of the effects of biases on effective decision-making.

A key concern for governments and policymakers is how to address financial literacy and develop financial education programmes that drive impact. In the context of Australia, Andrew Worthington (Chapter 13) considers the design and structure of financial literacy programmes. The article discusses the range of financial literacy programmes in Australia aimed at increasing the level of financial literacy across the population as a whole, as well as in specific groups, set in place by government, industry, community and workplace initiatives. The article provides a considered critique of the process of measuring, assessing and understanding financial literacy and the purpose, design and evaluation of the financial literacy programmes in place and concludes that there is a need to agree a suitable framework and method for the assessment of financial literacy programme design and execution.

A criticism of many financial education programmes is that they only address knowledge and understanding rather than capability. Harsha Jariwala and Mahendra Sharma (Chapter 14) show that a combination of knowledge and capacity can be effective in driving positive long-term financial behaviours if targeted appropriately. The study evaluates the behavioural outcomes of financial education workshops among a specific sub-population of women in India. The workshops provided a combination of financial understanding and identification of financial opportunities and consequences. This targeted 'just-in-time' financial education resulted in positive effects on the participants some months afterwards in terms of managing cash, credit, savings and investment activities.

Notwithstanding the positive impact of financial literacy, the final article in this collection warns that financial literacy may not sufficiently inoculate investors from persuasion or social engineering tactics increasingly used to secure investment in fraudulent schemes. Jacqueline Drew and Cassandra Cross (Chapter 15) use the PREY (Profiled, Relational, Exploitable, and Yielding) model to capture the psychological tactics used by fraud perpetrators to influence the thoughts and decision-making processes of individuals. The article suggests that financial education programmes should include education on social engineering and persuasion techniques to protect individuals from fraudulent schemes.

Whilst there has been considerable attention to financial literacy, it is also acknowledged that there is still much to be done to understand financial literacy and to improve it. The articles in this collection suggest fruitful avenues for further research in this domain. Research into the impact of financial education programmes clearly needs to take account of the inherent cognitive limits of individuals in understanding and processing financial information, as well as the way in which that knowledge can be shaped and influenced by message framing through the effects of marketing and advertising. Consistent with the definition of financial literacy as comprising both knowledge and capability, financial education programmes need to focus not only on building knowledge and understanding but providing opportunities to develop capacity in financial management.

There is also a need to explore how financial literacy develops over the life course and through socialisation and experience of financial products. This may lead to better targeted financial education throughout the lifecycle. There is also scope to consider the role of financial education at point-of-sale to facilitate effective financial decisions and also throughout the life of complex products (such as pensions and longer term investments) to ensure effective long-term financial management.

Finally, there is the need to consider financial literacy in relation to different types of financial products. Many studies of financial literacy either focus narrowly on a specific financial product or consider financial services in a general sense. Financial services embrace a range of products from simple to complex and from short-term to long-term. The demands made on individuals in terms of cognitive capacity are very likely to differ across the range of products. Hence, there is a need for a more nuanced understanding within and across different product types, which may have implications for targeted financial education programmes.

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Cognitive Drivers of Suboptimal Financial Decisions: Implications for Financial Literacy Campaigns

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Introduction

In the past decade, there has been notable accumulation of evidence suggesting that many households have considerable difficulty navigating their financial path. For example, the national savings rate in the United States has become negative, resulting in growing consumer debt and challenging the financial well-being of the population. Furthermore, since the mid-1990s the bankruptcy rates have nearly doubled in the United States, and account delinquencies for credit cards and home mortgages have systematically grown. Interestingly, these trends have been witnessed at a time when new marketing regulations have been proactively introduced to the financial services sector, with the objective of better protecting the consumer from deceptive marketing practices and reducing households' financial hardships.[1–4] During the same time period, an increased focus on the development and assessment of financial literacy programmes has also been witnessed.[5,6]

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Although financial literacy programmes continue to counter consumers' shortage of financial knowledge, assessing the effectiveness of these programmes has been an empirical challenge. The degree to which various programmes help improve consumers' financial decisions is often difficult to measure.[5,6] Empirical evidence from behavioural economics and cognitive psychology suggests that suboptimal financial decisions are not limited to the financially naïve, and are regularly exhibited by even the most financially educated individuals. It can therefore be argued, that the possession of knowledge on financial matters is not a sufficient condition for ensuring that individuals are able to make rational financial decisions.

In this paper we will examine how suboptimal decision styles exhibited by consumers often result from basic limitations of the human cognitive system and the hardwiring of the human neurological system. Owing to specific limitations of human cognitive abilities, the resulting decision styles often span the socio-economic and educational spectrum and present significant challenges to financial literacy programmes, which not only would have to provide basic financial know-how to consumers, but would also have to re-programme the consumer mind and de-programme instinctive suboptimal responses to financial matters. Drawing from findings in cognitive psychology and behavioural economics, limitations in consumer financial decisions will be identified, and countermeasures from both regulatory and consumer literacy perspectives will be discussed.

Suboptimal patterns of financial decision making

Financial decision behaviour has been a focus of enquiry by economists, psychologists, marketers and public policy professionals for decades.[7–10] Many of these inquiries have often helped identify predictable patterns of decision making which defy rational economic thinking and at times challenge the financial well-being of individuals. As will be discussed below, these patterns of behaviour can often be traced to the limitations of the cognitive system and the inability of the human brain to cope with the complexity of information presented in most financial decision scenarios. Interestingly, many of these effects have been replicated across population groups and have been found to be equally true for individuals with formal financial training as they are for the financially naïve. As a result, their existence questions the essential hypothesis that financial education alone is the key to preventing poor financial decisions. Their existence also highlights the need for developing financial

literacy programmes that go beyond simply providing consumers with basic financial information. From this perspective, financial literacy programmes need to take into account the instinctive responses of the human brain and attempt to de-programme consumers' irrational and suboptimal financial decision styles. Below, five of the most prominent of these financial decision styles are discussed.

Hyperbolic discounting

One of the essential considerations in financial decision making is the recognition of the time value of money. Money received today is more valuable than money received tomorrow or years from now. Although consumers generally recognise this principle, the discount rates used to conduct trade-offs between immediate access to funds and future access has been found to systematically vary from the interest rates used in the financial markets, reflecting what is referred to as a hyperbolic discount function.[11–13] This principle was demonstrated in several classic studies by Strotz,[14] and Lowenstein and Thaler.[7] Using systematic experiments, in these studies, individuals were asked to specify what amount of money they would be willing to receive today, instead of receiving a pre-determined amount in the future. By systematically varying the amount of money destined to be received in the future and the length of time before the payment would be received, as well as other factors, these researchers have been able to plot the discount function used by each individual in conducting such trade-offs.

The resulting discount rates computed using a discounting formula have been found to be asymmetric such that consumers tend to associate very high discount rates with short-term delays in receiving funds, and very low discount rates with distant payments. In other words, consumers would forego a considerable proportion of the future money to gain immediate access to it, if the time delay is short (for example, days or weeks), whereas for distant events (for example, months or years) the discount rates applied are comparatively much lower. A related study conducted by Benzion *et al*[11] replicated the effects with highly skilled finance students in Israel. Similar results have also been replicated among business professionals in the United States[12] and question the underlying premise that financial education would eliminate such a biased approach to evaluating the time value of money.

Evidence for consumer behaviour consistent with hyperbolic discounting is abundant in financial markets. The explosive use of short-term lending such as revolving credit products (for example, credit

cards, home equity lines of credit), which tap into consumers' desire to gain immediate access to funds, is partially a result of hyperbolic discounting. In recent years, financial services marketers have recognised and effectively capitalised on this phenomenon. For example, tax accounting firms offer their clients immediate access to tax refunds – less administrative and processing fees – upon electronic filing of the taxes. The alternative would be for the client to await the typical 6–8-week delay in receiving the refund. Millions of individuals have over the years used refund acceleration services, not realising that the discount rate implied by the reduced amount of payment (resulting from the administrative fees) often significantly exceeds interest rates charged by most credit card companies and other short-term lenders. Investigations by independent consumer protection organisations have found that in some cases the implied interest rates are well over 100 per cent, and new regulations and punitive measures have in recent years gone into effect to curb this practice.[15,16]

Short-term memory overload

The human memory system is known to consist of two main memory banks where information is stored: short-term memory and long-term memory. Long-term memory is where factual information such as one's name, address and process control algorithms for problem solving are stored. In general, it is believed that human long-term memory has no specific capacity limitations and stored information does not expire. Short-term memory, on the other hand, is where transitional and non-permanent information is stored for temporary use. Short-term memory is for example used when one conducts multi-digit mental multiplication, where the intermediate results of the computations (for example, carrying over of the digits, results of single-digit additions) are stored.[17–19] Short-term memory is heavily relied on when individuals are asked to make complex decisions. However, the number of items that the short-term memory system can hold at any one point of time is approximated to be seven, and the length of time for which the information is available has been determined to be about 10 seconds.[20] These limitations in the human short-term memory system have detrimental effects on how consumers interact with financial services offers in the marketplace, and the quality of decisions arriving from these interactions. This is because financial products and services are often complex and multi-dimensional. For example, even commoditised financial products such as property and casualty insurance policies, credit card offers or home mortgages may each have dozens of attributes which

need to be considered by consumers when making related decisions. For example, a home mortgage offer includes information on the interest rate, the fixed or adjustable form of the rate, the lock-in period, processing fees, origination fees, escrow account requirements, late payment fees, pre-payment penalties and other relevant information such as the proximity of the mortgage company's offices, and the company name. Faced with a number of such alternatives, the threshold level of seven items of information is easily exceeded, and as a result, many of the computations, attribute comparisons and cognitive processes that are required for arriving at an optimal and informed financial decision may not take place.[20–22]

Experimental studies that have examined the physiological effects of such evaluations have found a heightened level of stress, as reflected by indicators such as increased blood pressure, rising pulse rate and slow response times associated with the evaluation of complex numeric and financial offers.[21,23,24] The result is that in order to reduce stress, consumers often fail to consider all the relevant attributes, and by doing so, they may ignore essential facts and arrive at suboptimal decisions that violate rational standards of financial decision making. For example, when facing an array of mortgage choices, a homebuyer may choose to focus on the interest rate and the company name, and ignore the processing fees, pre-payment penalties and other administrative charges that are essential attributes of a mortgage product.

Attribute anchoring

A consequence of the capacity limitations of short-term memory is the adoption of an information processing strategy by consumers, which focuses their attention on only a subset of the available information, and often on a single attribute. This phenomenon occurs when consumers form an initial evaluation by examining what they consider the most important attribute of the product (anchoring) and then proceed to examine the remaining attributes and adjust their original evaluation accordingly (adjustment). For example, in evaluating an automobile loan, the consumer may focus his/her attention on the monthly payments to form an initial impression (anchor) and then adjust his/her perceptions based on the number of payments or the down payment (adjustment). The anchoring and adjustment strategy helps individuals reduce the cognitive stress associated with complex decisions. However, by using this cognitive strategy, the original anchor has been found to have a dominant effect on the decision outcome and the subsequent adjustments are often insufficient to objectively account for the effects

of the non-anchor attributes.[25,26] The net effect is a decision outcome that may be highly suboptimal.

The anchoring and adjustment phenomenon has been found to be persistent and highly influential in the decision outcomes of even the most financially savvy individuals. Studies by Slovic and his colleagues[27–29] and others have demonstrated that even highly trained financial experts such as financial advisors and stockbrokers tend to simplify their investment decisions by focusing on asset returns and adjusting their assessments based on perceptions of risk. By doing so, the return characteristics of the investment options over-weigh the risk characteristics. Interestingly, these simplifying patterns of decision making have been found to be replicated in other areas where expert judgements are needed, and tenure or years of experience have been found to have little effect on the quality of such judgements.[30,31]

Poor knowledge of risk levels

Risk is a basic element of decision making in most financial contexts. When investing in a security, one would have to consider the likelihood of the security gaining value in the future. Similarly, when purchasing insurance coverage, one would have to take into account the likelihood of the insured event actually taking place. In both cases, the decision maker would need to be aware of the risk levels associated with anticipated outcomes. However, consumers' awareness of risk levels is shown not only to be poor, but also to be systematically biased. Studies that have examined consumers' estimates of the likelihood of events taking place have found that the estimated probabilities are much higher than their actual levels for rare events, and much lower for frequent events.[29,31–33]

Consumers' inaccurate awareness of risk may create decision scenarios where deceptive and fear-based marketing can lead individuals to unsound economic decisions, especially in conditions where risk protection is the focus of the decision. Insurance and investment products would fit well into such scenarios. Current insurance regulations in the United States do not mandate insurers to reveal the underlying probabilities associated with the policies sold. Furthermore, the insurance departments of most states do not make such information available to the public and therefore prevent consumers from making informed decisions related to risk protection. This fact not only has implications on how regulatory bodies may need to change their own practices, but also may question whether current regulations require adequate levels of information to be disclosed to consumers, especially where risk-based

financial decisions need to be made. While consumers may over-purchase insurance coverage in certain categories of risk, they may be under-insured in more important categories, leaving both the industry and themselves exposed and vulnerable.[29]

Mental accounting

Although rational economic thinking would suggest that equal amounts of money should have equal value regardless of how they are obtained, research in psychology and behavioural economics has established that individuals tend to view money in different ways, as a function of the source of funds or where it is intended to be spent. Such labeling of money is referred to as 'mental accounting' and can have a significant influence on consumers' financial decisions.[34] A commonly recognised example of this relates to how consumers treat their yearly tax refunds, large windfall gains such as the winning of a lottery, or the collection of a large bonus check. Research has shown that when large lump sum amounts such as these are received by individuals, their spending behaviour no longer reflects a disciplined form of decision making, and often the received funds are spent on discretionary and non-essential items and rarely saved. As a result, such funds are often not channeled towards means that would ensure the long-term financial well-being of the individual such as the paying off of debt or the building up of retirement savings.[35]

A similar pattern of behaviour is exhibited when payments, rather than the receipt of money is involved. Consumers tend to categorise their spending into daily, monthly and yearly categories by maintaining separate mental accounts for such expenditures.[34,36,37] For example, daily expenditures may include the cost of lunch or transportation, monthly expenditures may include rent and utilities, and yearly expenditures may include the cost of vacations, the purchase of appliances or tuition payments. This categorisation scheme helps simplify consumers' financial decisions by associating each type of expenditure, with a specific mental account. Research on consumers' mental accounting strategies has, however, shown that short-term accounts (for example, daily expenditures) exhibit lower levels of price sensitivity than long-term accounts (for example, yearly expenditures). As a result, by framing a yearly expenditure as a daily expenditure consumers may be more likely to undertake such a spending.[22,36,37] This, for example, helps explain why many charities seek donors by quoting their requested donation amounts in terms of daily expenditures (for example, cost of a cup of coffee) rather than the equivalent lump sum yearly amount. Financial

services marketers have also found mental accounting to be an effective way to promote their products. For example, many term-life insurance policies are sold based on the cost per day of the policy rather than the equivalent yearly premiums. The categorisation of expenditures into mental accounts can have profound effects on the financial decisions made by individuals.

Countering suboptimal decisions through financial literacy programmes

In this section, we will examine the possible financial literacy initiatives that can be undertaken to combat the harmful effects of the decision patterns outlined above on consumers' financial decisions. A basic premise of this paper is that financial literacy is not strictly limited to pedagogical boundaries of consumer education, and can involve a broader range of changes in the consumer decision environment to ensure adequate focus on critical information for making sound financial decisions. As such, financial literacy programmes need to be developed in conjunction with regulations that require disclosures, which facilitate more educated financial decisions. In addition, given the powerful forces of the identified cognitive effects on individuals' financial behaviour, financial literacy programmes should expand beyond simple dissemination of information and attempt to de-programme consumers' impulsive and irrational decision behaviours in financial matters. This view is based on the observation that while many financial literacy programmes focus on improving consumers' knowledge of financial matters, building knowledge does not necessarily result in significantly better decisions.[5]

Financial literacy efforts to combat hyperbolic discounting

As outlined earlier, hyperbolic discounting effects have been observed even among individuals with years of formal financial education and experience. Therefore, focus needs to be given to efforts that deprogramme individuals' decision styles altogether. Financial literacy campaigns need to educate consumers on the important financial indicators they need to look for when dealing with the time-value of money. This often translates into terms such as the annual percentage rate (APR) in credit products, but may also include additional decision elements such as upfront expenses (for example, down payment), end-of contract fees (for example, balloon payments) and administrative charges. In order to ensure that consumers have proper base of comparison for interest

rates, they need to be educated on where to obtain relevant and up-to-date interest rate information and what forms of interest rates (for example, primary rate versus 10-year treasury rates) most relate to the types of financial decisions facing them (for example, credit card borrowing versus securing a mortgage).

From a consumer communications perspective, the key elements of credit contracts need to be clearly disclosed and effectively communicated in marketing material. Regulations such as the Truth in Lending Act, for example, attempt to do this by requiring the disclosure of the APR in credit contracts and promotional material. Disclosures in this context may also be intended to de-programme consumers' typical biases resulting from hyperbolic discounting effects. For example, in the credit card domain, some of the proposed changes to regulations in the United States would require credit card companies to disclose the number of years it would take for the cardholder to pay off the balance if only minimum required payments are made.[38] This would allow cardholders to appreciate the long stretch of time they would be obligated to make payments for the use of credit – a pattern not evident to most individuals because of hyperbolic discounting and the inability to conduct the required computations. The intention behind such a disclosure is therefore to alert cardholders that making a small payment would entangle them in a long-term financial obligation, which may far exceed the life span for the products purchased using the credit card. Other similar regulations may be needed for other forms of financial services involving credit products to make sure consumers are aware of the long-term consequences of their borrowing decisions.

Financial literacy programmes need to combat hyperbolic discounting by making consumers aware of their needs for savings and curb their excessive use of credit products. These efforts would need to inform individual consumers of the effects of taking on different levels of debt and prescribed levels of yearly savings that are required to achieve specific retirement savings goals. Financial literacy initiatives may also utilise simulations and experience-based exercises that help individuals appreciate the need for controlling their use of credit. This may, for example, involve the use of spreadsheets to simulate final retirement savings, based on an individual's lifetime credit use and savings behaviour. Other numeric exercises that help individuals recognise the long-term financial effects of credit use, and appreciate the long-term benefits of savings would fit into this category of financial literacy activities. More explicit and direct actions to prevent individuals from excessive use of

credit and encourage savings may also have merit in specific cases. For example, many employers require their workers to contribute a certain proportion of their earnings to retirement accounts, and some match these savings to further motivate individuals to improve their long-term savings behaviour.

Financial literacy efforts to combat short-term memory overload and anchoring effects

Financial literacy efforts combating the effects of short-term memory limitations and anchoring effects are challenged by the abundance of information in consumers' financial decision environments. Often this information is provided to consumers because of the regulations requiring specific disclosures in marketing material and consumer communications. The net effect of these requirements is a decision environment which is rich in information, but at the same time challenges consumers that may not be able to focus on the most critical decision elements. Financial literacy campaigns therefore need to help consumers sort through the variety of decision variables facing them and train them on specific items of information that are most diagnostic. For example, in choosing between different retail banks, consumers need to know that certain aspects of the deposit contracts – such as monthly maintenance fees, minimum required balance and check-writing charges – need to be carefully considered when comparing different banks. In addition, these efforts need to make consumers aware that they can only process so many pieces of information, and that marketing material often are rich in information that cannot be processed without dedicating sufficient time to make a decision.

Financial literacy programmes in partnership with regulatory bodies need to make the most diagnostic pieces of information salient in marketing communications. This is because, the complexity of financial services offers may enable financial services providers to introduce additional information to the consumers' decision environment, some of which may be non-diagnostic and thereby exhaust consumers' short-term memory capacity, and encourage an anchor-based decision style. Financial literacy programmes need to educate consumers to differentiate diagnostic from non-diagnostic information, and regulations need to ensure that marketers do not overwhelm their consumer communications with non-diagnostic information. Financial literacy advocates therefore need to work closely with regulators to ensure that consumers are not bombarded with unnecessary and non-diagnostic information in their financial decisions.

Financial literacy initiatives can prevent short-term memory overload and anchoring effects by encouraging consumers to use decision approaches that reduce mental arithmetic and short-term memory overload. These programmes should encourage individuals to utilise systematic mechanisms for evaluating their financial options, such as attribute comparison tables to facilitate the comparison of the attributes of competing offers. Decision tools on the Internet and software products that conduct the necessary comparisons among complex financial services offers may also be fitting in this context.

Financial literacy efforts combating inaccurate risk perceptions

The systematic errors that exist in consumers' risk perceptions present significant challenges to financial literacy programmes, especially in dealing with insurance products. In general, this is an area where regulations have not necessarily facilitated the means for creating a more informed body of consumers. This is because insurance regulations in most states currently do not require the disclosure of accident probabilities in insurance advertising and consumer communications.[3,39] The current regulations, for the most part only prevent insurers from exaggerating the dangers of specific hazards – for example, by displaying images of catastrophes. Much needs to be done to educate the public on the risks facing them in a variety of contexts. Therefore, financial literacy initiatives must encourage consumers to consider the likelihood of accidents and catastrophes when purchasing insurance products. This unfortunately may have limited positive effect, and may even harm consumers, because in the absence of objective actuarial tables consumers will need to guess these probabilities, and any resulting inaccuracies will lead to excessive or insufficient coverage for specific categories of risk. Nevertheless, individuals must be encouraged to seek out this information, request objective data on risk and also be made aware of their tendency to over-estimate unlikely events, and under-estimate highly probable ones. Financial literacy campaigns must therefore work hand-in-hand with regulatory bodies to encourage insurers to disclose risk information based on which insurance premiums are set. This may allow consumers to have a more objective and realistic assessment of the risks facing them, and enable them to arrive at insurance purchase decisions that more accurately reflect the underlying risks. The risk information would also enable consumers to recognise areas where they may have less than optimal coverage and encourage the sale of insurance products, which provide such protection.

Financial literacy efforts may also need to focus on specifying for consumers what forms and levels of insurance coverage are needed. This would be similar to the insurance checkups conducted by agents on a periodic basis with their clients, but can also be facilitated through interactive web sites and by non-profit consumer-aid organisations. Furthermore, consumers' tendency to purchase excessive insurance coverage in certain risk categories and insufficient amounts in others can be de-programmed or challenged by both consumer education and legal means. In certain categories of risk, regulators and governmental agencies may need to consider taking steps to explicitly require insurance coverage in categories of insurance where the population is known to be at risk. For example, all states today require automobile insurance from all drivers, and flood insurance is required by mortgage companies in areas susceptible to flood. Consumer education programmes that help individuals appreciate the need for these products and other forms of insurance are therefore essential to this effort.

Financial literacy efforts combating mental accounting

The potentially harmful effects that mental accounting may have on consumers' financial decisions need to be addressed through consumer education and by enabling individuals to recognise their tendency to treat financial resources and income in a biased manner and as a function of where the money is sourced from. Therefore, financial literacy programmes need to help consumers appreciate the need to view money objectively and to reverse the effects of viewing funds as belonging to different mental buckets. Much of this training needs to take place in earlier life stages while individuals are young, and it should focus on developing the skills needed to exercise disciplined spending and thoughtful savings behaviour. Such efforts also need to alert individuals that a short-term perspective on spending, in the context of daily or monthly budgets, may not motivate savings for the long term. A need to view all spending using a standard and common timeframe is critical to this approach.

Financial literacy efforts also need to be coordinated with regulators to encourage marketers to not utilise short-term timeframes in communicating and framing their products and services. For example, financed and delayed payments, which allow consumers to make monthly payments over several months/years, should also clearly communicate the total dollar amount exchanged, rather than only the monthly payments. This form of communication would ensure that consumers

place the long-term timeframe in perspective when deciding among the different financing options. Financial literacy programmes should also help consumers objectively allocate their spending behaviour. Such initiatives would need to be undertaken in collaboration with consumer protection advocates and organisations that can help consumers gain a clearer picture of their short-term and long-term spending budgets. Debt consolidation services, financial planners and educators can have a central role in such an effort. In addition, the interactive means of the Internet can help provide individuals with a prescribed spending plan and identify where one might be misallocating one's expenditures.

In addition, financial literacy efforts may be needed to challenge and de-programme individuals' tendency to use mental budgets. Experience-based exercises to train individual consumers on the harmful effects of viewing financial decisions in terms of short-term mental budgets or windfall gains would be critical to this effort. These exercises could, for example, distinguish the long-term financial results of disciplined versus undisciplined spending of tax refunds, or show the improvements in retirement savings resulting from reductions in one's daily expenditures. Intervention at this level may also engage governmental and regulatory bodies that may be able to reverse the potentially harmful effects of mental accounting by mandating specific requirements in the communication of prices, financing options and cash flows to consumers.

Conclusion

The focus on consumer financial education has significantly increased in recent years. Although the measurement of the effectiveness of these programmes has been difficult to achieve,[6] it is expected that the delivery of financial literacy campaigns would enhance the quality of financial decisions made by consumers. However, the effectiveness of these programmes is not only challenged by the availability of resources and limits in programme reach, but also by the underlying consumer psychology and instinctive responses which persuade individuals to make suboptimal decisions, despite their best intentions and formal financial training.

The objective of this paper was to highlight the profound cognitive biases that exist in consumers' financial decisions and to provide a framework for the future development of financial literacy programmes. As pointed out earlier, these cognitive biases tend to present challenges to financial literacy campaigns, as they affect the decision styles of both

the financially naïve and the highly literate. Therefore, to ensure that individuals arrive at sound financial decisions, financial literacy programmes not only need to inform the public about the fundamentals of financial decision making, but also to modify human behaviour and re-programme instinctive responses. Such a task presents great challenges to how educators, consumer advocates and financial marketers interact with consumers. The five decision patterns discussed in this paper tend to have great influence on financial decision making and highlight the fact that the information processing strategies of the brain and its neurological characteristics often result in suboptimal decision behaviour which not only spans the socio-economic and educational spectrums, but also have been replicated in studies of animals' consumption decisions.[11,12,40,41]

It is hoped that this paper provides a helpful perspective in the development of financial literacy programmes. The identification of psychological phenomena that guide consumers' financial decisions is essential to the development of effective literacy programmes that counter the negative effects of biased and uninformed decision styles. Therefore, financial literacy advocates may need to undertake a formal audit of how effectively they are able to reprogramme consumer decision making and to formally test their results by examining actual decisions made by individuals who complete such programmes. A similar burden holds for regulatory organisations that desire improvements in consumer well-being and have a mandate to help individuals make better financial decisions. Regulatory requirements therefore not only need to be assessed in terms of their ability to help consumers in their financial decisions, but may also need to be examined in the context of financial literacy programmes. Much is also expected of our education system. The focus on financial literacy is especially appealing because as a society we spend a great amount of time educating our young to develop the essential skills to earn a living, yet we spend comparatively little or no time educating them to better manage their finances. Reversal of the harmful effects of cognitive biases in financial decision making through consumer financial literacy programmes must therefore become a basic requirement of the education system.

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2

A Comprehensive Model of Information Search and Processing Behaviour of Mutual Fund Investors

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Introduction

Understanding the investment behaviour, specifically information search and processing behaviour of mutual fund (MF) investors is a key to the effective marketing of MF schemes, and yet we have only limited understanding of it. The limited insights into the investment behaviour of MF investors are available from the existing studies dispersed across multiple domains of literature, viz., Traditional Finance, Behavioural Finance and Consumer Behaviour.

The fundamental normative model of investment behaviour in traditional finance considers only risk and return as crucial variables impacting the investors' buying behaviour. This model assumes that investors

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are rational utility maximizers (Markowitz, 1952; Tobin, 1965; Sharpe, 1994). In recent years, numerous behavioural finance studies have shown that investors are 'predictably irrational' and various kinds of behavioural biases (non-economic motives) influence their investment decision (Nagy and Obenberger, 1994; Odean, 1999; Shefrin, 2000; Barber and Odean, 2001; Arieley, 2008). As yet, behavioural finance research provides little insight into the causes of these behavioural biases. The studies in consumer behaviour literature have offered some insights into the factors that influence consumer behaviour (Nicosia, 1966; Howard and Sheth, 1969; Engel *et al.*, 1995). However, the context of existing consumer behaviour models is the purchase of tangible goods and not the purchase of intangible financial products like MFs. Hence, the available frameworks for comprehending the investment behaviour are not sufficient and have only limited applicability for the MF marketers.

In this study, therefore, a model is proposed to explain the impact of MF investors' subjective knowledge (SK), perceived purchase risk (PPR) and purchase decision involvement (PDI) on their investment behaviour (specifically, information search and processing behaviour). The proposed model is empirically validated through structural equation modelling of data collected from a survey of 268 MF investors.

The rest of this article is organized in the following way. In the next section, the existing literature is critically reviewed and summarized. Subsequent section proposes the new investment behaviour model. The hypotheses are also proposed in this section. In the section after that the design of the study is discussed. The section after that shows the study results. Conclusions based on the results of the study and its implications for MF marketers and policymakers are discussed after the 'Result' section. The penultimate section discusses the limitations of this research and possible scope of future research in this area. The final section concludes the study.

Literature review

Over the past two decades, MFs have been the focal point of an increasing number of research studies being conducted in the field of traditional finance. The basic research issues dealt with by the majority of these studies have been: performance evaluation of MF (Sharpe, 1965; Grinblatt and Titman, 1989; Malkiel, 1995a; Carhart *et al.*, 2002), assessment of market timing ability of fund managers and (Grant, 1977; Chang and Lewellen, 1984; Jiang, 2003) closed-end fund puzzle (Malkiel 1977, 1995b; Hardouvelis *et al.*, 1993; Pontiff 1995). There has, however, been

a dearth of studies undertaken specifically to understand the investment behaviour of MF investors (Wilcox, 2003). The research pertaining to investors' behaviour in traditional finance has not advanced much beyond the perspectives provided by the Markowitz (Markowitz, 1952) framework, where investors (assumed to be the rational utility maximizers) consider expected returns and risks of the investing avenues as the only crucial variables in taking their investment decisions (Tobin, 1965; Sharpe, 1994).

In recent years, numerous behavioural finance studies have shown that in reality investors are 'predictably irrational' and various kind of behavioural biases (non-economic motives) influence their investment decision (Nagy and Obenberger, 1994; Odean, 1999; Shefrin, 2000; Barber and Odean, 2001; Arieley, 2008). Specifically, the behavioural finance studies suggests that MF investors (i) chase past performance (Barber *et al.*, 2005); (ii) are reluctant to sell their losses (Kahneman and Tversky, 1979; Barber *et al.*, 2005); (iii) react differently to various forms of fund expenses (Barber *et al.*, 2005); and (iv) attribute successful outcomes to their own skill and blame unsuccessful outcome on bad luck (Shefrin, 2007). Further, a few studies have suggested that risk perception (Nosic and Weber, 2010) and investors knowledge (Curtis, 2004) is likely to be linked with the behavioural biases among investors. However, as yet behavioural finance research provides little insight into: (i) the causes of these behavioural biases; and (ii) the impact of behavioural biases on investor's decision-making process (Bailey *et al.*, 2011). Getting a clear answer to the above issues is of utmost significance for the marketers of MFs, given that shopping for financial instruments has become increasingly like shopping for any other consumer items (Wilcox, 2003), wherein prospective investors now have options to choose from a variety of financial instruments being offered to them, viz., Corporate debt and equity securities, Fixed deposits of companies and commercial banks, MF schemes, Unit-linked insurance products, Chit funds from the Non-bank finance companies and so on.

The studies in consumer behaviour literature have proposed various consumer behaviour models, which provide some insights into the factors that influence consumer behaviour (Nicosia, 1966; Howard and Sheth, 1969; Engel *et al.*, 1995). However, only three of these models have received adequate acclamation and recognition, viz., the models proposed by the (Nicosia, 1966; Howard and Sheth, 1969; Engel *et al.*, 1995). Nicosia (1966) was the first to propose a consumer behaviour model. The model focused on the conscious, deliberative decision-making behaviour of consumer. The model discusses the influence of

consumer knowledge and motivation on buying behaviour; however, it lacks specificity with respect to the linkages among these two constructs. Howard and Sheth (1969) proposed another model of consumer behaviour. Their model attempted to depict rational brand choice behaviour by buyers under conditions of incomplete information and limited abilities. The model identifies many of the variables influencing consumers and details how they interact with each other. One of the best examples of contemporary consumer behaviour models is probably the Engel–Blackwell–Minard model (Engel *et al.*, 1995), which was originally developed in 1968 by Engel–Kollat–Blackwell (Engel *et al.*, 1968) and has since been subjected to numerous revisions. This Engel–Kollat–Miniard model focuses on the level of consumer involvement, whereas emphasizing the buying decision process of consumers.

Although the above consumer behaviour models provide useful insights into the factors influencing the consumer behaviour, they still suffer from the following limitations. *First*, these models implicitly or explicitly acknowledge the impact of consumers' knowledge, PPR and involvement on their buying behaviour, but how these variables interact to impact the buying behaviour is not clearly stated. *Second*, the methods of measurement of these variables have not been clearly identified. *Third*, the level of parsimony in these models is low because of all encompassing intricate linkages among variables, and thus resulting in many conceptual overlaps among the elements of the models (Rau and Samiee, 1981). *Fourth*, these models cannot be easily validated (Foxall, 1981; Loudon and Bitta, 2002). *Fifth*, even though the above conceptual models are supported by large volume of empirical work, most of them have been advanced in the context of studying the purchase of tangible goods rather than intangible financial products.

MF schemes are intangible financial offerings (Lin and Lee, 2004) having characteristics which are different from tangible goods (Mishra and Kumar, 2011). The literature suggests considerable difference between tangible goods, intangible offerings and services (Hill, 1999). MF schemes as intangible financial offerings carry some distinct characteristics from the other intangible/tangible goods and services. *First*, buyers of the MF schemes have to predict the unknown realization of the market outcomes at the time of purchase (Strassl, 1986), as the value of investment is the right of ownership of subsequent benefits, as MF schemes are high credence products (Brady and Bourdeau, 2005). *Second*, the buyer may have to go through a complex decision-making process due to the available information about the MF schemes which, though abundant, is often not organized and comprehensible (Mishra and Kumar, 2011).

Third, the motive for investing in MF schemes may primarily be to increase the current and future monetary returns, which is different from that of the other intangible goods and services. The latter are primarily purchased for some consumption/functional purpose or to fulfil fantasies and satisfy emotion and vanity (Mishra and Kumar, 2011). Hence, there is a felt need among MF marketers and researchers for a specific model to understand the investment behaviour of MF investors.

Proposed comprehensive model of information search and processing behaviour of MF investors

A comprehensive model of information search and processing behaviour of MF investors is proposed in Figure 2.1. The causal hypothesised relationships between the constructs of the proposed model, argued on the basis of the existing studies, are described below. The model suggests that the MF investors' (i) SK negatively impacts their PPR; (ii) SK positively impacts their PDI; (iii) PPR negatively impacts their PDI; (iv) PDI positively impacts their depth of information search (DIS) and information processing behaviour (DIP); and (v) DIS positively impacts their DIP.

Impact of SK on PPR of MF investors

Knowledge has been found to influence all the phases in the decision process (Bettmann and Park, 1980) including the consumers evaluation of risk inherent in the purchase (Murray and Schacter, 1990). Researchers have distinguished objective knowledge (that is, what is actually stored

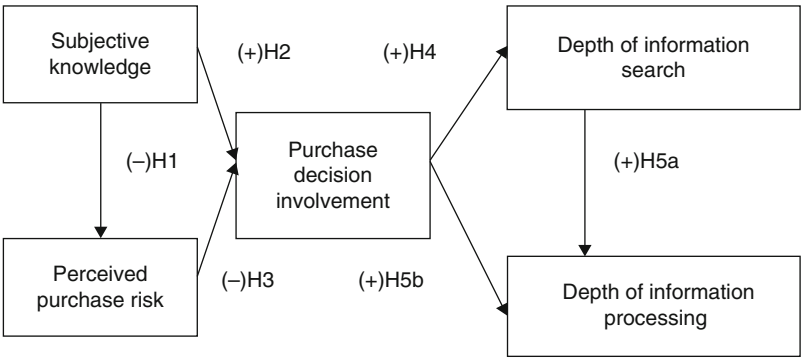

Figure 2.1 Proposed comprehensive model of information search and processing behaviour of MF investors

in memory) from SK (that is, what individuals perceive they know). It has been suggested that consumer SK is more related to self-confidence regarding decision making (Brucks, 1985) hence, is likely to influence consumer evaluation of risk with the purchase. In the consumer behaviour literature, Bauer (1960) introduced the concept of perceived risk. It is defined as an individual's subjective feeling of uncertainty that the consequence of potential purchase will be favourable (Cox, 1967; Cunningham, 1967). In the context of tangible goods, there is a consensus among researchers that SK negatively influences the PPR (Havlena and DeSarbo, 1991). However, there is a lack of studies that have investigated the above relationship in the context of intangible financial goods. On the basis of the above discussion, it is hypothesized that:

Hypothesis 1: MF investors' SK has a negative impact on their PPR.

Impact of SK on PDI of MF investors

Literature in consumer behaviour suggests that consumer knowledge and involvement are important constructs in understanding consumer behaviour (Howard, 1994; Huffman and Houston, 1993). PDI can be defined as the extent of interest and concern that a consumer brings to bear upon a purchase-decision task (Banwari, 1989). A few studies have empirically investigated the relationship between SK and PDI (Chang and Huang, 2002; Park and Moon, 2003; Lin and Chen, 2006). Studies suggest that: (i) consumers' product knowledge is positively associated with involvement (Park and Moon, 2003); and (ii) product involvement mediates the impact of product knowledge on purchase decision (Lin and Chen, 2006). On the basis of the above discussion, we posit the following hypothesis:

Hypothesis 2: MF investors' SK has a positive impact on their level of PDI.

Impact of PPR on PDI of MF investors

There seems to be consensus among researchers that PPR impacts PDI (Chaffee and McLeod, 1973; Rothschild, 1979; Laurent and Kapferer, 1985). However, researchers disagree with the direction of the impact of PPR on PDI. A few researchers argue that high PPR puts consumers in a distressed and anxious state, which in turn motivates them to engage in extensive problem-solving activity to resolve it (Engel *et al.*, 1995); hence, PPR is likely to positively impact PDI. Several empirical studies have been conducted to assess the veracity of the above theory and found mixed results. Although several studies have supported the above

theory, an equal number of studies have reported contradictory findings (Gemunden, 1985). Specifically, it has been suggested that during purchase of complex products that require high technical know-how and expertise, consumers are likely to be motivated to rely on few personal formal sources (Gemunden, 1985; Coleman *et al.*, 1995; Cho and Lee, 2006), rather than actively engaging in purchase and seeking information from multiple sources. Hence, it is likely that the impact of PPR on PDI is context specific. Particularly in the context of the purchase of complex products, consumers PPR will negatively impact consumers' motivation to engage with purchase decision, and hence their PDI.

Investment decisions, particularly investment in MF, is a complex task. This is owing to the fact that investors may have to go through a complex decision-making process because of the available information about the MF product which, though abundant, is not particularly organized and comprehensible (Mishra and Kumar, 2011). The above discussion conjectures that PPR will negatively impact the level of PDI. Therefore, we posit the following hypothesis:

Hypothesis 3: MF investors' PPR has a negative impact on their level of PDI.

Impact of PDI on the DIS by MF investors

Three widely recognized contemporary consumer behaviour models, that is, Nicosia (1966) model, Howard and Sheth (1969) model and Engel–Blackwell–Minard model (Engel *et al.*, 1995) consider consumer search for information as an important pre-purchase activity. PDI is likely to have a positive impact on the DIS. High PDI consumers are likely to use more than one source of information (Richins and Bloch, 1986; Alexander *et al.*, 1997) and will have a tendency to use these sources to a high extent in order to seek advanced information and process all relevant information in detail (Beatty and Smith, 1987; Gensch *et al.*, 1987). On the basis of the above discussion, we posit the following hypothesis:

Hypothesis 4: MF investors' PDI has a positive impact on their DIS.

Impact of DIS and PDI on the depth of information processing by MF investors

Information processing is an important pre-purchase activity, which includes identification of key attribute(s) for comparing the various brands of products to be purchased and comparison of the available brands on the basis of identified attributes.

The depth of information processing of MF investors is likely to be positively impacted by DIS and level of PDI. This is owing to the fact that high DIS positively impacts the attributes information available with the consumer at the time of evaluation of products/brands. Hence, with high DIS, consumers will bring a larger number of dimensions at the time of information processing (Johnson and Russo, 1984; Brucks, 1985), which will positively impact the depth of information processing.

Further, depth of information processing is also positively impacted by level of PDI. High PDI consumers have clearly articulated attributes to compare brands (Lee and Marlowe, 2003). They engage in extensive evaluation of attributes and products (Hansen, 2005). Further, they are likely to engage in a high degree of cognitive activity and will make strong efforts in evaluating and comparing products before reaching a reasoned decision (Dawar and Parker, 1994). On the basis of the above discussion, it is hypothesized that:

Hypothesis 5a: MF investors' DIS has a positive impact on their depth of information processing.

Hypothesis 5b: MF investors' PDI has a positive impact on their depth of information processing.

Design of the study

In order to test the proposed model on the sample of MF investors, a structured survey questionnaire was designed using the following stepwise procedure. First, in-depth personal interviews were conducted of five MF investors, who invested in at least one MF scheme within 1-month period before the interview date. The objective was to (i) trace the investment decision process of the participants; and (ii) draw insights into the key variables influencing the investment behaviour. A common set of variables that influenced their behaviour was identified as SK, PDI and perceived risk. Next, based on previous research instruments and the learnings from the first step, an initial draft of the questionnaire was developed. The content validity of the items used in the constructs was assessed by six professors and three managers associated with the MFs industry. The experts were asked to provide comments on content and understandability of the items included in the constructs. They were also asked to identify any of the scale items that were not truly measuring the constructs. The suggestions, as provided by the experts were incorporated to arrive at the second draft of the questionnaire. Finally, pilot testing of the questionnaire on a sample of 58 respondents

provided the final questionnaire that was subsequently used in the main survey of this study.

The quantitative data for model validation was collected via administration of above finalized questionnaire on a sample of MF investors who invested in at least one or more MF scheme(s) within 1-month period before the survey date and were based in the Jammu region of Jammu and Kashmir (India). The condition that individuals must have invested in one or more MF scheme(s) within 1-month period before the survey date was applied so as to more clearly measure their PPR, SK and PDI close to their purchase of MF schemes. As it was hard to reach the prospective sampling unit, a non-probability convenience sampling technique was used, wherein prospective respondents were targeted by going to localities where they were reasonably expected to gather. The local offices of the five Asset Management Companies (AMCs) located in Jammu region; Jammu and Kashmir (India) were identified for this purpose. Three methods were utilized to collect the data from the respondents. In the first case, respondents completed the questionnaire and returned it to the employee of the AMCs, which was then collected by the first researcher. In the second case, respondents completed the questionnaire and returned it to the first researcher while they were leaving the AMCs office. In the third case, the respondents filled the questionnaire outside the office of the AMCs. The survey was administered on 350 individuals. The total usable responses were 268 (76.57 per cent of the sample size), which forms the basis for the study.

The framing effect (that is, investment choices available to individual investor) during their investment decision was controlled in the study by the nature of sample itself. The study was confined to individual MF investors and institutional investors were excluded from the study (In India, a few categories of institutional investors are restricted from investing in certain MF schemes). These restrictions are not applicable to individual investors and hence each respondent had equal access to all investment choices available for investors in India.

Next, the constructs used in the study are discussed. The study constructs include SK, PPR, PDI, DIS and depth of information processing.

SK is defined as the MF investor's subjective assessment of perceived familiarity with the MFs (Brucks, 1985). For the measurement of SK, indicators were adopted from (Brucks, 1985; Moreau *et al.*, 2001). The indicators referred to 'respondent's perceived familiarity with MF schemes in comparison with other men and women' (SK1), 'respondent's perceived familiarity with MF schemes in comparison with friends' (SK2) and 'respondent's perceived familiarity with MF schemes in comparison with active investors of MF schemes' (SK3). Five-point Likert scale was used

to measure these three items of the constructs, wherein the respondents were asked to state their level of agreement with these statements.

PPR is defined as an individual's subjective feeling of uncertainty that the outcome of a potential purchase will be favourable (Cox, 1967; Cunningham, 1967). For the measurement of PPR, indicators were adopted from the measures used in accounting services (Garner and Garner, 1985) and banking services (Heaney and Goldsmith, 1999). The indicators that were incorporated referred to 'the likelihood that the agent(s) will mislead while purchasing MF scheme' (PPR1), 'the likelihood that there may be hidden charges while/after purchasing MF scheme' (PPR2), the likelihood that investment in certain MF schemes will have a negative consequence on future cash position' (PPR3), 'the likelihood that investment in certain MF schemes could lead to monetary loss' (PPR4). Five-point Likert scale was used to measure these four items of the constructs, wherein the respondents were asked to state the likelihood of the occurrence of the above said events, where one indicated not at all, and five indicated very much.

Level of PDI is defined as the extent to which a consumer puts physical and mental effort into their purchase decision making (Beharrell and Dennison, 1995). For the measurement of the PDI, Laurent and Kapferer (1985) abridged consumer involvement profile was used. The indicators referred to the respondent's level of agreement with the following statements; 'I choose MF schemes very carefully' (PDI1), 'Which MF scheme I buy matters to me a lot' (PDI2), 'Choosing MF scheme is an important decision for me' (PDI3). Five-point Likert scale was used to measure these three items of the constructs.

DIS connotes the effort that an investor makes in searching and seeking pre-purchase information. The indicators were adopted from (Urbany *et al.*, 1989; Capon *et al.*, 1996; Alexander *et al.*, 1997; Jain and Shuang Wu, 2000). Indicators referred to the respondent's level of agreement with the extent to which they have used specific source of information before the purchase of recent MF schemes. The specific sources included in the study were; MF sales agents (DIS1), banks (DIS2), brokers (DIS3), store display (DIS4), newspapers (DIS5), magazines (DIS6), family (DIS7), friends (DIS8), peer group (DIS9), television (DIS10), mail (DIS11) and financial portal (DIS12). Five-point Likert scale was used to measure these 12 items of the constructs.

Depth of information processing construct was used to measure the level of effort used by the respondents to evaluate and compare the MF schemes before reaching a decision. The indicators used to measure DIP were adopted from Huhmann and Bhattacharyya, 2005 and Patel *et al.*, 1992. Indicators referred to the respondent's level of agreement with

the extent to which they have used specific attribute information to compare the MF schemes. The specific attributes information included in the study were: fund historical performance (DIP1), fund size (DIP2), scheme entry and exit load (DIP3), scheme investment portfolio (DIP4), favourable rating of fund scheme (DIP5), clarity of accounting statement (DIP6), reputation of fund manager (DIP7), fund manager background (DIP8), investment style (DIP9), scheme tax benefit (DIP10), pending legislation (DIP11) and fund advertisement expense (DIP12). Five-point Likert scale was used to measure these 12 items of the constructs.

Results

This section is organized as follows. First the demographic profile of the respondents in the final sample is discussed. Next, the scale refinement, dimensionality and reliability of each of the latent constructs used in this study are discussed. The subsequent subsection discusses the results of test of convergent and discriminant validity of the constructs. The penultimate subsection discusses the test results of the hypotheses of the study. The final subsection discusses the result of the overall fit of the proposed model and compares the proposed model with alternative models.

Demographic profile of sample MF investors

The demographic profile of the respondents in the final sample is given in Table 2.1. The sample consists of 84 per cent men and 16 per cent women respondents. Most of the respondents (54.5 per cent) were between the age group of 25–35 years. The majority (44.8 per cent) of the respondents had a monthly income between Rs. 15000 and Rs. 25000, which is above the average monthly income of Indians of approximately Rs. 3000 (Business Standard, 2012). In terms of stage in the life cycle, bachelors consist of 40.7 per cent of respondents followed by recently married (27.2 per cent) and married with at least one child below 20 years of age (21.6 per cent). In terms of academic qualifications, the majority (38.1 per cent) of the respondents were graduates followed by postgraduates (32.5 per cent) and professional degree holders (22.4 per cent). Among all the respondents, 61.9 per cent were salaried, that is, they were engaged in paid employment.

Test of dimensionality and reliability of latent research constructs

The dimensionality of every latent construct was assessed using exploratory factor analysis (EFA), a method based on the pattern of correlations

between the items measuring a particular construct (Hair *et al.*, 2005). The Kaiser–Meyer–Olkin measure of sampling adequacy for all the constructs was above minimum acceptable value of 0.60, which means data were adequate for EFA (Tabachnick and Fidel, 1989). Tables 2.1 through 6 depict results of EFA conducted to assess the dimensionality of the latent constructs.

Table 2.1 Demographic profile of the study respondents (*N=268*)

Category	**Percentage**	**Frequency**
Gender		
Male	84	225
Female	16	43
Age (Years)		
Below 25	20.9	56
25–35	54.5	146
36–45	14.2	38
46–55	8.2	22
56 and above	2.2	6
Stage in family life cycle		
Bachelorhood	40.7	109
Recently married	27.2	73
Married and at least one child below 20 years	21.6	58
Married and children above 20 years	8.2	22
Married and alone	2.2	6
Academic qualification		
School final	7.1	19
Graduate	38.1	102
Postgraduate	32.5	87
Professional degree	22.4	60
Monthly family income (Rupees)		
Below Rs.15000	16.4	44
15000 to 25000	44.8	120
25001 to 50000	31	83
Above 50000	7.8	21
Occupation		
Professional	17.9	48
Business	16.8	45
Salaried	61.9	166
Retired	3.4	9

Table 2.2 Dimensionality and reliability of subjective knowledge (SK) construct (*N*=268)

Construct items	Loadings		Eigenvalue	KMO	Cronbach's α
	Factor 1	Factor 2			
Subjective knowledge	—	—	2.261	0.715	0.836
Compared with average men and women, I am very familiar with a wide variety of MF schemes.	0.892	—	—	—	—
Compared with my friends, I am very familiar with a wide variety of MF schemes.	0.846	—	—	—	—
Compared with people who invest a lot in MF schemes, I am very familiar with a wide variety of MF schemes.	0.866	—	—	—	—

The EFA of latent constructs SK, PPR and PDI (Tables 2.2 to 2.4) shows that all items measuring any one of these three constructs are loaded onto only a single factor. Hence, all these three constructs have a unidimensional character.

Next, the 'DIS' construct was examined for the factorability of 12 items measuring this construct. First, inter items Pearson correlation coefficient was calculated for the 12 items. The findings revealed that 2 of the 12 original items do not correlate at least 0.3 with any of the remaining items. These items were: 'to what extent you have used MF sales agents to gather information before the purchase of a recent MF scheme' (DIS1) and 'To what extent you have used banks to gather information before the purchase of a recent MF scheme' (DIS2). These two items were subsequently dropped from the EFA. Next, EFA of the remaining 10 items were made. The two factor solution, which explains 49.27 of the variance, was retained following the Eigenvalues rule proposed by Kaiser (1960). Two items with high loading on the third factor were eliminated. These were: 'To what extent have you used

Table 2.3 Dimensionality and reliability of PPR construct (*N*=268)

Construct items	Loadings		Eigenvalue	KMO	Cronbach's α
	Factor 1	Factor 2			
Perceived purchase risk	—	—	2.385	0.680	0.770
The likelihood that the agent(s) will mislead while purchasing MF scheme?	0.786	—	—	—	—
The likelihood that there may be hidden charges while/after purchasing MF scheme?	0.745	—	—	—	—
The likelihood that investment in certain MF schemes will have a negative consequence on your future cash position?	0.826	—	—	—	—
The likelihood that investment in certain MF schemes could lead to monetary loss?	0.728	—	—	—	—

mail to gather information before the purchase of a recent MF scheme' (DIS11) and 'To what extent have you used financial portals to gather information before the purchase of a recent MF scheme' (DIS12). EFA of the remaining eight items (Table 2.5), using Varimax rotation was conducted, with two factors explaining 55.23 per cent of variance. A careful analysis of the items in the construct 'DIS' indicates that the items under Factor 1 and 2, respectively, measure the extent of external information search (EIS) and personal information search (PIS) by MF investors. Hence, 'DIS' construct was conceptualized as a two-factor structure composed of 'EIS' and 'PIS'.

Next, the 'depth of information processing' construct was examined for the factorability of the 12 items measuring this construct. Pearson correlation coefficient analysis revealed that all the 12 items correlated at least 0.3 with at least one of the remaining items. Next, EFA of the

Table 2.4 Dimensionality and reliability of purchase decision involvement (PDI) construct (*N*=268)

Construct items	Loadings		Eigenvalue	KMO	Cronbach's α
	Factor 1	Factor 2			
Purchase decision involvement	—	—	2.247	0.719	0.826
I choose mutual fund schemes very carefully	0.850	—	—	—	—
Which mutual fund scheme I buy matters to me a lot	0.883	—	—	—	—
Choosing mutual fund scheme is an important decision for me	0.864	—	—	—	—

Table 2.5 Dimensionality and reliability of DIS construct (*N*=268)

Construct items	Loadings		Eigenvalue	KMO	Cronbach's α
	Factor 1	Factor 2			
Depth of information search[a]	—	—	1.866	0.718	0.752
Brokers	0.689	—	—	—	—
Stores display	0.587	—	—	—	—
Newspapers	0.818	—	—	—	—
Magazines	0.676	—	—	—	—
Family	—	0.721	—	—	—
Friends	—	0.796	—	—	—
Peer groups	—	0.742	—	—	—
Television	0.731	—	—	—	—

[a]The 12 items were originally used for measuring the DIS construct. However, the following 4 of the 12 items were dropped following correlation analysis and the initial EFA analysis: 'sales agent', 'banks', 'mail' and 'financial portals'. Hence, the final EFA is performed using only 8 of the 12 items originally used for measuring the DIS construct.

12 items, using Varimax rotation was conducted, with two factors explaining 58.51 per cent of variance. A careful analysis of the items in each construct 'depth of information processing' indicates that the items under Factor 1 and 2, respectively, measure the non-performance attributes and performance attributes of MF schemes (Table 2.6). Hence,

Table 2.6 Dimensionality and reliability of DIP construct (*N*=268)

Construct items	Loadings		Eigenvalue	KMO	Cronbach's α
	Factor 1	Factor 2			
Depth of information processing	—	—	3.006	0.807	0.921
Fund historical performance	—	0.873	—	—	—
Fund size	—	0.835	—	—	—
Scheme entry and exit load	—	0.444	—	—	—
Scheme investment portfolio	0.631	—	—	—	—
Favourable rating of MF scheme	—	0.554	—	—	—
Clarity of accounting statement	0.711	—	—	—	—
Reputation of fund manager	0.768	—	—	—	—
Fund manager background	0.838	—	—	—	—
Investment style	0.742	—	—	—	—
Scheme tax benefit	—	0.623	—	—	—
Pending legislation	0.812	—	—	—	—
Fund advertisement expense	0.699	—	—	—	—

'depth of information processing' construct was conceptualized as a two-factor structure composed of 'non performance attributes processing' and 'performance attribute processing'.

For all the above constructs, the reported Eigenvalue was greater than 1 and the factor loadings exceed the acceptable threshold level of 0.4 (Hair *et al.*, 2005). The Bartlett's test of Sphericity was also found to be significant ($P < 0.001$).

After identifying the dimensionality, the reliability of the constructs was measured using Cronbach's α. Tables 2.2 to 2.6 show that the reliability of all the constructs as measured by the Cronbach's α was above the recommended minimum acceptable value of 0.7 (Hair *et al.*, 2005). On the basis of the above results, it was concluded that all the measures are adequate to measure the constructs of the study.

Figure 2.2 presents the proposed investment behaviour model with measurement items. The model specifies the pattern by which each measure loads on a particular factor.

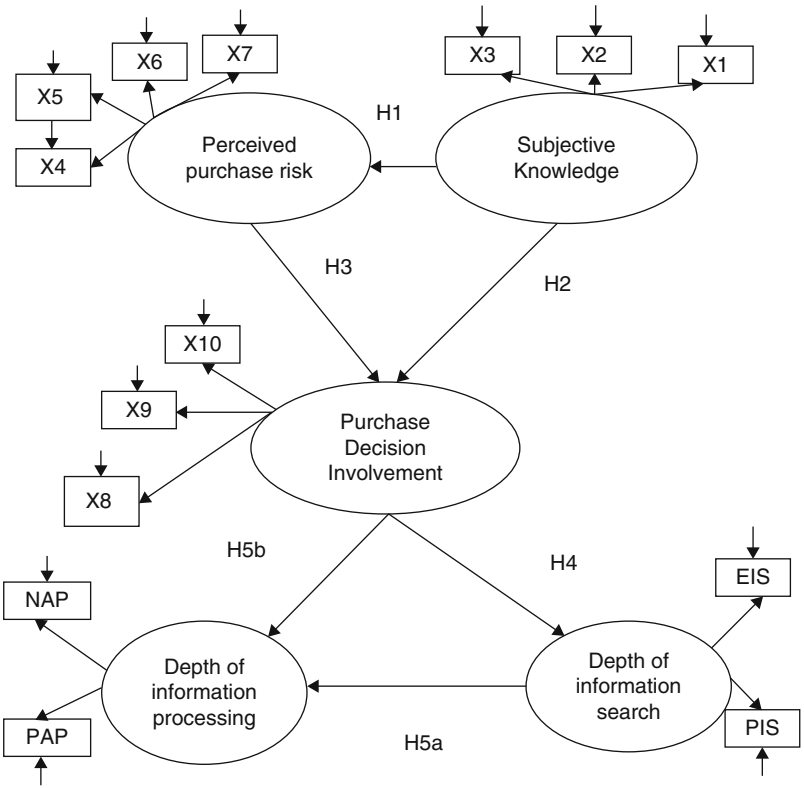

Figure 2.2 Proposed model with measurement items

Note: SK1 Compared with average men and women, I am very familiar with wide variety of MF schemes; SK2 Compared with my friends, I am very familiar with wide variety of MF schemes; SK3 Compared with people who invest a lot in MF schemes, I am very familiar with wide variety of MF schemes; PPR1 The likelihood that the agent(s) will mislead while purchasing mutual fund scheme?; PPR2 The likelihood that there may be hidden charges while/after purchasing mutual fund scheme?; PPR3 The likelihood that investment in certain mutual fund scheme can have large negative consequence on your future cash position?; PPR4 The likelihood that investment in certain mutual fund scheme could lead to monetary loss?; PDI1 I choose mutual fund schemes very carefully; PDI2 Which mutual fund scheme I buy matters to me a lot; PDI3 Choosing mutual fund scheme is an important decision for me; EIS External information search; PIS Personal information search; NAP Non-performance attribute processing; PAP Performance attribute processing.

Test of convergent and discriminant validity of the constructs

Standardized confirmatory factor analysis (CFA) parameters estimated pattern coefficients were examined to test the convergent validity of the constructs (Marsh and Grayson, 1995; Anderson and Gerbing, 1988). All scales showed convergent validity (that is, each had a critical ratio

(cr) >±1.96) (Marsh and Grayson, 1995; Anderson and Gerbing, 1988). In fact, the smallest cr was 3.84.

In order to test the discriminant validity of each construct, two models (one constrained model and another unconstrained model) were tested for each possible pair of estimated constructs. The χ^2-value was generated for both constrained and unconstrained models with the respective degree of freedom. Afterward, a χ^2-difference test was performed on the two models. A significantly lower χ^2-value for the unconstrained model demonstrates that discriminant validity has been achieved (Anderson and Gerbing, 1988; Bogazzi and Phillips, 1982). Table 2.7 indicates that all the constructs possess discriminant validity.

Test results of the hypotheses of the study

Table 2.8 presents the mean, standard deviation and correlation among the study constructs. Figures in the diagonal represent the composite reliability of the constructs based on CFA.

The test results of the proposed hypotheses using structural equation modelling with maximum likelihood estimate (AMOS 16) are shown in Figure 2.3. Results support all the proposed hypotheses. SK negatively impacts PPR (path estimate −0.27, $P < 0.01$). SK positively impacts PDI (path estimate 0.59, $P < 0.01$). PPR negatively impacts PDI (path estimate −0.14, $P < 0.05$). PDI positively impacts DIS (path estimate 0.48, $P < 0.01$). DIS positively impacts DIP (path estimate 0.60, $P < 0.01$). PDI positively impacts DIP (path estimate 0.40, $P < 0.01$).

Model fit and test of alternative models

The fit statistics for the hypothesized model are displayed in Table 2.9. As shown in the table, the hypothesized model appears to fit the data adequately based on the convention used to judge the fit statistics. The χ^2 statistics was insignificant and the ratio of χ^2 to degrees of freedom was below 3 (Kline, 1998), whereas GFI, AGFI, CFI, TLI and IFI statistics were greater than or close to 0.90 (Hair *et al.*, 2005). However, the RMSEA and SRMR value of 0.08 and 0.07, respectively, suggest that the model only adequately fits the data. On the basis of the overall analysis of the goodness-of-fit statistics, and the conventions used, it is suggested that the model adequately fits the data. The squared multiple correlations for each structural equation were as follows: PPR, $R^2 = 0.07$; PDI, $R^2 = 0.41$; DIS, $R^2 = 0.23$; and depth of information processing, $R^2 = 0.77$.

In evaluating a hypothesized model, it is important to compare its fit to competing models (MacCallum *et al.*, 1993). The following alternative models were estimated: (i) Alternative 1: knowledge mediates the

Table 2.7 Results of discriminant validity test

Combination	Correlation	χ^2 (corr. fixed)	DF	χ^2 (corr. free)	DF	Change in χ^2	Change in DF	Significance level
1 and 2	–0.302	261.2	14	84.4	13	176.8	1	0.001
1 and 3	0.588	61.5	9	19.7	8	41.8	1	0.001
1 and 4	0.257	127.6	20	64.7	19	62.9	1	0.001
1 and 5	–0.05	146.4	9	47.5	8	98.9	1	0.001
1 and 6	0.455	236.9	35	197.8	34	39.1	1	0.001
1 and 7	0.546	57.9	20	26.9	19	31	1	0.001
2 and 3	–0.284	265	14	78.9	13	186.1	1	0.001
2 and 4	–0.274	284.5	27	123	26	161.5	1	0.001
2 and 5	0.005	212.6	14	104.4	13	108.2	1	0.001
2 and 6	–0.385	436.2	44	243.8	43	192.4	1	0.001
2 and 7	–0.444	339.4	27	137.8	26	201.6	1	0.001
3 and 4	0.449	131.5	20	78.9	19	52.6	1	0.001
3 and 5	0.166	108.2	9	20.8	8	87.4	1	0.001
3 and 6	0.411	239.7	35	185.5	34	54.2	1	0.001
3 and 7	0.581	93.2	20	55.9	19	37.3	1	0.001
4 and 5	0.431	149.9	20	104.2	19	45.7	1	0.001
4 and 6	0.604	292.3	54	276.2	53	16.1	1	0.001
4 and 7	0.554	137.2	35	111.8	34	25.4	1	0.001
5 and 6	0.38	267.2	35	212.3	34	54.9	1	0.001
5 and 7	0.408	110.6	20	70	19	40.6	1	0.001
6 and 7	0.741	293.7	54	280.7	53	13	1	0.001

Note: Corr. = Correlation; 1 = Subjective knowledge; 2 = Perceived purchase risk; 3 = Purchase decision involvement; 4 = EIS; 5 = PIS; 6 = NAP; 7 = PAP.

Table 2.8 Means, standard deviations and intercorrelations among study variables

Variables	M	SD	1	2	3	4	5	6	7
1. Subjective knowledge	8.73	2.75	0.83	—	—	—	—	—	—
2. Perceived purchase risk	13.43	3.32	–0.24**	0.77	—	—	—	—	—
3. Purchase decision involvement	9.91	2.76	0.50**	–0.24**	0.83	—	—	—	—
4. EIS	10.14	4.36	0.23**	–0.21**	0.36**	0.76	—	—	—
5. PIS	7.06	2.93	0.00	–0.03	0.11	0.32**	0.65	—	—
6. NAP	16.15	7.31	0.38**	–0.30**	0.36**	0.49**	0.21**	0.88	—
7. PAP	14.69	4.99	0.43**	–0.31**	0.49**	0.47**	0.26**	0.53**	0.74

Notes: Figure in the diagonal represents composite reliability of scales.
**$P < 0.01$.

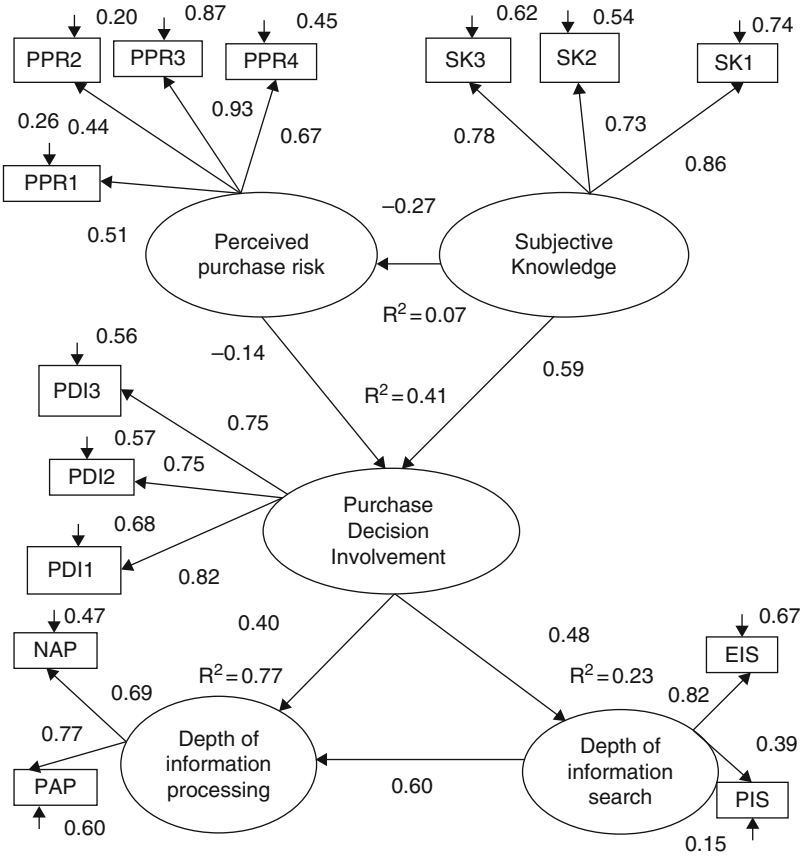

Figure 2.3 The structural equation model with standardized estimates

influence of PPR and PDI on investment behaviour, whereby PPR and PDI only directly affect the SK, which subsequently influences investment behaviour; and (ii) Alternative 2: PPR mediates the influence of SK and PDI on investment behaviour, whereby SK and PDI only directly affects the PPR, which subsequently influences investment behaviour.

The difference in χ^2 between the hypothesized model and each alternative model was significant. (Alternative 1: $\Delta\chi^2 = 23.54$, $P < 0.01$; Alternative 2: $\Delta\chi^2 = 129.68$, $P < 0.01$), indicating that the alternative models provide a significantly poorer fit for the data than the hypothesized model. Moreover, the difference between the AIC of the hypothesized

Table 2.9 Fit statistics for hypothesized model

Model	χ^2	DF	χ^2/DF	GFI	AGFI	CFI	IFI	SRMR	RMSEA	AIC
Hypothesized model	188.56	70	2.69	0.911	0.866	0.919	0.920	0.07	0.08	258.56
Alternative Model 1	212.04	71	2.98	0.904	0.859	0.904	0.905	0.110	0.08	280.04
Alternative Model 2	318.18	71	4.48	0.856	0.787	0.832	0.834	0.171	0.114	386.18

Note: χ^2 = Chi-square; DF = degree of freedom; GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index; CFI = comparative fit index; IFI = Incremental fit index; SRMR = standardized root mean square residual; RMSEA = root-mean-square error of approximation; AIC = Akaike information criterion.

model and the alternative model was also substantial (Alternative 1: $\Delta AIC = 21.48$, $P < 0.01$; Alternative 2: $\Delta AIC = 127.62$, $P < 0.01$). The other fit statistics for the alternative models were also poorer than the hypothesized model.

Conclusions and implications

The following conclusions are drawn from the above results of the study. *First*, investors who perceive themselves as highly knowledgeable (high SK) perceive the purchase of MFs as less risky (low PPR), and are motivated to actively engage in MF investment decisions (high level of PDI). This may be owing to one or more of the following reasons: (i) MF investors' level of objective knowledge is also high owing to exposure to domain knowledge (Alba and Hutchinson, 2000) or prior experience (Schmidt and Spreng, 1996) of purchase of MFs, which makes them feel that they have control of the purchase risk associated with MF; and (ii) MF investors' are over confident of their information search and processing ability and their ability to control the risk associated with MF purchase (Tapia and Yermo, 2007). *Second*, investors who perceive themselves as less knowledgeable (low SK) perceive purchase of MFs as more risky (high PPR), and are motivated to remain passive during MF investment decisions (low PDI). The manifestation of this behaviour will be in the form of low DIS and information processing by these categories of investors. Hence, they are likely to use few specific information sources on which they rely upon (Gemunden, 1985; Coleman *et al.*, 1995; Cho and Lee, 2006). Further, rather than engaging in extensive processing of attribute information related to MFs, they will rely on few attributes which they will use as cues (decision heuristics) as an indicator of the quality of MFs (Dawar and Parker, 1994; Tapia and Yermo, 2007).

MF marketers should carve different marketing strategies for passive (low SK, high PPR and low PDI) MF investors and active (high SK, low PPR and high PDI) MF investors. Investment behaviour of passive investors will have the following characteristics: (i) engage less in information search and rely on few specific sources for investment advice; (ii) consider distribution channel as reliable source of information (Mishra and Kumar, 2011); (iii) engage in less extensive processing of MF attribute information; (iv) likely to use mental shortcuts (that is, rule of thumb) to evaluate and select MF schemes, for example, historical performance of funds (Benartzi and Thaler, 2001; Huberman and Jiang, 2006); and (v) likely to show a preference towards default

funds/index funds. Hence, the above characteristic of these investors may be effectively used to design and promote the MF schemes. Specifically, MF companies should promote index funds among these categories of investors. MF companies can also design innovative 'default funds', like teachers specific fund directed towards academicians, doctor specific fund directed towards doctors and so on to tap these categories of investors. Further, MF companies should effectively use their distribution channels to promote their funds among these categories of investors. Finally, advertisement can be more effectively targeted towards these investors rather than active investors where the role of advertisement is somewhat limited.

Investment behaviour of active MF investors is likely to have following characteristics: (i) engage extensively in information search (high DIS) and rely on multiple sources of information (Gemunden, 1985; Coleman *et al*., 1995; Cho and Lee, 2006); and (ii) engage in extensive information processing (high depth of information processing) and use multiple attribute information to compare MF schemes (Dawar and Parker, 1994; Tapia and Yermo, 2007). As these categories of MF investors use a large number of information attributes (Dawar and Parker, 1994; Tapia and Yermo, 2007; Mishra, 2011), they are likely to restrict their attention to a fewer number of brands during the choice of a MF (that is, will use brand by brand comparison) (Powell and Ansic, 1997). Hence, those MF schemes/companies which are part of the consideration set will have more probability for being selected in comparison with those which are not. Hence, while targeting these categories of MF investors, MFCs faces a challenge to be among the top four or five names so that they become the part of the consideration set of these categories of MF investors. Active investors, if engaged in the promotion of MF schemes, will effectively help MFCs in promoting their funds.

The findings of the study have also implications for the MF industry regulators. *First*, in order to improve the quality of decisions of active MF investors (investors with high SK), regulators and policymakers require having a check on the information overload. There is empirical evidence supporting the notion that a large number of investment options can cause information overload (Tapia and Yermo, 2007). Hence, MF companies should be discouraged to introduce 'new MF schemes', which are similar to the existing schemes offered by the same company. *Second*, investors with low SK perceive high risk in MF purchase and will remain passive during the investment decision-making process (low PDI). It is likely that those investors who feel less confident to engage actively in information search and processing are the ones

who rely more on the distribution channels for investment advice. However, there is adequate empirical evidence to doubt the quality of financial advice provided by these professionals owing to conflicts in the objectives of investors and advisors (Powell and Ansic, 1997), lack of knowledge of advisor (Committee on investor awareness and protection, minimum common standard for financial advisors and financial education: A consultation paper), and disparity in the definition of 'low risk' between investors and advisors (Conquest Research Limited, 2004). Hence, policymakers and regulators of the MF industry have to work on the manifold objectives. *First*, strengthen the existing policy of certification and training of distribution channels/financial advisors to ensure that these professionals are adequately equipped and motivated to guide investors in selecting appropriate MF schemes. *Second*, encourage investors to actively engage in investment decisions by advancing their knowledge on various facets of financial planning. *Third*, reduce ambiguity surrounding MF products through effective mass communication media so that investors are rightly able to appreciate the risk associated with MF products. *Fourth*, bring measures to enhance the transparency in the working of MF industry and put a check on misselling. *Fifth*, put mechanism in place so that financial education programme can be introduced at the school level, as investment decision substantially influence the financial well-being of individuals.

Limitations and future direction of research

The findings of the study are constrained by the following limitations. *First*, the study focuses on the pre-purchase information search behaviour and DIP of MF investors and the post-purchase behaviour is not discussed. *Second*, depth of DIP has been discussed with reference to the extent to which each type of information attributes are used by MF investors before/at the time of purchase of MF schemes. However, more insights can be achieved with an understanding of the sequence in which attributes information are used, the number of stages in which the decision is taken and the number of MF schemes considered at various stages of information processing. *Third*, post-purchase perceived risk of MF investors has been measured in this study. It may be possible that there is a difference in pre-purchase perceived risk and post-purchase perceived risk owing to the effect of actual purchase on perceived risk of the respondents. A natural expansion of this study is to empirically validate this model on the sample of investors whose pre-purchase risk, as well as post-purchase risk is captured. This will also capture

investors post-purchase regret, which is not included in this study. *Fourth*, the literature suggests that apart from SK, PPR is also likely to be influenced by demographic variables like age, income, wealth, gender, marital status, personality and educational attainment (Rajarajan 2000, 2003; Finke and Huston 2003). However, the study did not control for the effect of other variables on PPR, owing to limitation related to the sample size and nature of respondents. This was also reflected in the squared multiple correlations of the structural equation for PPR (that is, $R^2 = 0.075$). The above limitation provides the future scope of research in this field. *Fifth,* the sample selected for the study is through convenience sampling due to non-availability of data on MF investors. Due consideration was given to check the validity and internal consistency of the data; however, care has to be taken in drawing conclusions from the results. Further, use of a random sampling method to select respondents would have further improved the statistical validity of the findings. *Sixth*, the study is conducted using respondents from the Jammu region, Jammu and Kashmir (India). To further validate the results, a similar study needs to be conducted on the residents of other regions, states and countries. *Seventh*, the study is confined to individual investors of MF schemes and institutional investors are excluded from the study. Therefore, including other categories of investors might lead to different behavioural outcomes.

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3

The Information Search Process of Socially Responsible Investors

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Introduction

The market for mutual funds targeted at private investors has shown an incredible growth since the middle of the twentieth century. The industry has come a long way from its modest beginnings in the mid-1900s, when fewer than 50 mutual funds existed in America.[1,2] Today, thousands of funds exist, and as many as 45 per cent of US households own mutual funds.[1] Alongside, or perhaps because of this growth, the market for investment services has also experienced an increasing product diversification. Private investors now have an abundance of different types of mutual funds to choose from as different mutual funds target different industries, regions, types and sizes of companies.

One of these more specialized types of mutual funds that has received a lot of attention recently is that of socially responsible investment (SRI)

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profiled mutual funds. In essence, SRI profiled mutual funds are funds that, in addition to the 'traditional' financial objective of investment, also use social, ethical or environmental (SEE) objectives in the investment process.[3–6] Through this investment process, it has become possible for individual consumers to incorporate SEE concerns into their private investment behavior. Considering the numbers, consumers are increasingly using this opportunity to incorporate their SEE concerns into their investments, as the market for SRI profiled mutual funds has grown since being introduced in the 1970s. Recent figures from the Social Investment Forum show that as much as US$1 out of every $11 in America is invested according to SRI principles. Moreover, American investors who desired to invest 'with their conscience' had over 200 different SRI profiled mutual funds to choose from.[6] A similar development can also be seen in Europe where the SRI market now exceeds €2.5 trillion in assets.[7]

Despite the growth and increasing importance of the SRI industry, there is still little research on why and how consumers make decisions about investing in SRI profiled mutual funds. As only a limited number of studies have been published,[8–11] there is still an incomplete understanding of how SEE factors affect the investment decision making of private investors. One area, in particular, that is important in order to understand private investors' SRI decision making, that has almost gone unnoticed in the literature, is how SR-investors search for information before making an investment in SRI profiled mutual funds. This pre-purchase phase is important for at least two reasons. First, if the SRI industry has an ambition to grow, marketing efforts need to be located *before* investors make their investment decision. A better understanding of the activity of investors before making the SR-investment decision can aid this task. Second, the information search phase is, in many ways, the gateway to investing in SRI and will, as such, influence the rest of the decision-making process. Thus, a better understanding of investor activity before investing in SRI has the potential to shed light on how SEE issues influence the entire decision-making process of SR-investors.

Against this background, this article address two research questions regarding the information search process of private SR-investors:

RQ1: What information do SR-investors collect before making the decision to invest in SRI profiled mutual funds? Is this information more *financial* or *SEE* in nature?

RQ2: What is the impact of *financial* and *SEE* types of involvement and perceived knowledge on the external information search process of

SR-investors? That is, do financially involved and knowledgeable investors go through a different search process than SEE involved and knowledgeable investors when choosing to invest in SRI?

In this study, we address these research questions by examining the impact of involvement and perceived knowledge on the information search process of private SR-investors. Previous research has highlighted these two concepts as fundamental in understanding consumer information search.[12–14] However, in contrast to previous research, we separate the constructs and address the impact of both *financial* and *SEE* involvement and knowledge on the information search on private SR-investors. Thus, the underlying notion of the current study is that consumer search behavior for SRI profiled mutual funds could be influenced by both financial and SEE factors. The theoretical model of the study is presented in Figure 3.1.

The rest of the article is structured as follows. First, we focus on literature review and hypotheses development for the constructs in the theoretical model. Thereafter, the method of the study is presented. After this, the results are presented and discussed.

Literature review

Previous research with regard to expected influential variables on consumer information search behavior for SRI mutual funds is presented below. First, we focus on previous research on both financial and SEE involvement. Thereafter, we concentrate on the role of perceived

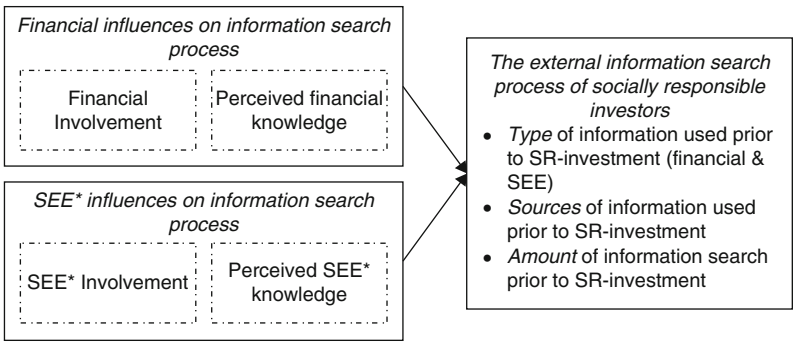

Figure 3.1 The theoretical model of the study
Note: *SEE = Social, ethical and environmental.

financial and SEE knowledge as they relate to search behavior for SRI profiled mutual funds.

The impact of involvement on consumer search behavior for SRI mutual funds

In the literature, several different effects of involvement can be distinguished. One of the more important consequences of involvement is that it affects consumer search behavior. A highly involved consumer is often considered to increase search, spend more time evaluating alternatives, perceive greater attribute differences between offerings and go through a more complex decision-making process.[15]

On this note, there is an extensive body of literature that examines the impact of involvement on the amount (or extent) of external information search.[13,16,17] In these studies, consumer involvement is generally found to be one of the most important predictors of the extent of external pre-purchase search. As involvement is generally considered to be a construct relating to personal relevance,[18] the link between amount of search and involvement is natural. If something is important and relevant to consumers, they are likely to exert more effort in the amount of search.

In contrast to the research on the impact of involvement on amount of search, there is little research that examines the impact of involvement on the sources used. However, as Jarvis[19] points out, consumers who perform pre-purchase external search must choose among types of information sources. In the complex context of investment decisions, the financial advisor becomes an important source for information for many private investors. Many consumers do not understand the financial products that they invest in and may therefore rely on advice when gathering information about different financial products. On this note, research has indicated that less-involved consumers are more likely to rely on professional advice. For example, in Martenson,[20] 38 per cent of the less knowledgeable and involved investors stated that the contact person had influenced their choice compared to only 16 per cent of the highly involved and knowledgeable group.

As this study deals with the search behavior for SRI profiled mutual funds, one distinction that is important for our study is the difference between financial and SEE types of involvement. With regard to the first of these two, Harrison[21] argues that involvement could be an important variable for segmenting consumers in financial services. Moreover, Beckett *et al*[22] use involvement as one of two main variables

for segmenting consumers of financial services. In the segmentation analysis, a highly involved financial consumer is thought to be more 'rational', actively seeking financial information. The less-involved consumer, on the other hand, is described as fairly passive, making few purchases and to a large extent relying on repeat behaviors.

Studies about consumer involvement with SEE products and services are not as common in the literature as involvement with financial services. However, one exception of this is a study by Stanley and Lasonde.[23] Using Zaichkowsky's personal involvement inventory, they found that consumer involvement with SEE issues correlated with different purchase behaviors regarding environmentally conscious goods. Other than this particular study, an abundance of studies have implicitly addressed the influence of SEE involvement by using concepts such as 'environmental concern'.[24–26] In general, many of these studies have found that consumers are concerned about SEE issues and that SEE involvement impacts several parts of the consumer decision-making process.

In all, previous research highlights the importance of both financial and SEE involvement for consumer external search behavior. Against this background, we expect that both involvement with financial services and SEE issues will impact consumer search behavior for SRI profiled mutual funds.

Hypothesis 1: A high level of involvement with personal financial investment issues will lead to:

a. a greater focus on financial information (as opposed to SEE information) when searching for information on SRI profiled mutual funds prior to investment;
b. less usage of financial advisors when searching information on SRI profiled mutual funds prior to investment;
c. a higher level (greater amount) of total information search on SRI profiled mutual funds prior to investment.

Hypothesis 2: A high level of involvement with purchasing SEE products and services will lead to:

a. a greater focus on SEE information (as opposed to financial information) when searching for information on SRI profiled mutual funds prior to investment;
b. less usage of financial advisors when searching information on SRI profiled mutual funds prior to investment;

c. a higher level (greater amount) of total information search on SRI profiled mutual funds prior to investment.

The impact of perceived knowledge on consumer search behavior for SRI mutual funds

There is a large body of consumer behavior research that connects perceived (or subjective) knowledge with information search behavior.[17] The underlying theoretical reasoning for much of this research revolves around the notion that consumers' prior knowledge will affect the way in which they solve consumption-related problems. Perceived knowledge has been found to impact information search behavior in many studies.[12,17] For example, in a study on information search for investments, Lin and Lee[12] found that perceived knowledge is positively correlated with the amount of external search by the consumer. However, previous research on the impact of knowledge on the amount of information search has reached differing conclusions as some studies have found a negative relationship, whereas others argue for a U-(or inverted U) shaped information search response.[17]

With regard to the impact of perceived knowledge on the sources used by investors, research has been less frequent. However, within the financial services literature, there is a body of research that addresses the role of knowledge and use of financial advisors in investment decisions. In general, the dominating notion in this research is that consumers low in knowledge will be more likely to depend on advice from financial advisors than highly knowledgeable consumers. This relationship has also been displayed empirically as studies, such as Lee and Cho,[27] show that a low level of perceived expertise in financial management increases the likelihood of using information intermediaries (such as financial advisors) when making investment decisions. Moreover, as mentioned above, Martenson[20] shows that less involved and knowledgeable investors use advisors to a greater extent than highly involved and knowledgeable investors.

As with the involvement concept above, one important distinction for this study is the difference between financial and SEE types of perceived knowledge. The first of these, financial knowledge (also known as financial literacy for example, Devlin[28]), is considered to be an important explanatory variable for consumer behavior in the financial services industry.[28–30] When consumers perceive that they lack the necessary knowledge, the complex task could become overwhelming, thereby making them indifferent or apathetic toward the service.[31] This lack of financial knowledge has also been empirically documented.

For example, in Capon *et al*,[32] a large percentage of American investors could not answer basic questions about their investments. Against this background, it seems clear that perceived financial knowledge is relevant for information search behavior with regard to SRI profiled mutual funds.

The second type of knowledge relevant to our study is consumer knowledge with regard to SEE issues. In this domain, knowledge is usually referred to as 'eco-literacy' and refers to knowledge about SEE issues.[33] Several studies have found a positive impact of SEE knowledge on the tendency to purchase SEE profiled goods and services. For example, Amyx *et al*[34] and Chan[35] both found a significant correlation between knowledge and some form of consumer behavior with regard to SEE profiled goods or services.

In all, the literature testifies to the importance of both financial and SEE knowledge for consumer external search behavior. Thus, we form the following hypotheses regarding the influence of perceived financial and SEE knowledge:

Hypothesis 3: A high level of perceived financial knowledge will lead to:

a. a greater focus on financial information (as opposed to SEE information) when searching for information on SRI profiled mutual funds prior to investment;
b. less usage of financial advisors when searching information on SRI profiled mutual funds prior to investment;
c. a higher level (greater amount) of total information search on SRI profiled mutual funds prior to investment.

Hypothesis 4: A high level of perceived SEE knowledge will lead to:

a. a greater focus on SEE information (as opposed to financial information) when searching for information on SRI profiled mutual funds prior to investment;
b. less usage of financial advisors when searching information on SRI profiled mutual funds prior to investment;
c. a higher level (greater amount) of total information search on SRI profiled mutual funds prior to investment.

Method

Sample and data collection

This study focuses on information search behavior with regard to mutual fund investment and examines the impact of a number of financial and

SEE variables on information search behavior for SRI profiled mutual funds. In doing this, the population of interest is investors who have chosen to invest, at least a part of their portfolio, in SRI profiled mutual funds. However, getting access to this population is difficult as the SRI industry is still small. On account of this, generating a sample from the general population is not a good option as this would result in very few SR-investors being included in the sample. In order to address this issue, we generated our sample from the database of a large Swedish mutual fund provider. In this way, we could generate a sample with a group of SR-investors large enough to meet the objective of the study. Although this sampling procedure means that the sample is not fully representative of the investment population in general, the benefit of this method outweighs the disadvantages. Moreover, as the sample is generated from one of the larger providers of investment services in Sweden, we argue that the sample is at least, to a certain extent, representative of the greater private investment population.

A questionnaire was sent by mail to 2000 randomly selected investors in the customer database who currently had invested in at least one SRI profiled mutual fund. A total of 405 questionnaires were returned. After sorting out unusable questionnaires, 369 remained resulting in a response rate of 18.5 per cent. As can be seen in the results section, the usable response rate varied between the different analyses.

Sample characteristics

The sample was made up of almost equal proportions of men (48 per cent) and women (52 per cent) and had an average age of 62 years. The respondents in the sample were well educated as 49 per cent had a university degree. With regard to SRI, the average respondent allocated between 11 and 20 per cent of their investment portfolio in SRI profiled mutual funds and had been investing in SRI profiled mutual funds for an average of 5–6 years.

Questionnaire design

The main variables in the questionnaire were involvement, perceived knowledge and information search behavior. The manner in which these variables were measured is presented below as well as in Table 3.1.

The dependent variables – consumer information search

In order to highlight the nature of the consumer information search process for SRI profiled mutual funds, we focus on three aspects of information search behavior. These are (1) the *amount* (or extent) of information

Table 3.1 The independent and dependent variables used in the study

Variable	Number of items and scale	Items	Items based on
Independent variables			
Financial Involvement	The 10-item revised PII	'Investing in mutual funds and stocks to me is': (followed by PII scale)	Zaichkowsky[36]
SEE involvement	The 10-item revised PII	'Purchasing environmental or ethical goods and services to me is': (followed by PII scale)	Zaichkowsky[36]
Perceived financial knowledge	Single item	'I think that my knowledge regarding investments in mutual funds and stocks is':	Similar to Martenson[20,37]
Perceived SEE knowledge	Single item	'I think that my knowledge regarding the ethical and environmental guidelines that are used in SRI profiled mutual funds is':	
Dependent variables			
Type of information	11 empirically generated items	Past financial return[a] Risk level[a] Geographic orientation[a] Specific industries[a] Specific stocks included[a] Fund manager[a] Investment fees[a] Criteria for exclusion of stocks[b] Strategies for influencing companies[b] Donations to charity[b] SEE investment guidelines[b]	
Source of information	14 empirically and theoretically generated items	Financial advisor Education/seminars Friends/family Fact sheet about fund Advertising Periodicals Financial press Books Daily papers Fund provider (on the internet) Bank (on the internet) Daily papers (on the internet) Fund comparison services[c] (on the internet) Other internet sources	Jarvis[19]; Lin and Lee[12]; Lee and Cho[27]; Capon *et al*[32]
Amount of information	Single item	'In your own opinion, how much information did you collect prior to deciding which SRI fund to invest in'	

[a]Financial-type information.
[b]Social, ethical and environmental (SEE)-type information.
[c]For example Morningstar.

gathered (2) the *source* of this information, and (3) the *type* of information (or attributes) that is desired in the search. In measuring the sources and types of information gathered by SR-investors, different sources and types of information were listed in the questionnaire. The respondents were instructed to indicate how much they used a particular source/type of information before investing in the SRI profiled mutual fund. The amount of information was measured with a single item asking the respondents to rate how much information they felt they gathered before investing in the SRI profiled mutual fund.

The predictor variables – involvement and perceived knowledge

The predictor variables in this study focus on two constructs that have been shown to be relevant for consumer search behavior in general: involvement and perceived knowledge. With regard to involvement, the focus of this study is on both *financial involvement* and *SEE involvement*. The measurements of both of these were based on the Zaichkowsky[36] personal involvement inventory (PII). The PII has been frequently used as a measure of involvement in previous research both in the SEE consumer behavior context[23] and in the financial services context.[38] In order to measure financial involvement, the scale was used with the accompanying question 'investing in mutual funds and stocks to me is'. In order to measure consumers' involvement while purchasing SEE profiled goods and services, the index was used with the statement 'purchasing environmental or ethical goods and services to me is'. As in previous research, the scales received high Cronbach alpha values (0.93 for SEE involvement and 0.95 for financial involvement).

As described above, the perceived knowledge construct was divided into two separate parts for the purpose of this study. The two constructs were measured with one item each. For *perceived financial knowledge,* the respondents answered the statement 'I think that my knowledge regarding investments in mutual funds and stocks is' on a 5-point Likert scale anchored by very poor and very good. *Perceived SEE knowledge* was measured with the statement 'I think that my knowledge regarding the ethical and environmental guidelines that are used in SRI profiled mutual funds is' also on a 5-point Likert scale.

Data analysis

In order to examine the research questions of the study, the analysis was conducted in two steps. First, in order to address the first questions that dealt with what information investors gather before investing in SRI, the means of the different types of information was examined in a

descriptive manner. Second, in order to address the influence of different types of involvement and knowledge, we conducted multiple *t*-tests with the different types of knowledge and involvement as independent variables and the three aspects of information search (type, amount and sources) as dependent variables. However, before doing this, all four independent variables were categorized into 'high' and 'low' by splitting them at the mean.

Results of the study

The type of information and sources used by SR-investors

The results of the study are presented in Tables 3.2–3.4. Starting with Table 3.2, the sample means indicate that SR-investors search more for SEE information than financial information before investing in SRI profiled mutual funds. In fact, the top three types of information categories were all SEE in nature. The category of information most searched for was the criteria for exclusion of stocks used by the mutual fund followed by the SEE guidelines for investment, and the specific strategies for influencing companies. Thus, these results indicate that before investing in SRI profiled mutual funds, investors want to know *what* guidelines the fund has for taking social responsibility, *what* stocks they exclude and *how* the fund attempts to influence corporate behavior. Of the financial information categories, investors searched the most for the funds' risk level, industries invested in and the fees charged by the mutual fund company.

Turning to Table 3.3, the sample mean indicate that financial advisors were the most popular source used by SR-investors to get information about the SRI profiled mutual fund. This is not surprising, given the influence of financial advisors documented in previous research.[20]

Hypotheses tests – the influence of involvement and perceived knowledge on search behavior

After having reviewed the results in a descriptive manner, we turn to the second research question regarding the influence of different types of involvement and knowledge on information search behavior. Tables 3.2–3.4 present the means and whether there were any significant differences between the groups.

The impact of involvement on consumer search behavior for SRI mutual funds

The results of the *t*-tests displayed in Tables 3.2–3.4 indicate that both financial and SEE involvement plays an important role for the

Table 3.2 *T*-tests on the influence of the different types of involvement and knowledge on the types of information used by socially responsible investors

Type of information[a]	Sample mean (SD)	Involvement						Perceived knowledge					
		Financial			SEE			Financial			SEE		
		Low	High	n	Low	High	n	Low	High	n	Low	High	n
Financial information													
Past financial return	2.75 (1.2)	**2.48**	**2.98**	327	2.85	2.64	331	**2.58**	**2.92**	353	2.70	2.77	348
Risk level	3.06 (1.0)	**2.86**	**3.27**	325	3.14	3.01	329	**2.89**	**3.21**	348	2.96	3.13	344
Geographic orientation	2.64 (1.1)	2.61	2.69	327	**2.45**	**2.77**	331	**2.51**	**2.75**	349	**2.39**	**2.90**	345
Specific industries	2.92 (1.1)	2.82	3.02	327	**2.75**	**3.06**	331	2.81	3.02	349	**2.71**	**3.13**	344
Specific stocks included	2.68 (1.1)	**2.46**	**2.91**	327	2.64	2.69	331	**2.47**	**2.86**	350	**2.49**	**2.85**	346
Fund manager	2.69 (1.1)	**2.54**	**2.87**	326	2.74	2.65	330	**2.57**	**2.80**	350	**2.53**	**2.85**	346
Investment fees	2.81 (1.2)	**2.59**	**2.98**	325	2.78	2.80	328	**2.58**	**3.01**	348	**2.66**	**2.96**	344
SEE information													
Criteria for exclusion of stocks	3.51 (1.2)	3.53	3.48	327	**3.21**	**3.76**	331	3.49	3.53	354	**3.24**	**3.84**	350
Strategies for influencing companies	3.20 (1.2)	3.19	3.24	326	**2.91**	**3.42**	330	3.10	3.29	351	**2.86**	**3.55**	346
Donations to charity	2.85 (1.2)	2.78	2.94	325	**2.65**	**3.01**	329	2.88	2.82	350	**2.64**	**3.04**	346
SEE investment guidelines	3.29 (1.2)	3.32	3.32	327	**2.91**	**3.60**	331	3.32	3.33	352	**2.95**	**3.64**	347

[a]Measured on a 5-point scale where 1 = very little and 5 = very much.
Bold: significant difference at $P < 0.05$.

Table 3.3 *T*-tests on the influence of the different types of involvement and knowledge on the sources used by socially responsible investors

Source[a]	Sample mean (SD)	Involvement						Perceived knowledge					
		Financial			SEE			Financial			SEE		
		Low	High	n	Low	High	n	Low	High	n	Low	High	n
Personal sources													
Financial advisor	2.52 (1.8)	2.65	2.35	328	2.51	2.46	332	**2.74**	**2.32**	356	2.53	2.46	352
Education/seminars	0.82 (1.1)	0.85	0.80	322	0.80	0.81	326	0.74	0.91	340	0.75	0.89	337
Friends/family	1.15 (1.3)	1.19	1.10	324	1.08	1.18	328	1.28	1.02	342	1.06	1.22	339
From SRI provider													
Fact sheet about fund	2.37 (1.8)	2.19	2.46	325	2.18	2.45	329	**2.05**	**2.71**	350	**2.08**	**2.71**	347
Advertising	1.24 (1.3)	1.12	1.31	325	1.18	1.25	329	1.21	1.28	346	1.16	1.31	344
Printed sources													
Periodicals	1.29 (1.5)	1.19	1.35	325	1.25	1.31	330	1.13	1.43	347	1.20	1.41	345
Financial press	1.49 (1.6)	**1.08**	**1.83**	325	1.63	1.37	329	**1.07**	**1.88**	349	1.36	1.61	346
Books	0.73 (1.0)	0.71	0.74	324	0.73	0.73	329	0.67	0.80	346	0.64	0.83	344
Daily papers	1.97 (1.7)	**1.76**	**2.13**	326	1.91	2.00	330	1.80	2.10	350	1.84	2.10	347
Internet sources													
Fund provider	1.62 (1.7)	**1.42**	**1.81**	323	1.64	1.61	327	**1.38**	**1.86**	346	1.55	1.70	343
Bank	1.59 (1.7)	1.44	1.73	323	1.54	1.62	328	1.41	1.76	347	1.49	1.68	344
Daily papers	1.07 (1.5)	**0.90**	**1.22**	324	**1.24**	**0.92**	329	0.97	1.16	345	1.00	1.12	342
Fund comparison services[b]	1.00 (1.3)	**0.83**	**1.16**	325	1.04	0.95	329	**0.76**	**1.22**	348	0.93	1.04	345
Other internet sources	0.88 (1.3)	0.83	0.94	326	0.85	0.93	330	**0.70**	**1.04**	349	0.75	0.98	346

[a]Measured on a 6-point scale where 0 = not used at all and 5 = used a lot.
[b]For example, Morningstar.
Bold: significant difference at $P < 0.05$.

information search process used by SR-investors. Turning, first, to financial involvement and the type of information searched for, the first column of Table 3.2 shows that financially involved investors search significantly more for the financial information categories of funds' past return, level of risk, fees, specific stocks included and reputation of the fund manager than do less financially involved SR-investors. Moreover, the same column displays that financial involvement had no effect in search behavior for *any* of the SEE categories of information. In all, this suggests that financially involved investors use financial information more and, thus provides support for Hypothesis 1a. With regard to the sources used before investing (Hypothesis 1b), the first column of Table 3.3 shows that there was no significant difference in how financially involved investors use financial advisors $t(326) = 1.47$, $P > 0.05$. Finally, as shown in the first column of Table 3.4, financial involvement also leads to an increased amount of overall search $t(327) = -2.25$, $P < 0.05$, providing support for Hypothesis 1c.

Turning to the impact of SEE involvement, the second column of Table 3.2 shows that investors involved with SEE issues search more for all four SEE categories of information. However, the *t*-tests showed that SEE involvement also resulted in increased search for some financial information (geographic orientation and industries included). As SEE involvement leads to increased search for SEE as well as some financial information, we conclude that there is partial support for Hypothesis 2a. As the second column of Table 3.3 indicates that SEE involvement did not lead to less usage of advice from financial advisors, Hypothesis 2b was not supported $t(330) = 0.26$, $P > 0.05$. However, as indicated in the second column of Table 3.4, SEE involvement did lead to increased search behavior overall $t(331) = -2.17$, $P < 0.05$, providing support for Hypothesis 2c.

The impact of perceived knowledge on consumer search behavior for SRI mutual funds

Tables 3.2–3.4 also display the impact of perceived financial and SEE knowledge on consumer information search behavior. As indicated in the third column of Table 3.2, perceived financial knowledge had a positive impact on six out of seven financial categories of information. However, the same column reveals that just like financial involvement, perceived financial knowledge did not have a significant impact on *any* of the SEE information categories, providing support for Hypothesis 3a. Moreover, the third column of Table 3.3 shows that support for Hypothesis 3b was found as investors with high perceived financial

Table 3.4 *T*-tests on the influence of the different types of involvement and knowledge on the amount of information gathered prior to investing in SRI profiled mutual funds

	Sample mean (SD)	Involvement						Perceived knowledge					
		Financial			SEE			Financial			SEE		
		Low	High	n	Low	High	n	Low	High	n	Low	High	n
Amount of information[a]	2.52 (1.0)	**2.36**	**2.61**	329	**2.36**	**2.60**	333	**2.36**	**2.66**	362	**2.20**	**2.85**	358

[a]Measured on a 5-point scale where 1 = very little and 5 = very much.
Bold: significant difference at $P < 0.05$.

knowledge took less advice from financial advisors $t(354) = 2.13$, $P < 0.05$. Hypothesis 3c is also supported as investors high in perceived SEE knowledge searched for more information overall $t(360) = -2.92$, $P < 0.05$, as indicated in the third column of Table 3.4.

With regard to the influence of perceived SEE knowledge on search behavior, the fourth column of Table 3.2 indicates that consumers high in this type of knowledge search more for both SEE and financial information. The only categories of information that these investors did not search more for was the funds' past return and level of risk. As perceived SEE knowledge generated search for both financial and SEE categories of information, partial support is found for Hypothesis 4a. The fourth column of Table 3.3 shows that no support is found for Hypothesis 4b as perceived SEE knowledge did not lead to less use of advice from financial advisors $t(350) = 0.32$, $P > 0.05$. Finally, Hypothesis 4c is supported as respondents high in perceived SEE knowledge also searched for more information overall $t(356) = -6.31$, $P < 0.05$, as displayed in the fourth column of Table 3.4.

Discussion

This study is an investigation into the information search behavior of SR-investors, which has previously been a scarcely researched area in the literature. One of the more interesting results of the study is that SR-investors, in general, search more for information regarding SEE aspects of the SRI profiled fund than traditional financial criteria. The fact that SEE issues seem to be *more* important in the information search process is somewhat surprising, given the importance of the financial aspects of any investment decision. One likely explanation of

this behavior is that SR-investors may very well have a greater interest for SEE issues than for financial issues. Previous research has indicated that many consumers are not very interested in investments.[28,32] For SEE issues, however, the case is reversed as studies report that as much as 90 per cent of the population is concerned about the environment.[39] Thus, investors may enjoy searching for information regarding SEE characteristics of the SRI profiled mutual fund as this is seen as more interesting.

With regard to the influence of the financial and SEE predictors on search behavior, this study shows that both financial and SEE predictors do have an effect on how private investors search for information before investing in SRI profiled mutual funds. For example, involved and knowledgeable consumers search for more information overall than consumers that were less involved and perceived themselves to have less knowledge. This is largely in line with previous research that highlights perceived knowledge and involvement as two main predictors of information search behavior.[12,16,17]

However, this study goes one step further than many previous studies on information search, in that it divides these constructs into two distinct parts: financial and SEE. In doing this, this study has highlighted that different *types* of involvement and perceived knowledge actually lead to different search behaviors. Financial involvement and knowledge largely lead to an external search process that is focused on financial aspects of the mutual fund. Investors in this group want to know how the fund has performed in the past and its level of risk, most likely in order to make a good financial choice when they invest their money. SEE involved and knowledgeable investors, on the other hand, search more for the relevant SEE information. These investors want to know the guidelines the fund has for practicing social responsibility and the criteria that are used for excluding stocks, most likely in order to make an investment decision that is good with regard to SEE standards. Taken together, a final conclusion of the study revolves around the notion that although some consequences of the different types of involvement and knowledge are similar, financially involved and knowledgeable investors go through a different external information search process than SEE involved and knowledgeable investors. Against this background, it is likely that the rest of the decision-making process is also different for these groups of investors.

On the basis of the above discussion, this study makes at least two contributions to the literature. First, it highlights the information search process of SR-investors, which has not previously been addressed

in the SRI or financial services literature. Second, and on a more general level, this study also contributes by separating the involvement and knowledge constructs into two different parts (SEE and financial) and shows that these different types of involvement and knowledge impact the search process in different ways.

Managerial implications

For practitioners within the SRI industry, this study contributes with a number of insights. First, the average SR-investor searches more for information about SEE characteristics than financial characteristics before investing in SRI. Thus, SRI providers within the industry should give SEE information a central role in their marketing and communication efforts. Second, the results show that the source used most by SR-investors was financial advisors. Previous research has shown that financial advisors may not give accurate advice regarding SR-investments.[40] It could therefore be of importance to make sure that this group has sufficient understanding and knowledge of SR-investment options. A final implication for practitioners within the industry is that SR-investors are not similar in their information needs. SRI providers, therefore, need to be prepared to generate customized information for different types of SR-investors.

Limitations of the study

There are a couple of limitations of the study that deserve mention. First, the sample of the study was generated from only one SRI provider and the average age was high. It is possible that these two sample-related issues could have had an impact on the results. Moreover, it is possible that the respondents could have been affected by the general instability that was present when the questionnaire was sent out (Spring 2009). However, as the questions largely dealt with past behavior, this is most likely to be a minor concern.

Suggestions for future research

Academia has only started to scratch the surface of generating an understanding of private investment in SRI. One important issue that has been brought up in this study is the complex interaction between the purely financial aspects and the SEE concern that investors deal with when making their decision to invest in an SRI profiled mutual fund. This interaction needs to be examined further in order to understand why consumers choose SRI profiled mutual funds. This study has addressed one stage of the decision-making process with this complex interaction in mind. Future research could focus on doing this with

regard to the other stages in the decision-making process. This is likely to generate a deeper understanding of the investment behavior of private SR-investors.

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4

Do Investors Show an Attentional Bias toward Past Performance? An Eye-Tracking Experiment on Visual Attention to Mutual Fund Disclosures in Simplified Fund Prospectuses

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Introduction

The task of financial decision making poses substantive challenges and difficulties for investors, which is not surprising given the complexity of financial products and the neverending innovations in the financial services and information technology sectors. The thousands of options available to investors and the enhanced regulatory disclosure requirements demand a great deal of motivation and ability on the part of investors, and are often a source of information overload (Diacon and

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Hasseldine, 2007; Kozup and Hogarth, 2008; Kozup *et al*, 2008; Estelami, 2009). For example, in a survey by the Investment Company Institute (2006), many fund investors indicated that fund prospectuses are difficult to understand, and they stated their preference for graphics and charts over narrative descriptions of investments. It is therefore not surprising that investors overwhelmingly rely on past performance data and advertisements as important sources of information for decision making (Capon *et al*, 1996; Wilcox, 2003). Given that statutory prospectuses are complex and that graphical displays to enhance readability are generally absent, the Securities and Exchange Commission (SEC) adopted amendments to simplify disclosures. Investors are to be provided with key information, such as investment objectives, investment risks and costs, as well as past performance data, in a summary prospectus (SEC, 2009; Beshears *et al*, 2009). Given that financial services marketers selectively advertise their high-performing funds, which can create unrealistic return expectations, the SEC has also amended rules on past performance presentations. Moreover, the amended rules require a disclaimer warning that past performance is a poor indicator of future results (Feuerborn, 2001; Federal Register, 2003; Koehler and Mercer, 2009).

Because promotional material often contains performance information (Jones and Smythe, 2003; Koehler and Mercer, 2009; Lee *et al*, 2011a, 2011b), which can lead to biased risk-return perceptions (Moore *et al,* 1999; Diacon and Hasseldine, 2007; Kozup *et al*, 2008; Hüsser and Wirth, 2013), it is important to test whether information interventions (such as disclaimers) are of benefit to investors. The present study examined the effectiveness of disclaimers in a competing information environment to enhance external validity. In contrast to other studies, which tested the isolated impacts of disclosures together with past performance, such as costs and disclaimers (Pontari *et al*, 2009; Mercer *et al*, 2010), we provided investors with performance data that competed for attention with other investment-relevant information, such as investment objectives, arguments, risk-measures, fees, expenses and portfolio holdings. Moreover, we tested whether investors' limited attention (Barber and Odean, 2008) and extrapolation biases (De Bondt, 1993) might explain the return-chasing behaviors of mutual fund investors (for example, Karceski, 2002).

Theoretical framework

The theoretical framework of heuristically driven biases provides the context for the present study. Psychological work has revealed that individuals

tend to rely on heuristic approaches when making judgments about the likelihood of uncertain events (Tversky and Kahneman, 1974; Gilovich *et al*, 2002), and these heuristics have been found to apply in individuals' financial decision-making processes (Benartzi and Thaler, 2007). For example, Hedesström *et al* (2004) identified various heuristically driven biases, such as the default bias, the home bias, the use of the 1/*n* and diversification heuristic, and other cognitive simplifications, in a Swedish premium pension scheme; not surprisingly, many of these heuristic cues are prevalent in financial services advertisements (Lee *et al*, 2011b). Other judgmental heuristics, such as anchoring and representativeness, are of particular and practical importance in financial market decisions (Jordan and Kaas, 2002). For example, investors anchor their forecasts on price-earnings ratios and dividend yields (Fisher and Statman, 2000), and often consider past returns to be representative of future returns (Chen *et al*, 2007), approaches that are based on extrapolations of past performance data (Benartzi, 2001). Researchers have also recognized the importance of heuristics and biases in aggregated market phenomena, such as stock market bubbles (Johnson and Tellis, 2005), stock market overreactions (De Bondt and Thaler, 1985) and herding behaviors (Devenow and Welch, 1996).

Background and literature review

Mutual fund investors' preferences for past performance data

Surveys of individual investors show that prior fund performance is one of the most important selection criteria used by investors to make mutual fund purchase decisions (Capon *et al*, 1994; Capon *et al*, 1996; Investment Company Institute, 2006). For example, a conjoint analysis by Wilcox (2003) found historical and 1-year performance to be the most important characteristics used by investors to make mutual fund decisions. Clark-Murphy and Soutar (2004) found, via a survey of individual investors in Australia, that a share's past price trend was the third-most valued attribute. In experiments by Choi *et al* (2010), all subjects were found to weight past returns highly in their mutual fund purchase decisions. Another experiment by Kliger *et al* (2003) showed that willingness to invest in a fund was strongly correlated with its absolute performance and its (relative) performance related to that of other funds, even when past performance was uninformative or because of chance. Diacon and Hasseldine (2007) found that approximately one half of respondents find past performance information helpful in financial decision making. In addition, the preferences of investors for past

performance data and graphics is in agreement with the literature on decision making by consumers; in general, individuals make decisions based on attributes that are more cognitively accessible, salient and easier to understand (Higgins, 1996; Hsee *et al*, 1999; Wilcox, 2003).

The reliance of individual investors on past performance data is also in line with a significant body of literature on aggregated fund flows, confirming that fund inflows are related to excess returns (Ippolito, 1992; Chevalier and Ellison, 1997; Sirri and Tufano, 1998; Berk and Green, 2004). However, given that past performance is normatively irrelevant (Fama, 1970), and based on the evidence that superior performance does not persist in the long term (Hendricks *et al*, 1993; Carhart, 1997; Drew *et al*, 2002; Bollen and Busse, 2004), researchers have noted that such return-chasing behavior is irrational and related to behavioral biases and the application of heuristics, such as representativeness and availability (Berk and Green, 2004; Mitchell and Utkus, 2004; Diacon and Hasseldine, 2007; Bailey *et al*, 2011).

The role of investor attention

Psychological research has shown that the attention and cognitive capacities of individuals are limited. Limited attention is a natural consequence of the vast amount of information and choices available to consumers. Because individuals can only process a certain amount of information in a given time, they must divide their cognitive capacities between competing tasks. Thus, attention is not only a limited and scarce resource, and cognitively effortful, but is also selective (Kahneman, 1973; Pashler, 1998; Daniel *et al*, 2002; Peng and Xiong, 2006; Hirshleifer *et al*, 2011). Attention is captured by the salience of a stimulus, which is conceptualized as an aspect or a feature that is striking, prominent or outstanding in relation to its background. Salient features attract and selectively hold attention, and are therefore more prominent and applicable during decision-making processes (Taylor and Fiske, 1978; Higgins, 1996; Hirshleifer and Teoh, 2003).

Attention has long been recognized by economists as a crucial decision-making variable for investors (Daniel *et al*, 2002; Peng and Xiong, 2006; Peng *et al*, 2007; Hirshleifer *et al*, 2011; Li and Yu, 2012). Contrary to the efficient market hypothesis (Fama, 1970), publicly available information or news is not incorporated into pricing until investors have drawn attention to the news or information (Huberman and Regev, 2001; Peng and Xiong, 2006; Kaniel and Starks, 2007). Given that investors must choose between thousands of stocks, Odean (1999) has argued that investors buy stocks that have recently caught

their attention. Barber and Odean (2008) tested and confirmed that investors purchase attention-grabbing stocks that have been featured in the news, or stocks with abnormally high trading volumes. Similarly, Barber *et al* (2005) have argued that purchasing decisions by mutual fund investors are driven by salient and attention-grabbing information. That is, investors purchase funds that have attracted their attention through superior performance, or through marketing techniques such as advertising. Similarly, Jain and Wu (2000) found that advertised funds attracted considerably higher fund flows than did a control group of non-advertised peer funds with similar pre-advertising performances. Similarly, Korkeamaki *et al* (2007) showed that advertising, together with past performance, significantly attracted fund inflows. Other studies have found positive relationships between mutual fund flows and mutual fund advertising expenditures (Gallaher *et al*, 2005), as well as between fund flows and media coverage (Kaniel and Starks, 2007; Solomon *et al*, 2014). These findings are consistent with observations of investors' limited attention and with salience effects (Daniel *et al*, 2002).

Representativeness and extrapolation

The phenomenon of *representativeness* is the tendency to select outcomes that are similar to the essential features of the evidence, or to see events as representative of a specific class or category, thereby ignoring factors such as probabilities or reliabilities of outcomes or underlying causal processes (Kahneman and Tversky, 1972, 1973; Tversky and Kahneman, 1974; Barberis *et al*, 1998). In other words, representativeness refers to a reliance on stereotyping (Shefrin, 2000). At the same time, probability judgments based on representativeness systematically violate Bayes' rule (Kahneman and Tversky, 1973; Grether, 1980); for example, investors may misattribute a period of earnings growth to a representative characteristic of a growth in a firm, while neglecting the base-rate information that very few firms maintain such growth (Barberis *et al*, 1998).

Psychological research has also shown that people see patterns in random sequences (Tversky and Kahneman, 1971). Similarly, De Bondt (1993) found strong evidence that people expect past price trends to continue. Chen *et al* (2007) revealed that Chinese investors believe that past returns are representative of future returns. That is, purchase decisions are based on past winners and on the most recent performances of stocks. Other research has provided similar evidence for trend-chasing behavior and time-series extrapolation (Andreassen, 1988; Lawrence and O'Connor, 1992; Dhar and Kumar, 2001). The *extrapolation* bias suggests that investors believe in performance persistence (Jain and

Wu, 2000) or in a 'hot hand' effect (Gilovich *et al*, 1985; Camerer, 1989; Johnson and Tellis, 2005; Koehler and Mercer, 2009). However, this extrapolation bias contradicts the efficient market hypothesis (Fama, 1970), which states that past performance has no predictive value and that price changes follow a 'random walk' (Fama, 1965).

Related work

An experiment by Kozup *et al* (2008) showed that the presentation of prior fund performance leads to biased risk-return perceptions. That is, the presentation of above-average fund performance in promotional material, as compared with the presentation of below-average fund performance, leads to more favorable attitudes, higher future return expectations, higher purchase intentions and lower perceived risk. Similarly, Jordan and Kaas (2002) found that a high anchor value in a mutual fund advertisement led to higher expected returns, as compared with a low anchor value, even though the anchor was uninformative in nature. In another study, Diacon and Hasseldine (2007) showed that the presentation format of past performance leads to biased risk-return perceptions. Return and risk perceptions were higher when past performance of an FTSE tracker fund was presented in annual bar charts, as compared with its presentation in terms of the fund's value. Choi *et al* (2010) conducted two experiments in which investors failed to minimize portfolio fees when allocating a given investment amount among four index mutual funds, even when the search cost for fees was eliminated. Furthermore, highlighting of a fund's performance since inception led cost-sensitive MBA students and less-knowledgeable college students to chase returns. The authors concluded that the investment patterns are sensible, given that advertising tends to highlight past returns (for example, Hendricks *et al*, 1993; Jain and Wu, 2000; Mullainathan *et al*, 2008).

In another experiment, Mercer *et al* (2010) tested the SEC's mandated disclaimer that past performance does not guarantee future results in mutual fund advertising. The authors found that disclaimers were ineffective. The only provision that was effective in reducing investors' return expectations, the belief that the fund will outperform its peers in the future, and willingness to invest, was the provision of a stronger disclaimer. However, the advertisements contained only a short description of the fund's investment objectives and a bar graph of the fund's returns, as compared with a bar graph of the returns of comparable competitors over the past few years; the advertisements did not contain any further investment-related information. Moreover, the authors point out that the effectiveness of disclaimers may be overestimated, as in

real-world situations, less attention is likely paid to disclaimers than in experimental forced-exposure conditions.

Research questions and hypotheses

Researchers have noted the importance of clarifying whether disclosures (for example, warnings) are ineffective because they are attended to but not incorporated into judgment, or because they simply do not receive attention (Stewart and Martin, 1994, 2004). It is therefore important to clarify whether disclaimers are attended to or not, given that other investment-relevant information is competing for attention in a financial decision-making situation. Thus, the first research question is:

RQ1: Will investors attend to the disclaimer presented in a mutual fund prospectus?

Although the allocation of attention is a necessary prerequisite for information encoding (Lang, 2000), attention to a disclosure does not imply that consumers will comprehend the content of the disclosure, or alter their ensuing attitudes and behaviors (Stewart and Martin, 1994). Attention is a necessary but not a sufficient prerequisite for changes in consumer attitudes and behavior as related to the content of the message (Stewart and Martin, 2004; Graham *et al*, 2012). On the basis of the premise that investors will attend to the disclaimer, the second research questions is as follows:

RQ2: Will the disclaimer be effective in reducing investors' extrapolation bias?

On the basis of the literature review presented above, the following hypotheses are proposed:

Hypothesis 1: Salient graphical information about past performance (presented to an experimental group of investors) will attract more attention than will graphical information on topics unrelated to past performance (presented to a control group of investors).

Hypothesis 2: Investors receiving salient graphical information about past performance (presented to an experimental group of investors) will have higher future return expectations, more favorable attitudes toward the specific fund and higher purchase intentions than will investors receiving salient graphical information about topics unrelated to past performance (presented to a control group of investors).

Methodology

Experimental design and stimulus material

To test our hypotheses, we employed a one factorial (disclaimer provided versus not provided) between-subjects design, with an additional control group for a baseline comparison. A two-sided fund prospectus was created for each treatment condition. We followed regulatory requirements, as well as actual representations of fund guides, advertisements and prospectuses to create the fund prospectuses. The prospectuses were labeled 'USA Total Growth Fund (USD)'. The first side of the fund prospectus disclosed the fund's summary data, investment objectives, arguments reinforcing the investment objectives, 3-year risk measures, and annual fees and expenses. The second side of the fund prospectus consisted of salient graphical information showing a 5-year performance chart indicating that the fund outperformed the S&P 500 (TR) index, as well as a figure comparing the fund's annual returns with the benchmark. The graphical information showing the 5-year performance chart and total annual returns was provided either with or without a disclaimer at the bottom of the graphic. The disclaimer warned that past performance is a poor indicator of future results and that investment returns fluctuate, so that shares are worth more or less when redeemed than when purchased. The disclaimer was presented in the same font type and size (Arial, 12 pt.) as all of the other disclosures, and thus was in full compliance with SEC regulations (Federal Register, 2003). The second side of the prospectus also listed the top 10 stock holdings of the portfolio.

To test whether participants extrapolated past fund performance, and to test the effectiveness of the disclaimer, we employed an additional control group that served as an unbiased baseline, enabling us to directly compare the behaviors of participants who received performance data with and without a disclaimer to the behaviors of the control group, who received no performance data and no disclaimer. If the disclaimer was effective, participants who received a disclaimer would have lower future return expectations, lower attitudes toward the specific fund and lower purchase intentions as compared with the participants who received the performance data with no disclaimer. However, the disclaimer may be effective if participants ignore past fund performance in their decision making. If participants' future return expectations, attitudes toward the specific fund and purchase intentions are higher in the performance conditions than in the control group, then such a result suggests that disclaimers are ineffective (Mercer *et al*, 2010).

Prior research on visual attention to advertising has revealed that pictorial information is superior to that of text in capturing readers' attention, and that the size of advertising objects affects consumers' attention; it has therefore been argued that size effects must be controlled for, to collect unbiased evidence related to the importance and informativeness of advertising objects (Rayner *et al*, 2001; Pieters and Wedel, 2004, 2007; Pieters *et al*, 2007). For this reason, the control group was provided with graphical information about topics other than past performance, and the size of graphical information in all treatment conditions was the same; all other presented information was identical. The graphical information provided to the control group visually displayed the funds' investment philosophy on a coordinate system. The *x*-axis was subdivided into low and high Return on Investment Capital and the *y*-axis was segmented into cyclical, growth and sustainable. The coordinate system gave some sample stocks of the portfolio holdings, which were classified according to the characteristics of the *x* and *y*-axes. Both sides of the prospectus were presented simultaneously to participants on laboratory computer screens. The treatment conditions are depicted in Figure 4.1.

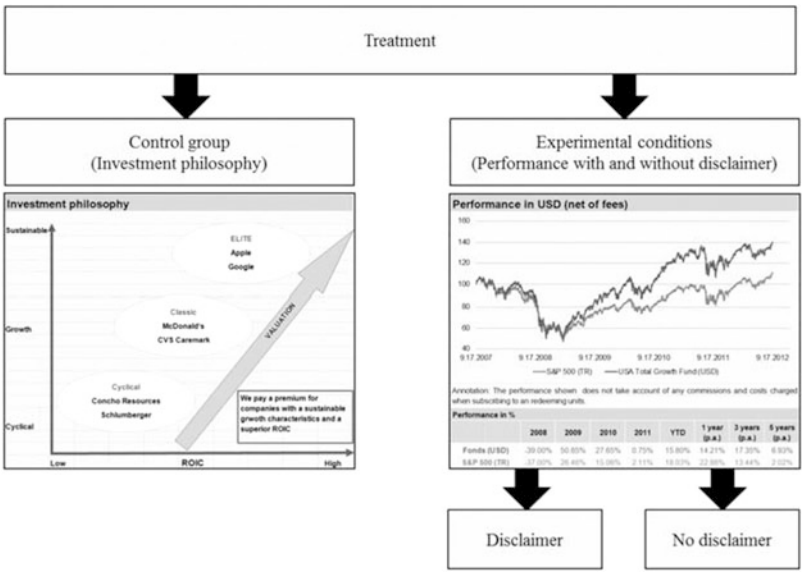

Figure 4.1 Overview of the treatment conditions

Pre-test of graphical information

Given that a longer *gaze duration* may reflects a higher degree of complexity or difficulty in the encoding of information (Just and Carpenter, 1976; Carpenter and Shah, 1998), a pre-test was conducted using a within-subjects design. A total of 97 students participated in the experiment for extra course credit. All participants viewed five graphics that were randomized in their presentation order and that differed in type and complexity. Among them was the graphical information about the investment philosophy and past performance data. For each graphic, the complexity was measured using five 5-point Likert-type scales (The graphical information is easily intelligible; I find it easy to understand what the graphic is about; I find it easy to extract key information from the graphic; It becomes quickly clear to me what the main message of the graphic is; The graphic is complex (reverse coded)), anchored from 1 = 'I strongly disagree' to 5 = 'I strongly agree'. The five items were used to build mean indices for the investment philosophy ($M = 2.77$, SD = 0.93, $\alpha = 0.89$) and the performance data ($M = 2.84$, SD = 0.86, $\alpha = 0.84$). A paired *t*-test revealed no significant difference between the graphical information portraying investment philosophy versus that portraying performance data ($t(96) = -1.024$, P = NS). This result suggests that the graphics portraying the investment philosophy and the past performance data did not differ in their complexity.

Participants and procedure

A total of 100 advanced business students (99 per cent male) with different specializations (68 per cent in finance) participated in the experiment. According to Jordan and Kaas (2002), advanced business students are a good proxy for private investors. All of the participants indicated that financial investing was personally relevant to them.

The experiment took place in a public university conference room. Participants were assessed individually and randomly assigned to the different treatment conditions. All participants had 3 min to review the prospectus before responding to the questionnaire; the 3-min exposure time to the stimulus was chosen to ensure comparability of eye-tracking data among participants, as well as to reduce exposure time variance. Pre-testing showed that 3 min was generally a sufficient amount of time to read a fund prospectus. The time limitation was also imposed for external validity. Choi *et al* (2010) showed that a sample of highly motivated Harvard staff spent an average of 14 min to read four

index mutual fund prospectuses; MBAs spent about 12 min and college students about 9 min to read the same four prospectuses. After 3 min, participants were automatically forwarded to the questionnaire.

Measures

Dependent variables

Visual attention was measured using an unobtrusive infrared eye-tracking system (SensoMotoric Instruments). The system included eye-tracking hardware and data analysis software. As in previous studies (Rayner *et al*, 2001; Pieters and Wedel, 2004; Rayner *et al,* 2008), we employed *gaze duration* as an indicator of visual attention to the different information disclosed in the mutual fund prospectuses, defined as the sum of all fixation durations of participants viewing an object in a prospectus[1] (Henderson, 1993; Zelinsky and Murphy, 2000). An object that holds a participant's attention longer is reflected in a longer gaze duration (Russo and Leclerc, 1994; Pieters and Wedel, 2007).

Return expectations associated with investing in the mutual fund were measured with three 5-point semantic differentials (favorable/unfavorable (reverse coded), negative/positive and bad/good), with higher values indicating higher return expectations. The three semantic differentials were used to build a mean return expectations index ($M = 3.47$, $SD = 0.69$, $\alpha = 0.81$).

Attitudes toward the specific fund were measured with three 5-point semantic differentials (bad/good, not attractive/attractive and not profitable/profitable), with higher values indicating more favorable attitudes toward the specific fund. The three semantic differentials were used to build a mean attitude index ($M = 3.20$, $SD = 0.72$, $\alpha = 0.79$).

Purchase intentions were measured by asking investors how likely it is that they would invest in the fund (1 = 'less likely' to 5 = 'very likely') and if they could readily imagine investing in the fund (1 = 'I completely disagree' to 5 = 'I completely agree'). The two items were used to build a mean purchase intention index ($M = 2.39$, $SD = 0.96$, $r(99) = 0.687$, $P < 0.001$), with higher values indicating higher purchase intentions.

At the end of the questionnaire, investors were asked whether they could remember a number of fund characteristics presented to them in the fund prospectus. For each characteristic or disclosure, participants answered with 1 = 'yes was contained' or 2 = 'no was not contained'.

The recognition test was used as an added measure (in addition to that of gaze duration) of attending to and encoding the disclaimer information (Lang, 2000; Argo and Main, 2004).

Covariates

Analyses were controlled for investors' trading experience ($M = 3.23$, $SD = 1.18$). Using a 5-point Likert-type scale, participants rated the extent to which they considered themselves to be experienced in financial investing (1 = 'not at all experienced' to 5 = 'very experienced'). Research suggests that investors not only learn from their trading experience, but that greater experience may also reduce behavioral biases (Feng and Seasholes, 2005; Nicolosi *et al*, 2009).

Participants' attitudes toward financial products in general ($M = 3.91$, $SD = 0.86$), as well as their attitudes toward the product class (mutual funds) in particular ($M = 3.40$, $SD = 1.02$), were measured by asking participants to rate their attitudes on a 5-point Likert-type scale (1 = 'very negative' to 5 = 'very positive'). Overall attitudes toward financial products, as well as attitudes toward the product class itself, influence consumers' product evaluations and attitudes (Kozup *et al*, 2008).

The perceived strength of arguments reinforcing investment objectives was measured using five items from the Perceived Argument Strength Scale (Zhao *et al*, 2011), which were adapted to the context of mutual fund investing. Participants rated the extent to which they considered that the arguments about investment objectives were important, helpful and believable, as well as whether the arguments made them feel confident about investing (1 = 'I strongly disagree' to 5 = 'I strongly agree'). Moreover, participants rated the extent to which they considered that the arguments about investment objectives gave weak or strong reasons to invest in the fund (1 = 'very weak reasons' to 5 = 'very strong reasons'). These five items were used to build a perceived argument strength index ($M = 3.09$, $SD = 0.67$, $\alpha = 0.75$). Perceived argument strength was controlled because argument quality exerts a much greater influence on attitude formation than do heuristic cues in highly involved and personally relevant tasks (Chaiken and Trope, 1999), such as those that apply to investment services (Aldlaigan and Buttle, 2001).

Analyses were further controlled for participants' interest in the survey ($M = 4.42$, $SD = 1.02$) using a 5-point Likert-type scale (1 = 'not at all interested' to 5 = 'highly interested'). This measure was controlled because less interested participants are more likely to move through the questionnaire without paying careful attention.

Results

Tests of hypotheses

To test the hypotheses, a one-way MANCOVA was performed with the treatment condition (control group versus performance data with disclaimer versus performance data without disclaimer) as the independent factor. Investors' gaze duration toward graphical information, returns expected for investing in the fund, attitudes toward the specific fund and investors' purchase intensions served as dependent variables. Investors' trading experience, attitudes toward financial products in general, attitudes toward mutual funds in particular, perceived argument strength of investment objectives and interests in the survey were included as covariates. Multivariate tests revealed that the treatment condition significantly influenced the dependent variables (Wilks' $\lambda = 0.825$, $F(8, 178) = 2.251$, $P < 0.05$, $\eta^2 = 0.092$). Between-subject tests revealed a main effect of treatment condition on gaze duration for graphical information ($F(2, 92) = 6.026$, $P < 0.01$, $\eta^2 = 0.116$), on expected returns ($F(2, 92) = 3.436$, $P < 0.05$, $\eta^2 = 0.070$), and on attitudes toward the fund ($F(2, 92) = 3.138$, $P < 0.05$, $\eta^2 = 0.064$). However, there was no effect of treatment condition on investors' purchase intentions ($F(2, 92) < 1$). The results of the between-subjects tests are reported in Table 4.1. The estimated marginal means and standard errors for each treatment condition on the dependent variables are summarized in Table 4.2.

To test for specific group differences, we performed orthogonal planned contrasts. As it is standard in the social sciences to compare control groups to experimental conditions (first contrast), and then to see whether the two experimental conditions differ from one another (second contrast), we performed orthogonal Helmert contrasts. By breaking down the variance into its component parts, we were able to control for Type I errors (Field, 2009).

Impact of graphical information about past performance data on investors' attention

Hypothesis 1 states that graphical information about past performance will attract more investor attention, as compared with the graphical information about investment philosophy that was provided to the control group. On the basis of orthogonal planned contrasts, investors in the combined experimental groups paid significantly more attention to the graphical information about past performance data, as compared with the attention paid by investors in the control group to the graphical information about investment philosophy (difference: −8.923 s,

Table 4.1 Between-subjects tests

Source	Dependent variables	DF	*F*	*P*	η^2
Trading experience	Gaze duration	1	0.359	0.551	0.004
	Expected return	1	0.389	0.535	0.004
	Attitudes toward the fund	1	3.032	0.085	0.032
	Purchase intention	1	1.078	0.302	0.012
Attitudes financial products	Gaze duration	1	0.859	0.356	0.009
	Expected return	1	1.718	0.193	0.018
	Attitudes toward the fund	1	1.078	0.302	0.012
	Purchase intention	1	0.727	0.396	0.008
Attitudes mutual funds	Gaze duration	1	0.035	0.852	0.000
	Expected return	1	1.437	0.234	0.015
	Attitudes toward the fund	1	2.255	0.137	0.024
	Purchase intention	1	0.033	0.856	0.000
Perceived argument strength	Gaze duration	1	0.010	0.919	0.000
	Expected return	1	11.537	0.001	0.111
	Attitudes toward the fund	1	18.033	0.000	0.164
	Purchase intention	1	15.415	0.000	0.144
Study interest	Gaze duration	1	1.620	0.206	0.017
	Expected return	1	6.417	0.013	0.065
	Attitudes toward the fund	1	0.581	0.448	0.006
	Purchase intention	1	0.099	0.754	0.001
Treatment conditions	Gaze duration	2	6.026	0.003	0.116
	Expected return	2	3.436	0.036	0.070
	Attitudes toward the fund	2	3.138	0.048	0.064
	Purchase intention	2	0.805	0.450	0.017
Error	Gaze duration	92	—	—	—
	Expected return	92	—	—	—
	Attitudes toward the fund	92	—	—	—
	Purchase intention	92	—	—	—
Total	Gaze duration	100	—	—	—
	Expected return	100	—	—	—
	Attitudes toward the fund	100	—	—	—
	Purchase intention	100	—	—	—

SE = 2.625 s, $P < 0.01$). In addition, the attention paid to graphical information about past performance in the two different experimental conditions was not significantly different (difference: 2.557 s, SE = 2.934 s, P = NS). Therefore, Hypothesis 1 was supported by the data, indicating that investors had an attentional bias toward performance data.

Table 4.2 Estimated marginal means (EMMEANS) and standard errors (SE)

Treatment		Dependent variables							
		Gaze duration (s)		Expected return		Attitudes toward the fund		Purchase intention	
	n	**M**	**SE**	**M**	**SE**	**M**	**SE**	**M**	**SE**
Control group	32	23.888[a]	2.143	3.216[a]	0.117	2.952[a]	0.119	2.219[a]	0.163
Disclaimer	33	34.089[a]	2.117	3.604[a]	0.115	3.308[a]	0.118	2.494[a]	0.161
No disclaimer	35	31.532[a]	2.017	3.576[a]	0.110	3.325[a]	0.112	2.448[a]	0.153

[a]Covariates appearing in the model are evaluated at the following values: trading experience = 3.23, attitudes financial products = 3.91, attitudes mutual funds = 3.40, perceived argument strength = 3.09, survey interest = 4.42.

Impact of past performance data on future return expectations, attitudes toward the specific fund and investors' purchase intentions

Hypothesis 2 stated that providing investors with past performance data would result in higher future return expectations, more favorable attitudes toward the specific fund and higher purchase intentions on the part of the investors, as compared with the information given to the control group, which was unrelated to past performance. Helmert contrasts revealed that the combined experimental groups that received past performance data had higher future return expectations (difference: -0.374, SE $= 0.143$, $P < 0.05$) and more favorable attitudes toward the specific fund (difference: -0.364, SE $= 0.146$, $P < 0.05$) than did investors in the control group. However, investors in the combined experimental conditions did not exhibit higher purchase intentions than investors in the control group (difference: -0.252, SE $= 0.200$, $P =$ NS). Therefore, Hypothesis 2 was supported by the data, with the exception of the results for purchase intentions.

Research questions

The first research question asked whether investors would attend to the disclaimer or not. Descriptive statistics showed that gaze duration for the disclaimer was, on average, 6.78 s (SD = 4.11 s), a value that is significantly different from zero ($t(32) = 9.465$, $P < 0.001$). Moreover, in the experimental group who received a disclaimer, 76 per cent (25 of 33 participants) correctly indicated that the disclaimer was included in the prospectus, while in the experimental group who did not receive

a disclaimer, 9 per cent (3 of 35 participants) indicated that a disclaimer was included. This difference in recognition scores between the groups was significant: $\chi^2(1) = 31.654$, $P < 0.001$.

The second research question asked whether the disclaimer would be effective in reducing investors' extrapolation bias. Helmert contrasts revealed that investors receiving past performance data with or without a disclaimer did not significantly differ in their future return expectations (difference: 0.028, SE = 0.160, P = NS), or in their attitudes toward the specific fund (difference: −0.016, SE = 0.163, P = NS). Moreover, there was also no significant difference between the experimental conditions with and without the disclaimer regarding purchase intentions (difference: 0.046, SE = 0.223, P = NS). Thus, the mandated disclaimer by regulatory bodies did not have the intended impact, even though the disclaimer was attended to and properly encoded.

Mediation analysis

To provide further insights into underlying cognitive processes, we first propose a mediation model (Preacher and Hayes, 2008). If investors believe in performance persistence or in a 'hot hand' effect, the impact of past fund performance on purchase intentions should be mediated through future return expectations (Koehler and Mercer, 2009). Furthermore, when mutual fund purchases are driven by attention-grabbing information, such as past performance data (Barber *et al*, 2005), the impact of past performance data on purchase intentions should also be mediated through gaze duration (Zhang *et al*, 2009). To validate these assumptions, a mediation analysis (N = 100) was conducted, with investors' purchase intentions as the dependent variable, future return expectations and gaze duration for graphical information as mediators, and prior fund performance (0 = control group; 1 = experimental conditions) as the independent factor. The mediation model was controlled for the same five covariates as in the MANCOVA procedure reported above.

The mediation analysis revealed that prior fund performance significantly affected private investors' return expectations (b = 0.373, SE = 0.142, t = 2.630, $P < 0.05$), and led to longer gaze durations for past performance data (b = 8.811 s, SE = 2.619 s, t = 3.365, $P < 0.01$). Return expectations, in turn, significantly influenced private investors' purchase intentions (b = 0.280, SE = 0.140, t = 1.998, $P < 0.05$). A similar pattern also emerged for gaze duration. Gaze duration of past performance data significantly impacted investors' purchase intentions (b = 0.017,

Table 4.3 Indirect effects of past performance on purchase intentions through mediators

			Bootstrap 95% Confidence Intervals	
	Effect	**Bootstrap SE**	**Lower level**	**Upper level**
Total indirect effect	0.250	0.105	0.083	0.498
Expected return	0.105	0.073	0.009	0.312
Gaze duration	0.146	0.085	0.005	0.346

Note: Number of bootstrap samples: 1000.

SE = 0.008, $t = 2.181$, $P < 0.05$). Indirect effects of both past performance on purchase intentions through return expectations and gaze duration were significant. The model fit to the data showed: $R^2 = 0.254$, $F(8, 91) = 3.881$, $P < 0.001$. The indirect effects are summarized in Table 4.3.

Discussion

The goal of this study was to test whether investors' limited attention might contribute to the return-chasing behavior of mutual fund investors, by using an unobtrusive eye-tracking methodology. We found that past fund performance attracted considerable visual attention, indicating that investors were biased toward past fund performance in their information processing. This finding is in line with investors' limited attention and saliency effects (for example, Daniel *et al*, 2002), as well as with prior studies on fund flows and excess returns (for example, Jain and Wu, 2000). Furthermore, the effect of past performance on purchase intentions was fully mediated through return expectations and gaze duration for performance data. This indicates that investors extrapolated past performance and that they apparently believe in performance persistence or in a 'hot hand' effect (for example, Jain and Wu, 2000; Koehler and Mercer, 2009). Furthermore, the results suggest that the importance of past performance on investors' purchase intentions depends on the attention paid to the performance information (Mackenzie, 1986). The more attention investors give to past performance data, the higher were their purchase intentions. Moreover, the mandated disclaimer by regulatory bodies was shown to be ineffective in reducing investors' return expectations, attitudes toward the specific fund and purchase intentions. These results have

several implications, both practical and theoretical, as discussed in the following section.

Highlighting superior performance appears to be an efficient marketing strategy to attract investor attention and increase fund flows, as suggested by Barber *et al* (2005). Nevertheless, performance-based investing is problematic from a consumer investors' point of view, given that mutual fund marketers advertise their high-performing funds (Koehler and Mercer, 2009), and given that past performance is not a good predictor of future returns (for example, Drew *et al*, 2002). While there is some controversial evidence that past performance can persist in the long run and that a strong performance record is not solely because of chance (Grinblatt and Titman, 1992; Kosowski *et al*, 2006), researchers have concluded that picking skilled funds is difficult and not meaningful, given the transaction costs of rebalancing a portfolio, such as load costs and capital gain taxes (Cuthbertson *et al*, 2010; Mercer *et al*, 2010).

Moreover, the situation is all the more problematic in light of disclaimer ineffectiveness. Our study shows that disclaimers are attended to and properly encoded by investors, but that they fail to impact the relevant dependent variables. This failure of disclaimers may be explained by several factors. First, investors in the present study may have been familiar with financial products and mutual funds. Familiarity with a product has been shown to be not only negatively correlated with readings of product warnings, but also to lead to overconfidence and non-compliance with warning contents (Rogers *et al*, 2000). Second, the arguments presented in disclaimers may not be sufficiently strong, which may cause investors to counterargue the message (Rucker and Petty, 2006). Similarly, Mercer *et al* (2010) pointed out that the content of the mandated disclaimer is too weak, and does not provide new information to investors.

According to the well-known Elaboration Likelihood Model of Persuasion (Petty and Cacioppo, 1986), argument strength and quality exert a greater impact on attitude change than do simple heuristic cues in high-involving tasks, which applies to investment services (Aldlaigan and Buttle, 2001). Support for this notion can also be found in the present study: the perceived strength of the arguments reinforcing investment objectives had a stronger impact on the dependent variables than did past performance as a highly accessible heuristic cue. Therefore, future research should test more strongly worded disclaimers, as suggested by Mercer *et al* (2010). Third, the disclaimer may be ineffective because investors may lack the ability to process the disclaimer content in a more

cognitively effortful manner (Petty and Cacioppo, 1986; Rucker and Petty, 2006). Research in the area of nutrition labeling has revealed that increasing the salience of nutrition information attracts more attention (Graham *et al*, 2012). To the extent that gaze duration reflects underlying cognitive processes (Just and Carpenter, 1976), making disclaimers more salient would increase investors' ability for elaboration (Graham *et al*, 2012). Therefore, future research should not only vary the argument strength, but also the saliency of disclaimers (Mercer *et al*, 2010).

The present study has a number of limitations. First, the results of the study cannot be generalized to the entire population of investors, given the relatively homogenous sample of advanced business students. Prior research has shown that socio-demographic variables, such as age, gender and personality type influence risk taking behavior and financial decision making (Powell and Ansic, 1997; Nicholson *et al*, 2005; Lusardi and Mitchell, 2007). Moreover, financial knowledge has been shown to influence the processing and comprehension of mutual fund disclosures (Wang, 2011), as well as the impact of mutual fund disclosures on decision making (Kozup *et al*, 2008; Lee *et al*, 2012). Future research should consider socio-demographics as well as the investors' level of financial knowledge to obtain results that are more generalizable to the population of mutual fund investors.

Some limitations of this study are related to the methodology of eye tracking. Despite the advantages of eye tracking, which include its relative unobtrusiveness and precision in tracking the allocation of visual attention (Duchowski, 2007; Graham *et al*, 2012), it should be noted that an eye–mind association is an important premise of the methodology. The eye–mind assumption posits that gaze duration is a reflection of underlying cognitive processing (Just and Carpenter, 1976, 1980). Furthermore, participants who know that their eye movements are being recorded might behave differently than in real-life settings, in which their eye movements are not recorded (Graham *et al*, 2012). Moreover, eye tracking conveys nothing about underlying cognitions. Future research based on eye-tracking methodologies should consider including interviews with participants so as to explore their cognitive contents during the performance of tasks (Graham *et al*, 2012).

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Note

1. The software provided by SensoMotoric Instruments (SMI) refers to gaze duration as *dwell time*, which is computed as the sum of all fixation durations and saccades.

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5

The Role of Creative Strategy, Ad Disclosure and Regulatory Focus in Investors' Decision Making: An Experimental Investigation

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Financial services organizations (*hereafter*, FSOs) constitute the primary business sector in the US economy. However, the forces of dynamic changes in economy, politics and governmental regulations, technology, competition and socio-demographic conditions are aggressively challenging today's FSOs. Against this backdrop, financial services advertising (*hereafter*, FSA) has become of great importance for financial marketers and has attracted considerable interest from researchers, regulators and investor advocates. Nonetheless, surprisingly limited research has been carried out in this area regarding the impacts of FSA on retail investors and there are many aspects that can and should be investigated. In particular, given the uncertainties of the federal social security system, the recent trend in negative savings rates and the devastating effects of failing to adequately prepare for retirement, it is important to understand the effectiveness of FSA on retail investors' information processing and decision making, which is an issue with theoretical, managerial and public policy implications.

To address this research gap, the current research aims to extend our knowledge of the effectiveness of FSA by incorporating external (that is, creative strategy and ad disclosure) and internal (that is, chronic regulatory focus) factors in an experimental design. Specifically, the current study examines the extent to which the three factors affect and interact with retail investors' psychological responses and gives an illustration of the specific mechanisms at work that might account for the external and internal factors in a FSA context. The findings are able to aid financial marketers in deciding which advertising techniques to employ in conjunction with creative and media strategies as well as market segmentation. In addition, this study will provide policy makers, consumer groups and researchers with broader insights into the role of FSA in the investment market.

Theoretical background and hypotheses generation

Creative strategy

The general concepts of advertising creative strategies have a long history. In academic research, creative strategy is defined as 'a policy or guiding principle which specifies the general nature and character of messages to be designed' (Frazer, 1983, p. 36). In general, the dyad framework of informational (rational or hard-sell) versus transformational (emotional or soft-sell) strategies has been studied extensively in advertising literature. Over the decades, the definitions of these two

concepts have remained constant. Informational strategies are designed to change the message recipients' beliefs about the advertised brand and rely on their persuasive power of arguments or reasons about the brand attributes (Puto and Wells, 1984). For example, an informational advertisement tends to provide audiences with factual information about the brand and relevant brand data in a clear and logical manner, such that they have greater confidence in their ability to assess the merits of buying the brand after having seen the ad (Taylor, 1999). Okazaki *et al* (2010) define the concept of informational strategy (that is, hard-sell appeal) as one in which the objective is to induce rational thinking on the part of the consumer by explicitly providing objective, factual information. In contrast, transformational strategies are grounded in the emotional, hedonic and experiential side of consumption (Puto and Wells, 1984). A transformational advertisement tends to associate the experience of using/consuming the advertised brand with a unique set of psychological characteristics (Taylor, 1999). Transformational strategy (that is, a soft-sell appeal) is defined as one in which human emotions are emphasized to induce an affective reaction from the consumer by implicitly conveying brand images and meanings (Okazaki *et al,* 2010).

As these two contrasting approaches typically trigger different forms of advertising persuasiveness and information processing in consumers, informational versus transformational strategies have been particularly prominent advertising studies. Scarabis *et al* (2006) suggest that each processing provides distinctive ways of ordering experience and constructing reality. In general, informational ads typically elicit more analytical, logical and paradigmatic forms of processing rather than creating personal meaning (Wentzel *et al,* 2010). This mode of processing attempts to rely on a formal, mathematical system of description and explanation that is based on logical proof, sound argument and empirical discovery and generate an abstract, true conclusion from each piece of information presented in the ad (Scarabis *et al,* 2006). Hence, an individual who processes an informational ad is more prone to adopt dispassionate, verifiable rules of logic and modify his/her attitudes according to the strength of the ad's arguments (Escalas and Bettman, 2003).

However, transformational strategies tend to create ads that may appeal to the images related to the use of product, rarely eliciting explicit mention and interpretation of product quality (Homer, 2008). According to Escalas and Bettman (2003), transformational ads attempt to incorporate a level of indirectness and subtlety, focus on building mood or image and create emotional, experiential relationships with

a good or service by way of a narrative form of processing called 'transportation' (Escalas and Bettman, 2003; Scarabis *et al,* 2006). Moreover, transformational strategies are designed to develop an affective reaction from the consumers and intensify the connections between the brand and the consumer's self (Okazaki *et al,* 2010). Similarly, McQuarrie and Mick (1996) emphasize the role of metaphor in the persuasiveness of transformational ads. Specifically, metaphorical approaches reflected in transformational ads, such as figurative claims and illustrations, may impart an image to the brand and convey the symbolic meaning to the consumer (Green and Brock, 2000; McQuarrie *et al*, 2005). In a nutshell, consumers are more likely to process transformational ads in an affective, narrative, imaginative and implicit manner (Okazaki *et al,* 2010; Wentzel *et al,* 2010).

Ad disclosure

Provision and usage of ad information are crucial issues for FSA. Both theory and research have advocated that ad disclosures enhance the interaction between information utilization on the buyers' side and information provision on the sellers' side (Lee *et al*, 2011). With this backdrop, ad disclosures (disclaimers) are suggested to reduce misleading impressions from ad claims, information or other cues. From a managerial standpoint, ad disclosures can enhance consumers' perceptions, attitudes and purchase intentions (Andrews *et al*, 2000). From a consumer welfare perspective, ad disclosures can function as informational interventions or market-based solutions that can improve the overall quality of consumers' comprehension and decision making (Kozup and Hogarth, 2008).

By definition, ad disclosures are a class of regulatory actions that ensure that consumers are informed about product characteristics that may play an integral role in their decision to purchase and use a given product (Stewart and Martin, 2004). Ad disclosures take on a variety of forms that include provision of basic information about product characteristics, qualifications of product claims, risks of product usage, admonitions or recommendations about product purchase (or use), information regarding reducing or avoiding risks and corrective advertising (Hoy and Lwin, 2007). In the financial industry, the FTC and other governmental bodies (for example, SEC, FDIC, FRB and so on) influence the level and content of FSA disclosures primarily through issuing regulations that mandate disclosure of information and by setting standards for certain financial products or services that retail investors could not easily evaluate (Lee *et al,* 2011). In particular, as the

recent economic crisis has unfolded with liquidity shortfalls and bankruptcy in the US financial industry, the US government has recognized that enhanced informational interventions are paramount (Kozup and Hogarth, 2008). Consequently, ad disclosures are expected to serve as a communication approach that can contribute to financial literacy and consumer welfare in the financial marketplace (Bone, 2008).

However, regulators, consumer groups, researchers and financial companies do not exactly know whether or how ad disclosures influence retail investors (Bone, 2008; Lee *et al,* 2011). Researchers have even cautioned that ad disclosures may not always be necessary or even desirable, and they may produce outcomes that are contrary to the intended effects with respect to investors' responses (Kozup and Hogarth, 2008). For example, from a managerial standpoint, research has shown that ad disclosures provide consumers with complete information crucial to an accurate understanding of the advertised brand and also mitigate the formation of potentially misleading beliefs, attitudes and intentions although they are not central to overall advertising strategies (Andrews *et al*, 2000). From a consumer welfare perspective, research has advocated that ad disclosures can reduce the information processing burden, allow for learning transfer and can lead to more informed consumer choices (Bone, 2008). However, little evidence exists to indicate whether the use of ad disclosures, if implemented in currently proposed regulations, are sufficient to produce intended outcomes in conjunction with potential variables (for example, campaign contexts and audience characteristics) in the context of FSA. Thus, it is this gap that we attempt to fill, at least partially, in this study.

Regulatory focus

Higgins (1997) states that some people tend to approach pleasure by pursuing positive outcomes, whereas others tend to approach pleasure by avoiding negative outcomes. The former represents a promotion focus and the latter corresponds with a prevention focus. In the case of a promotion focus, people's goals relate to advancement and accomplishment by way of approach strategies/eager means, whereas if they have a prevention focus, they likely pursue goals related to security and protection via avoidance strategies/vigilant means. Building on this identified mechanism, regulatory focus has been conceptualized both as a malleable attribute that can be manipulated for a particular task or goal and a stable individual difference variable (for example, chronic self-regulatory focus). Here, we focus on the chronic self-regulatory focus, because chronically accessible constructs by definition are always

present and thus always capable of influencing perceptions of external stimuli such as advertisements (Zhao and Pechmann, 2007).

Regulatory focus and information processing

In recent years, a growing body of literature has shown that the two opposing regulatory foci shape differences in information processing, elaboration and persuasion in marketing contexts (Aaker and Lee, 2006; Zhao and Pechmann, 2007). For example, Zhu and Meyers-Levy (2007) found that promotion-focused participants engaged in relational elaboration, which entails identifying commonalities or abstract relationships among disparate items, whereas prevention-focused participants engaged in item-specific elaboration, which involves focusing on specific attributes of each item independent of others. Therefore, in this study, promotion-focused participants, because of their emphasis on relational elaboration and their power of integration, better comprehended and responded more favorably to ambiguous ad messages. Yet, prevention-focused participants, because of their prevailing use of item-specific elaboration and their focus on the specifics of data, responded more favorably to unambiguous ad messages.

Furthermore, several studies have shown that a vigilant and risk-averse form of exploration that is compatible with a prevention focus should encourage the reliance on substantive information processing in persuasion. This type of processing, in turn, increases the reliance on external information, which messages provide in general (Friedman and Förster, 2001). As a result, prevention-focused individuals should theoretically favor substantive messages because these messages, being more factual, can provide a more compelling basis for justification through analytical processing. On the other hand, an eager and risk-seeking form of exploration that is compatible with a promotion focus should encourage reliance on affective messages in persuasion and should encourage the use of heuristics on average (Friedman and Förster, 2001).

Likewise, research addressing the level of construal offers an interesting insight for the differences in cognitive processing pertaining to regulatory focus. Construal level theory posits that individuals construct different representations of stimuli in their environments, which vary in terms of the degree of abstraction at which goal-directed actions are represented in the cognitive hierarchy (Trope and Liberman, 2003). Individuals who use a more abstract mental model construe stimuli with relatively simple, decontextualized and coherent representations that extract the gist from available information (high-level contruals). Therefore, these people tend to be influenced by abstract

and general features of stimuli that are abstract and general about the characteristics, attributes and behaviors of certain types of people, events or other stimuli (Fiske and Pavelchak, 1986). In contrast, people who use concrete mental models construe stimuli with relatively complex, contextualized and identical representations (low-level contruals). Therefore, these individuals tend to be influenced by specific and detailed features of stimuli, as well as contextual details salient at the moment (Fiske and Pavelchak, 1986). In this vein, the academic literature has demonstrated that individuals with a prevention focus are likely to construe information at a low level, whereas those with a promotion focus are inclined to construe information at a high level (Lee *et al*, 2010). Specifically, research demonstrates that because of a local (more concrete or detail-focused) perceptual processing advantage, prevention-focused participants show better recall and have more positive brand attitudes when the product is described at a low rather than a high level of construal. In contrast, to a global (more general or abstract) perceptual processing advantage, promotion-focused participants show better recall and have more favorable brand attitudes when the product is described at a high versus low level of construal (Lee *et al,* 2010).

Regulatory fit principle and message persuasiveness

Recent studies on the relationships between individual self-regulatory focus and message persuasiveness show evidence of a matching principle related to the evaluations of external stimuli: *regulatory fit* (Avnet and Higgins, 2006). A central idea of regulatory fit principle proposes that the value of a stimulus depends on whether people evaluate it in a way that sustains their goal orientation (Lee and Aaker, 2004). On the basis of the prior discussion about the relationship between regulatory focus and message persuasiveness (Lee and Aaker, 2004; Avnet and Higgins, 2006), (i) people are more likely to remember information that is compatible with the regulatory focus, (ii) a relatively high degree of regulatory fit enables people to evaluate information more easily, resulting in more favorable evaluations (that is, the processing fluency account), (iii) a high level of regulatory fit creates a sense of 'feeling right', which subsequently transfers to favorable evaluations and (iv) regulatory fit creates a certain degree of engagement when executing a particular activity (for example, evaluating an object) and this subsequently magnifies the value experience and judgment related to that activity. On the basis of the above reasoning, regulatory fit principle posits that the choice is based on individuals' assessment of brand information that is guided by a regulatory focus. That is, messages that

fit with the recipients' regulatory orientation are easier to process, and this experience of fluently processing a fit message may develop different decision strategies (Lee and Aaker, 2004; Avnet and Higgins, 2006). In turn, the correspondence between self-regulatory modes and decision strategies is manifested by a more favorable evaluation and judgment of message persuasiveness and a greater likelihood to purchase the advertised brand (Wan *et al*, 2008).

Taken together, a sizeable amount of literature on the differences regarding information processing and decision making under the two contrasting self-regulatory modes helps predict how self-regulatory focus interacts with FSA (that is, creative strategy and ad disclosures) and affects FSA persuasiveness and investment decisions. As noted earlier, the distinction between promotion- and prevention-focused regulatory focus appears to be a strong predictor of judgment, thought and behavior in message persuasion. On the basis of the extensive literature review on creative strategy, ad disclosure and regulatory focus, we predict that retail investors' attitudes toward and purchase intentions of a financial product are a function of external factors (that is, creative strategy and ad disclosure) and internal characteristics (that is, regulatory focus). Specifically,

Hypotheses 1a: As investors become more prevention-focused, they will have more favorable attitudes toward financial product when exposed to informational ads than transformational ads. In contrast, as investors become more promotion-focused, they will have more favorable attitudes towards financial product when exposed to transformational ads than informational ads.

Hypotheses 1b: As investors become more prevention-focused, they will have greater purchase intentions of financial product when exposed to informational ads than transformational ads. In contrast, as investors become more promotion-focused, they will have greater purchase intentions of financial product when exposed to transformational ads than informational ads.

Hypotheses 2a: As investors become more prevention-focused, they will have more favorable attitudes toward financial product when exposed to ads with disclosures than ads without disclosures. In contrast, as investors become more promotion-focused, they will have more favorable attitudes toward financial product when exposed to ads without disclosures than ads with disclosures.

Hypotheses 2b: As investors become more prevention-focused, they will have greater purchase intentions of financial product when

exposed to ads with disclosures than ads without disclosures. In contrast, as investors become more promotion-focused, they will have greater purchase intentions of financial product when exposed to ads without disclosures than ads with disclosures.

The current study further examines the three-way interactions of study variables given the situation in which there are two moderating variables that jointly influence the regression of the dependent variable on independent variables (Dawson and Richter, 2006). Particularly, recent research has shown that the provision of financial information in a choice situation can provide important investor benefits such as improved economic decision making (Kozup *et al,* 2008). If this is the case, then ad disclosure and regulatory focus are expected to jointly influence the role of creative strategy on investors' responses.

Hypotheses 3a: There will be a three-way interaction among creative strategy, ad disclosure and regulatory focus on attitude towards financial product. Specifically, the moderating role of creative strategy and regulatory focus on investors' attitudes towards financial product is further qualified by the availability of ad disclosure.

Hypotheses 3b: There will be a three-way interaction among creative strategy, ad disclosure and regulatory focus on purchase intention of financial product. Specifically, the moderating role of creative strategy and regulatory focus on investors' purchase intentions of financial product is further qualified by the availability of ad disclosure.

Method

This study employed a between subject experimental design to assess the hypotheses. An experimental design was chosen because a high level of internal control was needed to isolate effects and control for possible confounds. The study employed a 2 (creative strategy: informational versus transformational) $\times 2$ (ad disclosure: ad with disclosures versus ad without disclosures) between-subjects, randomized, experimental design. In addition, chronic regulatory focus was included as a measured independent variable to test hypotheses.

Stimuli development

A between-group experimental design was used for the study so that there was no chance of one treatment contaminating the other. In this study, a professional advertising consultant created four full-page,

colored mutual fund magazine advertisements with a fictitious company/product name: (i) an informational mutual fund advertisement with disclosures, (ii) an informational mutual fund advertisement without disclosures, (iii) a transformational mutual fund advertisement with disclosures and (iv) a transformational mutual fund advertisement without disclosures (see Appendix).

With respect to the manipulation of creative strategy, the current study followed the theoretical framework and practical suggestions of previous literature on advertising creative strategy (that is, Frazer, 1983; Puto and Wells, 1984; Taylor, 1999; Okazaki *et al,* 2010). Specifically, informational ads contained arguments, information and expositions regarding the nature and features of a financial offering in a direct, logical and fact-based manner with emotionally neutral visual elements. In contrast, transformational ads included a specific story that might be associated with the product in a causal or temporal sequence of events by featuring a plot that might attribute a specific financial offering and projected the experience consumers would have during financial decision-making. In particular, in order to avoid any bias towards a stimulus among subjects, the ad stimuli were manipulated only in the verbal description and all other elements in the ads were held constant.

With respect to the manipulation of advertising disclosures, the current study followed the Securities and Exchange Commissions' regulatory guidelines of mutual fund advertising disclosures (Federal Register, 2003). Specifically, mandatory disclosures included in mutual fund ads were investment objective, price- and cost-related information, risk and return trade-offs, and legend statement (that is, risk disclosure or warning statement).

In order to ensure that creative strategies and ad disclosures were operationalized in a proper way, three advertising professors and one financial professor reviewed the test ads. On the basis of their recommendations, the executions of ads were slightly revised to confirm the intended operationalization of ad stimuli. Then, 10 people (two retail financial advisors, three retail investors and five MBA students) for a focus group interview were solicited to evaluate and discuss the manipulations used in the four test ads (for example, Griffin *et al*, 1992). Each participant was given the definitions of creative strategies and ad disclosure and, then, was asked to read and classify the test ads based on the definitions. There was 100 per cent agreement among the participants' classifications of the ads, and their evaluation of the test ads corroborated our intended operationalizations. Subsequently, the test ads were pre-tested with 20 advertising and public relations undergraduate

students in terms of message clarity, believability and likeability. There was no significant difference among the four test stimuli.

Subjects

A total of 219 subjects were recruited from a nationwide online market research company. On the basis of the socio-demographic profile of US retail mutual fund investors reported by Investment Company Institute (2010), we limited subjects into retail investors based on the following conditions: (i) 35–49 years of age, (ii) married or living with a partner or children, (iii) college graduates and (iv) employed (full- or part-time).

The current study invited only retail investors who had purchasing experience, and considered purchasing investment products mainly targeted by mutual fund advertisers by asking subject to go through a screening procedure prior to participation. For those who passed several screening questions, respondents were randomly assigned to the experimental conditions. Specifically, subjects were asked to answer questionnaires for chronic regulatory focus. Next, they were systematically assigned to one of the four conditions. Then, the mutual fund stimuli were presented to subjects in a static file that mirrored a traditional print mutual fund advertisement. Finally, subjects were asked to answer questions for measurements with the following order; (i) attitude toward the financial product, (ii) purchase intention of the financial product and (iii) demographics.

Measures and reliabilities

An instrument was developed to measure each regulatory focus, attitudes and behavioral intentions. First, the chronic regulatory focus of subjects was measured by Lockwood *et al*'s (2002) scale items, given that substantial evidence shows Lockwood *et al*'s (2002) scale has the ability to explain and predict the individual chronic regulatory focus in the context of decision making, especially health, food or finance (Zhao and Pechmann, 2007; Summerville and Roese, 2008). This scale has 18 items, half of which measure promotion focus and the other half of which measure prevention focus. Using a scale with endpoints of 1 ('not at all true of me') and 9 ('very true of me'), subjects were asked to indicate the extent to which they endorse items relevant to a promotion focus and items relevant to a prevention focus. Cronbach's α for the promotion-focused scale showed an acceptable level of reliability ($\alpha = 0.91$). Items measuring prevention-focused showed high level of reliability ($\alpha = 0.95$).

Next, attitude toward the financial product was measured with three Likert-scale items with 5-point scales. Attitude has been identified as an important objective in FSA (Karrh, 2004). Here, attitude toward financial product was used as a measure of individual perception and belief of the financial product, with three items measuring this factor as to whether the financial product is good–bad, positive–negative and favorable–unfavorable (Kozup *et al,* 2008). The three items were found to be reliable ($\alpha = 0.91$).

Finally, in the current study, purchase intention was operationalized as 'willingness' to purchase a product, which is produced by an ad's sponsoring company (Kozup *et al,* 2008). Specifically, purchase intentions were measured using three 7-point Likert statements as the following: 'Assuming you were going to have a mutual fund, would you be more or less likely to have this mutual fund, given the information shown?'; 'Given the information shown about the mutual fund, how probable is it that you would consider having this mutual fund, you were going to have?'; and 'How likely would you be to have this mutual fund, given the information shown?'. Cronbach's α for the scale showed an acceptable level of reliability at 0.92.

Manipulation checks

Two manipulation checks were conducted. First, subjects were asked to answer Puto and Wells' (1984) scale items to check whether the informational versus transformational strategy was perceived as intented. Creative strategies were measured on a scale of 1 = *strongly disagree* to 6 *strongly agree* (Puto and Wells, 1984). An informaionl strategy score was obtained by combining eight informaitonal strategy items and a transformational score was obtained by combining 15 transformational strategy items. The reliabilities of each creative strategy for the instrument ranged from 0.90 for the informational strategy to 0.95 for the transformational strategy. Using an independent sample *t*-test, a significant difference between informational strategy and transformational strategy was found. The results indicated that informational ads were more informational than transformational ($M_{\text{informational}} = 5.12$ versus $M_{\text{transformational}} = 2.29$, $t(217) = 58.11$, $p < 0.001$), and transformational ads were more transformational than informational ($M_{\text{informational}} = 2.25$ versus $M_{\text{transformational}} = 4.90$, $t(217) = -51.35$, $p < 0.001$). Thus, subjects perceived the two contrasting creative strategies as intended.

Next, to validate the absence versus presence of ad disclosure manipulations in the test ads, a 7-point Likert scale item, 'I noticed the ad disclosure', anchored by (1) *strongly disagree* to (7) *strongly agree*

was used (Torres *et al*, 2007). Using an independent same *t*-test, a significant difference between the mean scores was found: ads with disclosures and ads without disclosures ($M_{\text{ads with disclosures}} = 5.55$ versus $M_{\text{ads without disclosures}} = 3.31$, $t(217)$, $p < 0.001$). Hence, the manipulations were effective.

Analysis and findings

The current study used moderated multiple regression analyses (MMRA) instead of conventional AN(C)OVA to avoid a median split that is commonly used for interaction effects dealing with continuous independent variables (that is, chronic regulatory focus) by turning them into categorical ones. That is, given that median split inevitably reduces information contained in the variable of interests and may lead to misleading conclusions, whereas MMRA treat the continuous independent variable in its natural form and, in turn, create greater statistical power (Aguinis and Gottfredson, 2010), we used MMRA to test the hypotheses.[1] As shown in Table 5.1, before MMRA, data were analyzed using descriptive statistics such as percentages and frequencies to present the main characteristics of the sample. Table 5.2 provides a summary of the MMRA results for hypotheses tested in the study.

Hypothesis 1a examined the potential interaction between creative strategy and chronic regulatory focus on their influence on attitude toward financial product and purchase intention. With respect to the potential interaction effect of creative strategy and regulatory focus on attitude toward financial product, as predicted, there was a statistically significant interaction between creative strategy and regulatory focus ($\beta = 0.63$, $t = 11.87$, $p < 0.01$). As shown Figure 5.1, as subjects become more prevention-focused, they have more favorable attitudes towards a financial

Table 5.1 Summary statistics and correlations among study variables

	M	SD	1. RF	2. CS	3. AD	4. PA	5. PI
1. RF	0.54	4.55	1.00	—	—	—	—
2. CS	0.04	1.00	0.01	1.00	—	—	—
3. AD	–0.05	1.00	–0.04	0.11*	1.00	—	—
4. PA	4.33	1.31	0.10	0.10	0.24**	1.00	—
5. PI	4.27	1.24	0.10	0.08	0.23**	0.98**	1.00

Note: CS = Creative strategy, RF = Regulatory focus, AD = Ad disclosure, PA = Product attitude, PI = Purchase intention.
*Significant at 0.05; **significant at 0.01.

Table 5.2 Moderated multiple regressions results

	Independent	Dependent	Coefficient	*t*-Value
Hypothesis 1a	CS	PA	0.02	0.38
	RF	—	0.09	1.62
	CS×RF	—	0.63	11.87**
Hypothesis 1b	CS	PI	0.00	0.01
	RF	—	0.09	1.62
	CS×RF	—	0.62	11.53**
Hypothesis 2a	AD	PA	0.28	4.51**
	RF	—	0.10	1.58
	AD×RF	—	–0.34	–5.43**
Hypothesis 2b	AD	PI	0.27	4.33**
	RF	—	0.10	1.57
	AD×RF	—	–0.32	–5.15**
Hypothesis 3a	CS	PA	–0.03	–0.13**
	AD	—	0.29	11.28**
	RF	—	0.11	4.37**
	CS×AD	—	–0.46	–17.99**
	CS×RF	—	0.63	24.60**
	AD×RF	—	–0.38	–14.95**
	CS×AD×RF	—	–0.18	–6.82**
Hypothesis 3b	CS	PI	–0.05	–1.69
	AD	—	0.28	9.93**
	RF	—	0.11	3.90**
	CS×AD	—	–0.47	–16.74**
	CS×RF	—	0.62	21.82**
	AD×RF	—	–0.37	–12.95**
	CS×AD×RF	—	–0.14	–4.96**

Note: CS = Creative strategy, RF = Regulatory focus, AD = Ad disclosure, PA = Product attitude, PI = Purchase intention.
*Significant at 0.05; **significant at 0.01.

product when exposed to informational ads than transformational ads, whereas as subjects become more promotion-focused, they have more favorable attitudes towards a financial product when exposed to transformational ads than informational ads. Thus, Hypothesis 1a was supported.

With respect to Hyothesis 1b, our findings showed that there was an interactive effect of creative strategy and regulatory focus on subjects' purchase intentions of financial product ($\beta = 0.62$, $t = 11.53$, $p < 0.01$). As shown in Figure 5.2, as subjects became more prevention-focused, they had greater purchase intentions of financial product when exposed to informational ads than transformational ads. However, the opposite pattern was found as subjects became more promotion-focused. Thus, Hypothesis 1b was also supported.

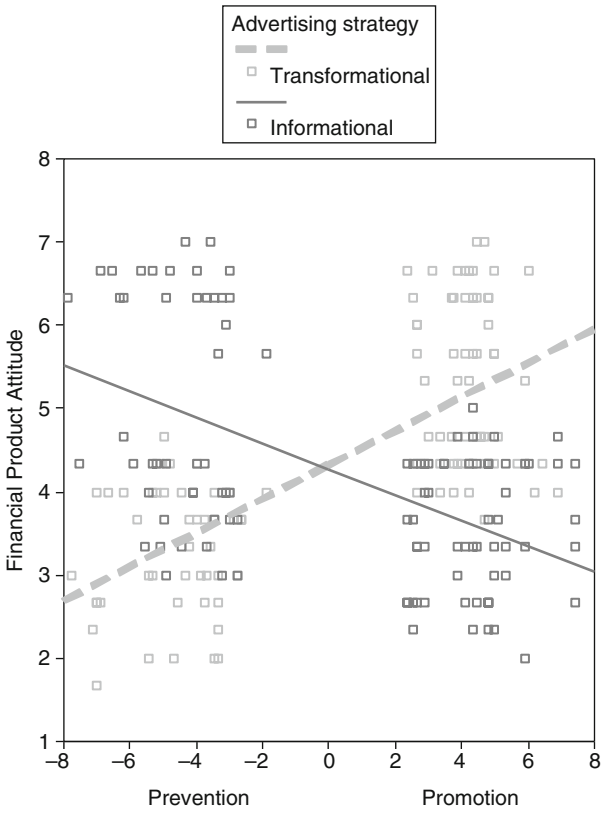

Figure 5.1 Creative strategy × regulatory focus → Attitude toward financial product

Similar to Hypothesis 1a and Hypothesis 1b, moderated regression analyses were also carried out to test the potential interaction between ad disclosures and regulatory focus on their influence on such outcome measures as attitude toward financial product (Hypothesis 2a) and purchase intention (Hypothesis 2b). As stated in Hypothesis 2a and Hypothesis 2b, variances in subjects' attitudes towards financial product ($\beta = -0.34$, $t = -5.43$, $p < 0.01$) and variances in their purchase intentions ($\beta = -0.32$, $t = -5.15$, $p < 0.01$) were drawn from an interactive function of ad disclosures and regulatory focus. With respect to Hypothesis 2a, the influence of ad disclosures on attitude toward financial product was found to be greater as subjects become more prevention-focused than promotion-focused, as shown in Figure 5.3.

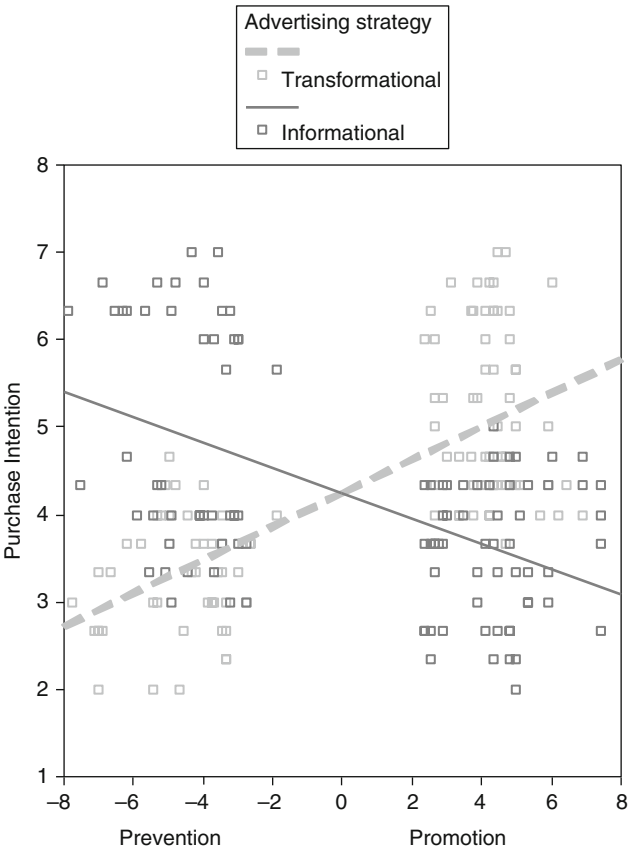

Figure 5.2 Creative strategy × regulatory focus → Purchase intention

Concerning Hypothesis 2b, the impact of ad disclosure on purchase intention was found to be greater as subjects become more prevention-focused than promotion-focused. Thus, both Hypotheses 2a and 2b were supported (Figure 5.4).

The results pertaining to Hypothesis 3a and Hypothesis 3b indicate the joint effect of three independent variables (creative strategy, ad disclosure and regulatory focus) on attitude toward financial product and purchase intention in a FSA context. As Table 5.3 shows, all three hypothesized three-way interaction effects were statistically significant: Hypothesis 3a ($\beta = -0.18$, $t = -6.82$, $p < 0.01$) and Hypothesis 3b ($\beta = -0.14$, $t = -4.96$,

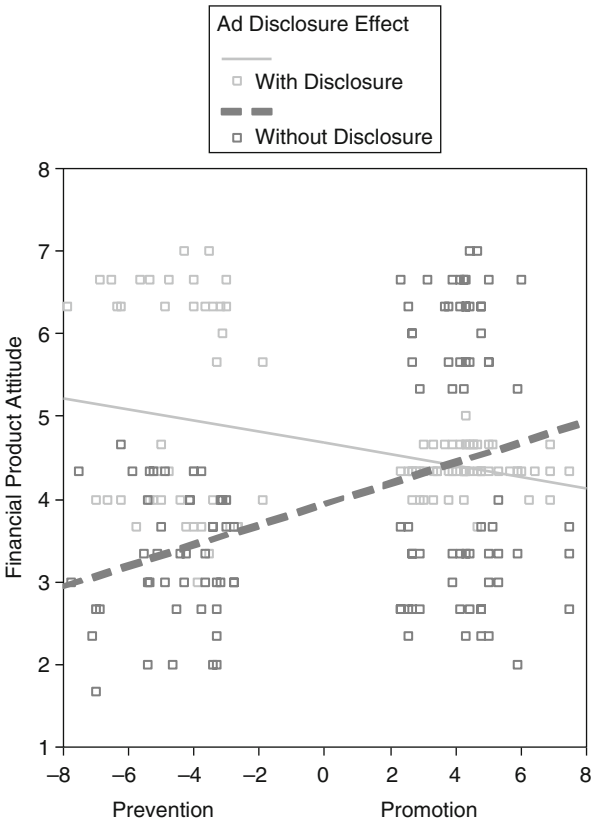

Figure 5.3 Ad disclosure × regulatory focus → Attitude toward financial product

$p < 0.01$). Therefore, the results reveal that the interaction effect between creative strategy and regulatory focus is further qualified by the availability of ad disclosure. More specifically, as shown in Figures 5.5 and 5.6, under the absence of ad disclosures, the influence of transformational ad on attitude toward financial product was greater as evidenced by the steeper slope for transformational ad than informational ad across the level of regulatory focus. In contrast, under the presence of ad disclosure, the influence of informational ads was greater as evidenced by the steeper slope for informational ad than transformational ad across the level of regulatory focus. A similar pattern of interaction

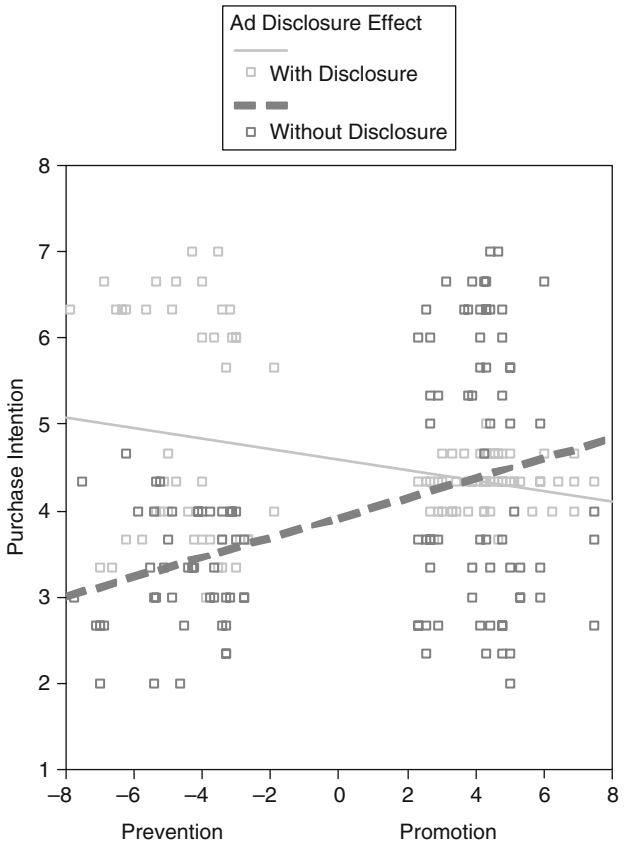

Figure 5.4 Ad disclosure × regulatory focus → Purchase intention

effects was observed for purchase intention. That is, under the absence of ad disclosure, transformational ad exhibited a relatively stronger influence on purchase intention of financial product as they become more promotion-focused, whereas the influence of the informational ad weaker as evidenced by the differences in slopes for transformational ad and informational ad. In contrast, under the presence of ad disclosure, the opposite pattern was observed. Specifically, informational ads had greater influence on purchase intention of financial product as they become more prevention-focused compared with corresponding subjects in promotion-focused subjects. Thus, Hypothesis 3a and Hypothesis 3b were supported.

Table 5.3 ANOVA results of the median split of regulatory focus

	Independent	Dependent	SS	df	MS	F	Significance
Hypothesis 1a	CS	PA	0.005	1	0.005	0.005	0.943
	RF	—	2.871	1	2.871	2.911	0.089
	CS×RF	—	154.340	1	154.340	156.525	0.000
	Error	—	212.000	215	0.986	—	—
	Total	—	4475.00	219	—	—	—
Hypothesis 1b	CS	PI	0.173	1	0.173	0.188	0.665
	RF	—	2.455	1	2.455	2.672	0.104
	CS×RF	—	133.361	1	133.361	145.141	0.000
	Error	—	197.551	215	0.919	—	—
	Total	—	4331.333	219	—	—	—
Hypothesis 2a	AD	PA	31.994	1	31.994	22.921	0.000
	RF	—	4.686	1	4.686	3.343	0.069
	AD×RF	—	45.908	1	45.908	32.746	0.000
	Error	—	301.420	215	1.402	—	—
	Total	—	4475.000	219	—	—	—
Hypothesis 2b	AD	PI	26.908	1	26.908	21.004	0.000
	RF	—	3.981	1	3.981	3.107	0.079
	AD×RF	—	38.496	1	38.496	30.050	0.000
	Error	—	275.434	215	1.281	—	—
	Total	—	4331.333	219	—	—	—
Hypothesis 3a	CS	PA	1.460	1	1.460	8.171	0.005
	AD	—	36.792	1	36.792	205.943	0.000
	RF	—	4.408	1	4.408	24.673	0.000

(*continued*)

Table 5.3 Continued

	Independent	Dependent	SS	df	MS	F	Significance
	CS×AD	—	68.689	1	68.689	384.490	0.000
	CS×RF	—	155.198	1	155.198	868.724	0.000
	AD×RF	—	58.446	1	58.446	327.155	0.000
	CS×AD×RF	—	10.496	1	10.496	58.752	0.000
	Error	—	37.695	211	0.179	—	—
	Total	—	4475.000	219	—	—	—
Hypothesis 3b	CS	PI	2.117	1	2.117	9.796	0.002
	AD	—	31.404	1	31.404	145.349	0.000
	RF	—	3.565	1	3.565	16.500	0.000
	CS×AD	—	66.388	1	66.388	307.265	0.000
	CS×RF	—	133.942	1	133.942	619.930	0.000
	AD×RF	—	49.269	1	49.269	228.033	0.000
	CS×AD×RF	—	5.90	1	5.90	27.350	0.000
	Error	—	45.58	211	0.21	—	—
	Total	—	4331.300	219	—	—	—

Note: CS = Creative strategy, RF = Regulatory focus, AD = Ad disclosure, PA = Product attitude, PI = Purchase intention.

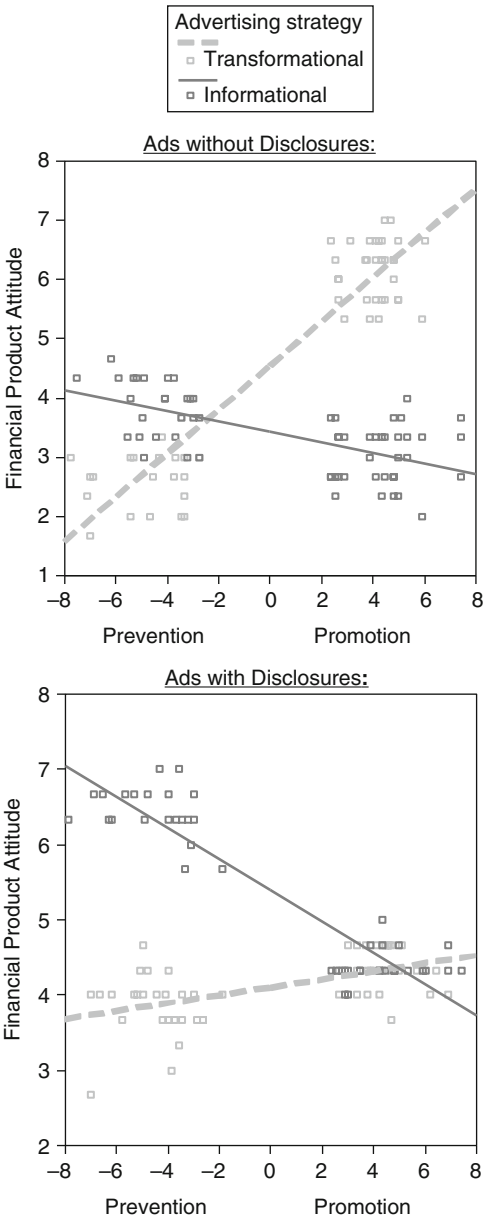

Figure 5.5 Creative strategy × ad disclosure × regulatory focus → Attitude toward financial product. (a) Ads without disclousures; (b) Ads with disclousures

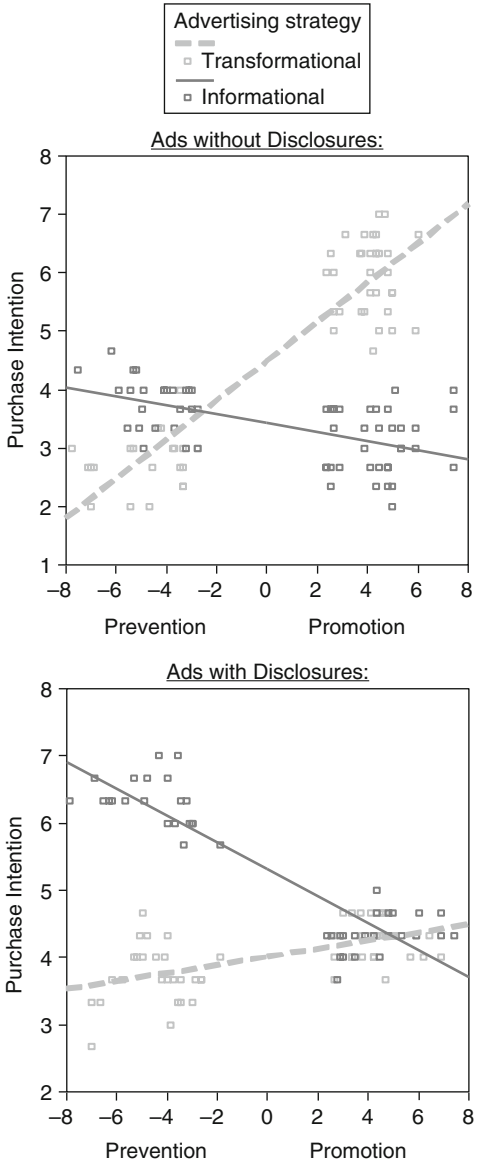

Figure 5.6 Creative strategy × ad disclosure × regulatory focus → Purchase intention. (a) Ads without disclousures; (b) Ads with disclousures

General discussion

This research contributes to the advertising and behavioral finance literature on several fronts by demonstrating the role of creative strategy, ad disclosure and regulatory focus on retail investors' psychological responses to FSA. Evidence from this research indicates that when there is a relevance from investors' chronic regulatory focus and the information processing of the advertisement, the financial product presented in the advertisement is evaluated more positively and investors report higher intentions for compliance with the ad techniques. The following sections discuss the theoretical, managerial and public policy implications of findings.

Theoretical implications

According to regulatory focus theory (Higgins, 1997), people can be differentiated into two groups: promotion-focused and prevention-focused. We demonstrated that, indeed, there are two distinct groups of retail investors in light of financial decision making. As evidenced by this study, investors with a chronic promotion focus evaluated transformational ads and ads without disclosures more positively, whereas investors with a chronic prevention focus preferred informational ads and ads with disclosures. Importantly, the current study did not observe any boomerang effect. As moderation analysis showed, the effects of creative strategy and ad disclosures were largely due to regulatory focus. These findings are largely consistent with those in recent studies that document how distinct self-regulatory focus encourages different types of information processing and decision making because of different cognitive mechanisms and goal pursuit tendencies in various contexts (Lee and Aaker, 2004; Avnet and Higgins, 2006). Thus, our findings offer theoretical contributions that shed light on specific conditions in which advertising techniques (for example, creative strategy and ad disclosures) aligned with investor regulatory focus may be more effective in influencing retail investors' attitude and behavior in the context of FSA. In addition, our study sheds new light on the importance of a match between advertising techniques (for example, creative strategy and ad information provision) and a self-regulatory focus to increase FSA persuasiveness in that their regulatory focus serves as a filter to process ad claims and information selectively to construct their psychological responses among retail investors.

Managerial implications

As the severe market competition and the legal and economic influences in financial industry ignite a demand for more effective

marketing communications (Lee *et al,* 2011), how investors respond to FSA is an important area of inquiry for financial marketers. From a practical standpoint, an implication that derives from current findings is that financial marketers benefit from understanding target investors' psychographic characteristics (that is, regulatory focus) that may influence their financial behavior to enhance their long-term profitability. For example, Pettier *et al* (2002) suggested that psychographic approaches allow financial marketers to create different products, identify different cross-selling opportunities, develop different communication approaches and prompt the different product categories to each of the segments in an efficient manner. In this regard, regulatory focus may be a useful segmentation variable for FSA to the retail investors. As suggested by previous literature (for example, Pham and Avnet, 2004; Avnet and Higgins, 2006), the practical value of identifying and matching the regulatory focus of target investors with appropriate communication approaches should produce the greatest persuasive impact. In this regard, financial marketers should consider the persuasive effectiveness of the fit between external factors (creative strategy and ad disclosures) and internal characteristics (regulatory focus) as they develop advertisements and other promotional materials such as prospectus, direct mail, corporate Websites and so on. For example, it may be necessary to create two types of financial service advertisements for target customers: transformational ads without disclosures (targeted at promotion-focused investors) and information ads with disclosures (targeted at promotion-focused investors).

In addition to creating two types of advertisements to appeal to the two investor segments, financial marketers may be able to choose advertising media vehicles that may be aligned with the dominant regulatory focus of target audiences. From the managerial perspective, given that external surroundings for advertisements and media context influence audience's cognitive and affective responses that subsequently influence the persuasiveness of ad messages (Sung and Choi, 2011), financial marketers need to embed FSA within media contents and programs that can activate viewers' promotion focus or prevention focus. Hence, it may be possible to enhance the effectiveness of FSA by customizing ad messages into media context and advertising vehicles in terms of audience's characteristics (Zhao and Pechmann, 2007).

Our study also provides important implications for FSA in conjunction with the integrated marketing communications (IMC). Although the current study employed only a print advertisement, we cautiously suggest that our findings could be applied to the different media channels

(for example, television programs, newspaper, magazine, out-of-home media and Websites) and different message contexts (for example, sales promotion devices, company contact information, public relations elements, brand advertising, business-to-business advertising and direct response communication). Especially, as the intangible and abstract nature of financial products makes it difficult for financial marketers to establish a consistent and concrete perception of a service offering in the investors' mind, many scholars suggest that financial marketers should strive to tangibilize their service offerings through advertising (Karrh, 2004). As suggested by Carlson *et al* (2003), a well-devised communicaiton program is necessary to heighten the tangibility of the service product and generate effective communication at the campaign level and tactical level of IMC. Thus, we hope that our results contribitue to financial marketers' managerial decisions to strategically use our findings to coordinate their various IMC components. Finally, the knowledge gained in this study might have strong implications for the conduct of a wide range of investor-relations programs.

Implications for financial literacy campaigns and public policy

The importance of communication and information to retail investors is evident given the severity of the economic downturn in the United States today (Bone, 2008) and the millions of dollars spent at the state and federal levels to improve consumer welfare and financial literacy (Kozup and Hogarth, 2008). With this backdrop, increasing financial literacy is an important public policy objective for consumer welfare. Recent studies have proposed that financial literacy campaign, financial education and informational intervention are essential to financial welfare by heightening consumers' financial capacity (that is, learning-based) and knowledge (that is, memory-based) (Lyons and Neelakantan, 2008).

First, the present research can potentially help inform creators of financial literacy campaigns on how to more effectively communicate with Americans on various financial matters. For example, developing communication approaches, such as the congruence of external factors and internal characteristics, should be necessary before government and consumer educators continue to commit large amounts of resources to financial literacy campaigns. Next, the results of this study can be beneficial to designing effective financial education programs. As evidenced in the current study, goal-related financial behaviors may be regulated by either a prevention focus or a promotion focus. Consumer educators might operationalize these findings as the form of screening criteria

within a financial education initiative. As argued by prior studies (Lyons and Neelakantan, 2008), a careful segmentation strategy supported by the understanding of audiences' demographic, psychographic, geographic and cultural characteristics is necessary to financial education.

With respect to informational interventions, our results might be helpful in explaining ad disclosures in retail investors' financial decisions. A number of federal regulators and state government agencies have required financial companies to comply with ad disclosure regulations. Indeed, informational interventions are suggested to play a positive role in a wide range of financial behaviors, including wealth accumulation, stock market participation, portfolio diversification, participation and asset allocation in financial plans, and responsible fiduciary behavior (Bone, 2008; Kozup and Hogarth, 2008). A growing body of literature has shown that concisely written and prominently displayed ad claims and information counterbalance the potential misleading perception and comprehension about product qualities for the average consumers, not just those who are more motivated and knowledgeable (Andrews *et al*, 2000). However, our study suggests that caution should be exercised on the use of 'one-size-fits-all' informational interventions without considering the relevance between internal (regulatory focus) and external (creative strategy and ad disclosures) constructs. Indeed, informational intervention is part of the financial security equation. To enhance the role of informational interventions in financial welfare, a multifaceted, integrated and comprehensive approach is needed, involving market-based solutions, possible financial education, disclosures, financial incentives and community-based programs (Lyons and Neelakantan, 2008).

Limitations and future research

As is the case with most studies, there are certain limitations that may detract from the overall efficacy of these results, but these limitations may also suggest avenues for additional research. First, given the hypothetical context in which the experiment that was conducted, there might have been other individual, situational and cultural factors that restricted the generalizability of these findings to the actual market place. First, further research might attempt to broaden the types of conditions presented in advertising disclosures to obtain more comprehensive accounts of whether the relationships we studied are found in other conditions. For example, future research should identify an optimal condition between the kinds of information and the amount

of information provided in the disclosures that can reduce search costs and increase the likelihood of optimal choice in financial marketing contexts.

Second, although this study used actual retail investors that were interested or engaged in a financial product to test the hypotheses, the generalizability of the findings may be limited to all types of investors. Similarly, the results of this study limit the manipulations to a single form of investment product (for example, mutual fund). According to Zhou and Pham (2004), investors' regulatory focus varies between prevention-focused (for example, insurance, retirement plan) and promotion-focused (for example, mutual fund, stock) financial products. Lalwani *et al* (2009) indicated that individuals from a collectivist culture are more prevention-focused and those from an individualistic culture are more promotion-focused. Thus, further work is needed.

Third, we need to be careful in interpreting the results and the available evidence is certainly not conclusive because socio-demographic (for example, income/assets, gender, race/ethnicity, age, education level and so on), psychographic (for example, values, lifestyles and personality), geographic and cultural characteristics that explain and predict financial behavior have gone largely unexplored. Thus, future research should examine how these characteristics affect investors' responses to financial disclosure in advertising contexts. Moreover, a careful and calibrated model testing that incorporates and controls these variables render stronger support for the financial literacy and consumer welfare (Lyons and Neelakantan, 2008).

Finally, additional research opportunities exist regarding judgmental heuristic cues and biased decision making in a FSA context. In behavioral finance, judgmental heuristics (also called 'mental shortcuts' or 'rules of thumb') are considered as the underlying forces leading to irrational economic decisions in the human cognitive system (Benartzi and Thaler, 2007). Therefore, it would be interesting to replicate this study with judgmental heuristic cues in a FSA context.

Note

1. For comparison purposes, ANOVA results of the media split of regulatory focus are provided in Table 5.3.

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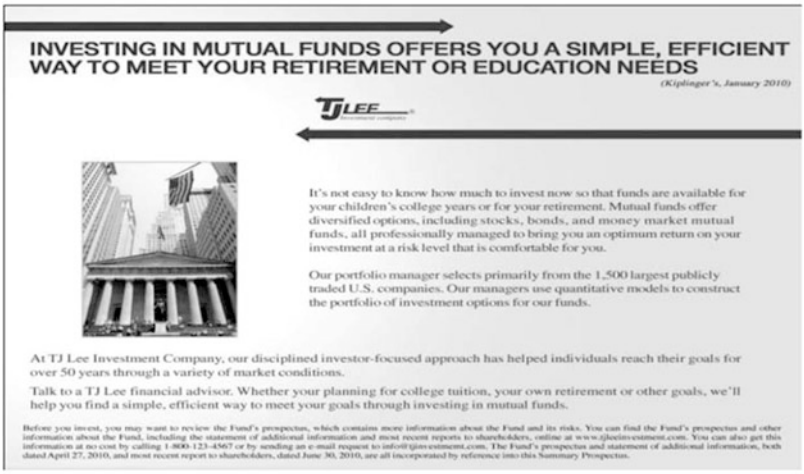
Appendix

Ad Stimuli

Informational Ad Without Ad Disclosure:



Informational Ad With Ad Disclosure:

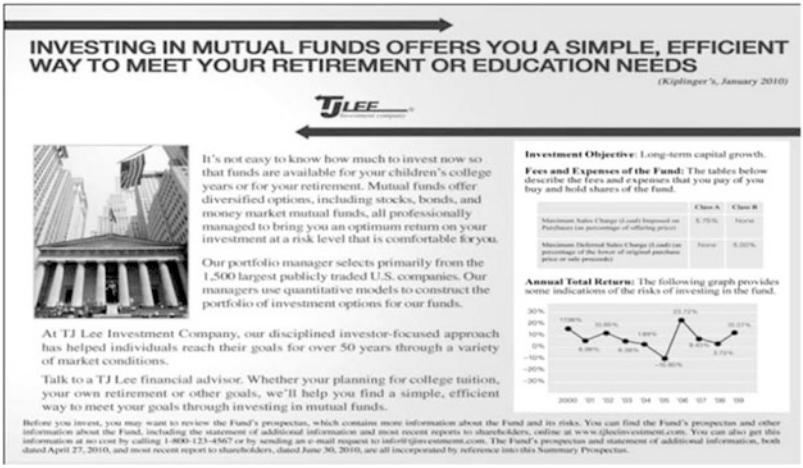


Figure 5.A1 (a) Informational ad without ad disclosure; (b) Informational ad with ad disclosure

Transformational Ad Without Ad Disclosure:

Transformational Ad Without Ad Disclosure:

Figure 5.A2 (a) Transformational ad without ad disclosure; (b) Transformational ad with ad disclosure

6

Socialization and Processing Effects on Comprehension of Credit Card Advertisement Disclosures

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Introduction

Disclosures in credit card advertisements have become a serious concern for consumers (Wang, 2009a, 2011a). Without understanding the disclosures in credit card advertisements fully, a card user may misuse a credit card after he or she applies and receives the card. In the United Kingdom, the average consumer carries US$6421 in credit card debt (CreditAction, 2010; Wang, 2011a). In Australia, there is currently $41.8 billion worth of outstanding credit card debt, and in the United States, $2596 billion was owed on credit cards in 2008 (Harrison and Gray, 2010; Wang, 2011a). In the United States, the average credit card debt for each household is $16 007 (Federal Reserve, 2010; Wang, 2011a), and the average American consumer carries $3752 in credit card debt (Index Credit Cards, 2010; Wang, 2011a). These findings further indicate the issues regarding mismanagement of credit card debt.

College students are one of the most vulnerable consumer groups in terms of credit card debt (Compton and Pfau, 2004; Wang, 2009a,

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2011a). Many college students are exhibiting irresponsible behavior when using credit cards (Norum, 2008; Robb and Sharpe, 2009; Wang, 2011a). Overspending, for example, has been found to be the result of inadequate understanding of using credit cards (Lyons, 2004). Without a doubt, the misunderstanding of using credit cards may contribute to increased debt levels and damaging effects on financial management for many college students. The disclosures in advertisements usually communicate information relevant to using a product safely after a purchase and inform consumers of product risks before usage. When consumers fail to comprehend disclosures, they may not understand important terms and risks associated with their purchases of products or services (MacKinnon *et al*, 2001). This is particularly true for credit card solicitations (Cleaver, 2002; Compton and Pfau, 2004; Wang, 2009a). Since many student credit cards have high annual percentage rates, the longer college students wait to pay the cards off, the worse it gets (Stanford, 1999; Compton and Pfau, 2004; Wang, 2009a). This growing problem could be because students do not comprehend the disclosures fully before using their cards.

Although research has examined college students' attitudes and behaviors on using credit cards (Lyons, 2004; Norum, 2008, Robb and Sharpe, 2009; Wang, 2009a, 2011a; Wang and Xiao, 2009), the results are limited in terms of college students' comprehension of credit card advertisement disclosures. Federal law requires financial services marketers including credit card issuers in the United States to provide important disclosures to communicate information relevant to consume financial products (Wang and Dowding, 2010; Wang, 2011b). This provides important consumer protection as a critical foundation for the financial system (Wang and Dowding, 2010; Wang, 2011b). This study suggests two main perspectives through which college students comprehend disclosures in credit card advertisements: socialization and processing. In other words, this present study aims to examine the effects of socialization and processing on college students' comprehension of credit card advertisement disclosures.

Specifically, this study uses a pre-experimental design to test college students' comprehension of a credit card advertisement's disclosures. Socialization perspective is conceptualized by college students' experiences in using a credit card. Moreover, college students' experiences in using a credit card may be influenced by social factors such as college students' ethnicity, gender, age, education and previous behaviors about using a credit card (Wang, 2011a). Processing perspective is conceptualized by message involvement (Greenwald and Leavitt, 1984; MacInnis

and Jaworski, 1989), the motivation to process credit card advertisement disclosures. Message involvement with credit card advertisement disclosures occurs when an individual's attention is directed toward the disclosures (Wang, 2011c). Therefore, the first objective of this study is to consider social influences that may affect college students' comprehension of credit card advertisement disclosures. The second objective of this study is to consider the information processing that may affect college students' comprehension of credit card advertisement disclosures. In examining these factors, this research hopes to identify practical implications for credit card issuers and financial educators and advisors to help college students comprehend important disclosures and make informed judgments about using their credit cards.

Literature review

Socialization effects

Research on financial socialization focuses on anticipatory socialization (Rutherford and DeVaney, 2009) with the sources that influence learning outcomes and, subsequently, attitudinal and behavioral indicators (Ajzen and Madden, 1986; Ajzen, 1991). This anticipatory socialization refers to the acquisition of experiences and attitudes that might relate to the sources of influence (Moschis, 1987). In other words, it is a process that would occur when college students are conditioned to develop experiences in using a credit card. College students could receive information about using a credit card from various socialization sources. The financial literacy literature suggests that financial behaviors such as using a credit card are positively associated with financial experiences and knowledge (Chang, 2004; Wang and Dowding, 2010; Wang, 2011a, 2011b). In a more general context, less experienced individuals have generally been found to have lower knowledge (Alba and Hutchinson, 1987, 2000). Thus, experiences with using a credit card generally facilitate knowledge about using a credit card.

The financial literacy literature suggests that financial behaviors are positively associated with financial education (Bernheim and Garrett, 2003). In a more general context, less educated individuals have generally been found to have lower financial knowledge (Borden *et al*, 2008). Hilgert *et al* (2003) measured financial knowledge based on a quiz containing 28 true-false questions. One of the tested areas covered general credit management. They found that those who scored highest on questions were most likely to exhibit good understanding of different financial topics. They concluded that programs that can enhance

individuals' knowledge about finance could be used to modify their financial behaviors. Joo *et al* (2003) examined college students' attitudes toward credit cards. Their results revealed that academic level was significantly related to the attitude toward credit cards. Specifically, older students tended to have a more negative attitude toward credit cards than younger students.

Work experience is also an important socialization source in the process by which college students learn about using a credit card (Erskine *et al*, 2006). For example, Wang (2011a) found that work experience was a significant socialization factor in influencing college students' credit card debt. His results revealed that students without work experiences tended to have more credit card debt than students with work experiences. Scott (2010) also revealed that students with working experiences during the school year were probably more financially independent from their parents than students without working experiences during the school year. Shim *et al* (2009) examined the sources of financial socialization, such as work experiences and education, and their connection to the financial learning and attitudes of first-year college students. Their results also indicated that early financial socialization influenced college students' financial behaviors.

Research has shown inconclusive findings regarding the correlations among gender, ethnicity and credit card behaviors. Wang (2011a) found that ethnicity and gender influenced college students' credit card debt. Specifically, male students were found to accumulate more credit card debt than female students. Moreover, Hispanic and African-American students accumulated higher levels of credit card debt than Caucasian, Asian, Pacific-Islander and other students. For male students, African-American students were more likely to accrue credit card debt than Caucasian, Hispanic, Asian and other students. Joo *et al* (2003) examined college students' attitudes toward credit cards. Their results revealed that ethnicity was significantly related to college students' attitudes toward credit cards, whereas gender was not significantly related to attitudes toward credit cards. Compared with other groups, Caucasians had a more positive attitude toward credit cards. Lyons (2004) revealed that minority students were more likely to be financially at risk, compared with other students.

Abdul-Muhmin and Umar (2007) found that credit card ownership increased with age. Scott (2010) found that male students were 15 per cent more likely than female students to have credit cards in their own names. However, male students were roughly 23 per cent less likely than female students to have credit cards given to them by their parents. He also

found that students with credit cards in their own names were more likely to be African-American and Hispanic. Moreover, he found that students with credit cards both in their own names and their parents' names were more likely to be African-American (46 per cent). Carpenter and Moore (2008) found that males were significantly more financially independent as well as more financially confident and secure than females. The test for positive credit card usage indicated a significant difference between males and females, as females indicated higher levels of positive credit card usage. However, there was no variation in terms of negative credit card usage among males and females. Hayhoe *et al* (2000) revealed that female students employed a greater number of financial management practices. However, they reported no gender difference in terms of making minimum payments in terms of credit card usages.

Processing effects

Communication and marketing research has identified message involvement as a crucial component that underlies the degree of information processing (Greenwald and Leavitt, 1984; MacInnis and Jaworski, 1989). Message involvement is a critical measurement of when college students are strongly involved in credit card advertisement disclosures. Greenwald and Leavitt (1984) have used psychological theories of attention and levels of processing to establish a framework of audience involvement that is highly related to message involvement. Four hierarchical levels, preattention, focal attention, comprehension and elaboration, have been established as increased capacity is allocated to messages such as credit card advertisement disclosures. The higher levels require greater message involvement and result in increasingly durable cognitive effects. This suggests that greater message involvement with credit card advertisement disclosures may enable college students to comprehend the disclosures effectively.

Message involvement is defined here as a motivational factor that influences college students motivation to process credit card advertisement disclosures at the time of exposure (Andrews *et al*, 1990; Andrews and Shimp, 1990). Research suggests that the operationalizations of message involvement include an attentional construct and a situational construct (Laczniak and Muehling, 1993). When viewed from attentional perspective, message involvement is often concerned with the focus on a particular aspect of an advertisement (Laczniak *et al*, 1989). Therefore, overall attention paid to the disclosures in a credit card advertisement is a fundamental component of looking at message involvement – a college student must pay attention to the disclosures in order to have message

involvement with the disclosures. In this case, message involvement represents an individual variable that could indicate the amount of arousal or interest that is evoked by the disclosures in a credit card advertisement (Laczniak *et al*, 1989). College students who involve more in processing the disclosures may undergo a semantic analysis in which the memorial representation of the disclosures is accessed from memory, which in turn affects subsequent attitudes and behaviors (Greenwald and Leavitt, 1984; MacInnis and Jaworski, 1989; Wang, 2006a; Wang, 2011c).

Although older individuals experience only a modest decline in short-term memory capacity (John and Cole, 1986), there is a generalized decline in the rate of cognitive processing capability (Phillips and Sternthal, 1977). In this case, age differences are most likely due to difficulties in acquiring and using new information such as credit card advertisement disclosures (John and Cole, 1986). Research has found that older and more experienced individuals tend to engage in less detailed processing than do younger individuals (Cole and Balasubramanian, 1993; Yoon, 1997). Such information is important for understating how age influences processing and comprehension of credit card advertisement disclosures. Since research about the effects of gender, age, education and ethnicity on processing credit card advertisement disclosures are limited and the effects of gender, age and ethnicity on financial behaviors are still inconclusive, this study asks the following research questions.

Research Question 1: How do socialization and processing affect college students' comprehension of credit card advertisement disclosures?

Research Question 2: How do socialization factors influence college students' experiences in using credit cards?

Research Question 3: How do socialization factors influence college students' message involvement with credit card advertisement disclosures?

Method

A pre-experimental design was used in this study (Wang, 2006a, 2011b). The study was conducted at a northeastern university in the United States. This study used a convenience sample and recruited college students as the participants (Wang, 2009a, 2011d, 2012a). It is important to acknowledge that the sample was not randomly selected. Recruiting information and information sheet obtained from the Institution Review Board were posted on the study website online. Students interested in participating in the study went to the study website and clicked on the first survey link to answer some questions.

The first survey asked questions about age, education, gender, experiences in using a credit card and other demographic information (Wang, 2009a). Students who finished the first survey then followed the instruction that directed them to review a credit card advertisement including the disclosures. After reviewing the advertisement and the disclosures, students completed the second survey online that measured several dependent variables. Upon completion of the study, all participants received one credit point for their classes. A total of 122 college students completed the study.

According to Fair Credit and Charge Card Disclosure Act (FTC, n.d.), amending the Truth in Lending Act, credit card issuers are required to provide certain disclosures in advertisements to open-end credit and charge accounts. On 22 May 2009, the Credit Card Accountability Responsibility and Disclosure Act of 2009 (CARD Act) was signed into law by President Obama (Benton, 2010). This Act contains significant changes in credit card regulation since enactment of the Fair Credit and Charge Card Disclosure Act to add specific requirements for credit card solicitations (Benton, 2010).

Disclosure requirements for credit card solicitations indicate that the following disclosures should be conspicuously made in credit card advertisements (FDIC, 2012). First, the annual percentage rate or various rates and the circumstances under which the rate may increase should be clearly stated. Information about any finance charges should be reported. Whether an annual fee is charged and the amount of the fee should be clearly conveyed. Any delinquency charge, late charge, or collection charge which may be assessed for the late payment should be communicated (FDIC, 2012).

To be consistent with typical credit card disclosures, the researcher of this study reviewed several current examples of online credit card advertisements to create a fictitious brand and advertisement as the tested credit card brand and advertisement. The contents in the disclosures adopted typical and required disclosures used in current credit card advertisements (Wang, 2011d, 2012a), As a result, fees, APRs and interest rates were displayed in the fictitious credit card advertisement tested in this study.

Measures

This study measured three dependent variables. Experiences in using a credit card ($M = 4.25$, $SD = 2$) was measured by asking the participants how experienced they were in using a credit card, using a semantic differential scale ranging from 1 (not experienced at all) to 7 (experienced). This item was derived from previous research that examined

the relationship between product experience and brand attitude (Alba and Hutchinson, 1987, 2000; Chang, 2004; Wang, 2006b). Message involvement with the disclosures ($M = 3.58$, SD = 1.72) was measured by asking the participants 'how much attention you paid to process the disclosures', 'how engaging it was for you to process the disclosures', 'what was the overall attention you had with the disclosures', and 'how involving it was for you to process the disclosures'. These four items were derived from previous research that examined the relationship between message involvement and brand attitude (Laczniak *et al*, 1989; Wang, 2006a). The four items were measured on a 7-point scale where 1 = 'not at all' and 7 = 'extremely'. The Cronbach's α value for message involvement with the disclosures was 0.94. Comprehension of the disclosures ($M = 3.12$, SD = 1.68) was measured by administering a quiz including six questions about the disclosures to the participants (Wang, 2011b) (Wang and Dowding, 2010). Consistent with previous research's approach, this study used both multiple-choice and true-false questions to measure comprehension (Celsi and Olson, 1988; Wang, 2011b) (Wang and Dowding, 2010). Each correct answer received one point. The lowest score was zero, whereas the highest score was six.

Research has suggested that socio-economic characteristics often influence financial behaviors (Filbeck *et al*, 2005; Wang, 2011a). Thus, this study measured several demographic and socio-economic variables. This study measured college students' gender, age and education level. There were 45 (37 per cent) males and 77 (63 per cent) females in this study. The mean of participants' age was 20 (SD = 2), whereas 52 per cent and 18 per cent of the participants were Caucasian and Hispanic respectively. Among the participants, 12 per cent of them were African-American and 10 per cent of them were Asian. About 8 per cent of the participants were categorized as other ethnicities. This study also measured college students' past behaviors about using a credit card. One question asked how often they searched for credit card information ($M = 2.57$, SD = 1.65), where 1 = 'not often' and 7 = 'very often'. Another question asked how many credit cards college students had ($M = 1.35$, SD = 1.82) at the point of completing the study. These two variables were labeled as information search and number of credit cards.

Results

To answer the first research question regarding how socialization and processing affect college students' comprehension of credit card advertisement disclosures, one multiple regression equation was obtained and reported in Table 6.1. The results revealed that college students'

Table 6.1 Multiple regression equation

Model	**Dependent variable**		
	Comprehension of the disclosures [$F(2, 119) = 3.656$, $P < 0.029$, $R^2 = 0.058$]		
Independent variable	**Beta**	***T***	**Sig.**
(Constant)	—	7.245	0.000
Message involvement with the disclosures	0.197	2.161	0.033
Experiences in using a credit card	–0.188	–2.063	0.041

Table 6.2 Multivariate tests

Effect	**Wilks' lambda value**	***F***	***P***	η^2
Intercept	0.958	2.491	0.087	0.042
Age	0.955	2.697	0.072	0.045
Education	0.980	1.169	0.314	0.020
Ethnicity	0.980	1.150	0.320	0.020
Search information	0.940	3.657	0.029	0.060
Number of credit cards	0.886	7.323	0.001	0.114
Gender	0.944	3.396	0.037	0.056

message involvement with the disclosures exhibited positive influence on comprehension of the disclosures ($\beta = 0.197$, $P < 0.033$). The results also revealed that college students' experiences in using a credit card exhibited an inverse and negative influence on comprehension of the disclosures ($\beta = -0.188$, $P < 0.041$).

To answer the second and third research questions regarding how socialization factors influence college students' experiences in using credit cards and message involvement with credit card advertisement disclosures, the *MANCOVA* procedure was used. In this case, *MANCOVA* was run on experiences in using a credit card and message involvement with the disclosures as the dependent variables. Gender was used as the fixed factor. Participants' age, education, ethnicity, information search and number of credit cards were used as covariates.

The multivariate tests reported in Table 6.2 revealed that gender, Wilks' $\lambda = 0.94$, $F\ (2, 114) = 3.396$, $P < 0.037$, had a significant main effect on the dependent variables. The tests of between-subjects effects reported in Table 6.3 revealed that gender influenced college students' experiences

Table 6.3 Tests of between-subjects effects

Source	Dependent variable	*df*	*F*	*P*	η^2
Corrected model	Experiences in using a credit card[a]	6	10.077	0.000	0.345
	Message involvement with the disclosures[b]	6	1.640	0.142	0.079
Intercept	Experiences in using a credit card	1	0.244	0.623	0.002
	Message involvement with the disclosures	1	4.977	0.028	0.041
Age	Experiences in using a credit card	1	3.652	0.058	0.031
	Message involvement with the disclosures	1	1.191	0.277	0.010
Education	Experiences in using a credit card	1	0.719	0.398	0.006
	Message involvement with the disclosures	1	1.360	0.246	0.012
Ethnicity	Experiences in using a credit card	1	2.311	0.131	0.020
	Message involvement with the disclosures	1	0.008	0.930	0.000
Information search	Experiences in using a credit card	1	6.663	0.011	0.055
	Message involvement with the disclosures	1	1.341	0.249	0.012
Number of credit cards	Experiences in using a credit card	1	13.151	0.000	0.103
	Message involvement with the disclosures	1	2.931	0.090	0.025
Gender	Experiences in using a credit card	1	6.850	0.010	0.056
	Message involvement with the disclosures	1	0.129	0.720	0.001
Error	Experiences in using a credit card	115	—	—	—
	Message involvement with the disclosures	115	—	—	—
Total	Experiences in using a credit card	122	—	—	—
	Message involvement with the disclosures	122	—	—	—
Corrected Total	Experiences in using a credit card	121	—	—	—
	Message involvement with the disclosures	121	—	—	—

[a] *R* Squared = 0.345 (Adjusted *R* Squared = 0.310).
[b] *R* Squared = 0.079 (Adjusted *R* Squared = 0.031).

Table 6.4 Means (standard deviations) of dependent measures

N	**Male**		**Female**	
	45		**77**	
	M	***SD***	***M***	***SD***
Experiences in using a credit card	3.80_a*	(2.02)	4.51_b	(1.95)
Message involvement with the disclosures	3.52	(1.58)	3.62	(1.81)

Note: Means that do not share a common subscript significantly differ: *<0.01.

in using a credit card, F (1, 115) = 6.85, P<0.01. However, gender did not influence college students' message involvement with the disclosures. The means and standard deviations of the dependent variables were reported in Table 6.4. Female students (M = 4.51, SD = 1.95) perceived that they had more experiences in using a credit card than male students (M = 3.8, SD = 2.02). However, male and female students exhibited equal message involvement with the disclosures.

College students' information search had a significant main effect on the dependent variables, Wilks' $\lambda = 0.94$, F (2, 114) = 3.657, P<0.029. The number of credit cards college students owned also had a significant main effect on the dependent variables, Wilks' $\lambda = 0.89$, F (2, 114) = 7.323, P<0.001. The tests of between-subject effects revealed that information search influenced college students' experiences in using a credit card, F (1, 115) = 6.663, P<0.011. Number of credit cards also influenced college students' experiences in using a credit card, F (1, 115) = 13.151, P<0.001. However, information search and number of credit cards did not influence college students' message involvement with the disclosures. Finally, age, education and ethnicity did not influence college students' experiences in using a credit card and message involvement with the disclosures.

Discussion

Quite different from a previous study focusing on examining the visual priming effect on credit card advertisement disclosures (Wang, 2011d, 2012a), this study focuses on examining whether socialization and processing factors affect college students' comprehension of credit card advertisement disclosures. It is important to acknowledge that the two studies examine the effects of different independent variables and

report distinct dependent variables. The previous study reports that visually displaying the credit card advertisement disclosures may enhance college students' attention paid to the disclosures and perceived trust toward the disclosures. This study reveals that college students' message involvement with credit card advertisement disclosures may influence comprehension of the disclosures positively.

While the previous study supports the external influence of stimulus on disclosure processing, this study supports the influence of consumer motivation on disclosure processing. The outcomes of this study are consistent with information processing theories (Greenwald and Leavitt, 1984; MacInnis and Jaworski, 1989; Wang, 2006a; Wang, 2011c). Lower levels of attention toward credit card advertisement disclosures direct relatively little cognitive capacity. As higher levels of attention toward the disclosures are reached, college students may allocate increased cognitive capacity to process the disclosures (Greenwald and Leavitt, 1984; MacInnis and Jaworski, 1989; Wang, 2006a; Wang, 2011c). Consequently, higher levels of processing result in increasingly durable cognitive effects such as comprehension of the disclosures (Greenwald and Leavitt, 1984; Celsi and Olson, 1988; MacInnis and Jaworski, 1989; Wang, 2011c).

The results, however, revealed that college students' experiences in using a credit card affected comprehension of the disclosures negatively. In other words, the more experiences college students have with using a credit card, the less attention they would try to pay to comprehend credit card advertisement disclosures. Even though female students may think they have more experiences in using a credit card than male students, male and female students may not exhibit different levels of message involvement with credit card advertisement disclosures. College students' information search and number of credit cards owned may enhance college students' experiences in using a credit card. However, information search and number of credit cards may not influence college students' message involvement with the disclosures. This again confirms that college students' past experiences in using a credit card may not increase their motivation to pay attention to credit card advertisement disclosures.

There are several reasons for these outcomes and important implications for financial marketers and academic researchers. Previous research has suggested that knowledgeable individuals are more likely to operate on more extensive processing of financial disclosures than less knowledgeable individuals (Alba and Hutchinson, 1987, 2000). This is because knowledgeable individuals usually have well-formulated processing

criteria. In other words, knowledgeable individuals process financial disclosures more comprehensively than less knowledgeable individuals since previous knowledge facilitates processing of financial disclosures (Wang and Dowding, 2010; Wang, 2011b). Although experience is part of knowledge structure, experiences in using a credit card may not directly account for true knowledge required for processing credit card advertisement disclosures (Alba and Hutchinson, 1987, 2000; Chang, 2004). This may explain why experiences in using a credit card may have an inverse effect on comprehension of credit card advertisement disclosures.

The results also suggest that even though experienced college students may be more familiarized with using a credit card than less experienced college students, specific knowledge is required for understanding financial information such as credit card advertisement disclosures. This is consistent with previous research findings, suggesting that financial knowledge in a specific area is positively correlated with information processing in that specific area (Alba and Hutchinson, 1987, 2000; Hilgert *et al*, 2003; Chang, 2004). Research has found that older and experienced individuals tend to engage in less detailed processing for the given subjects (Cole and Balasubramanian, 1993; Yoon, 1997). Since the sample of this study was college students, age was not found to influence experiences in using a credit card and message involvement with the disclosures. However, experienced college students may tend to ignore the disclosures by assuming that they already know a lot about using a credit card. Thus, experienced college students may tend to be overconfident in their true knowledge on using a credit card.

On a positive note, female students tend to have more experiences in using a credit card than male students as female students tend to employ a greater number of financial management practices (Hayhoe *et al*, 2000). This is consistent with previous research indicating that females exhibit higher levels of positive credit card usage (Joo *et al*, 2003) and accumulate less credit card debt than male students (Wang, 2011a). However, previous research may not focus their studies all on college students. Thus, the results presented here may also raise a concern with female students being overconfident in using their credit cards. Although ethnicity was not found to influence experiences in using a credit card and message involvement with the disclosures, Wang (2011a) found that for male students, African-American students were more likely to accrue credit card debt than Caucasian, Hispanic, Asian and other students.

The results also provide some insights, compared to previous research's findings. First, message involvement with credit card advertisement

disclosures seems to affect college students' comprehension of the disclosures. However, experiences in using a credit card, enhanced by information search and number of credit cards, may not influence students' comprehension of the disclosures. These results suggest that college students' elevated capacity to process credit card advertisement disclosures influence their comprehension of the disclosures. Message involvement with the disclosures may maximize college students' proficiency in processing and interpreting the disclosures. College students who are more able to process the disclosures can digest the disclosures more efficiently and schematically than college students who are less able to process the disclosures. Thus, message involvement is the key element for college students to comprehend credit card advertisement disclosures.

Practical implications

Financial disclosures are increasingly common in financial services markets in the United States for a range of products, including credit cards and credit management (Wang, 2011a). Thus, the results of this study may be applicable to various contexts involved in improving effectiveness of financial disclosures (Stewart and Martin, 1994; Wang, 2010). Besides extending previous research, the unique contribution of the present study is centered on examining the effects of college students' message involvement and experiences in using a credit card on comprehension of credit card advertisement disclosures. Even though comprehension of credit card advertisement disclosures requires more than just perceptual processing of the disclosures, confidence may indirectly influence comprehension of the disclosures negatively. Specifically, experiences in using a credit card may hinder college students' motivation to process credit card advertisement disclosures.

Based on the results of this study, credit card issuers may consider placing emphasis on their disclosures based on college students' experiences in using a credit card and gender. In terms of younger students, experienced card users may exhibit fewer interests and uses of processing strategies to process and comprehend credit card advertisement disclosures. In this case, experienced card users may process the disclosures through generalization (Alba and Hutchinson, 1987, 2000). However, the increased use of generalization may result in decreased processing capabilities for experienced card users. Consequently, experienced card users may not comprehend the disclosures as well as less experienced card users who may have more motivation to process the disclosures to avoid costly mistakes.

Based on the above discussion, credit card issuers or financial educators and advisors should focus on enhancing experienced card users' processing of credit card advertisement disclosures. For example, credit card issuers or financial educators and advisors may consider emphasizing the importance of reading the disclosures to experienced card users. While constructing for important and relevant disclosures, credit card issuers may highlight important aspects of disclosures for college students to facilitate their processing of credit card advertisement disclosures (Wang and Dowding, 2010; Wang, 2011b). For example, previous research (Wang and Dowding, 2010; Wang, 2011b) has examined how investors process and comprehend investment disclosures through visual communications. The results have suggested that visual communications of investment disclosures may affect investors' attention toward and processing of the disclosures. Thus, various visual communications such as highlighting or post-it labels should all be considered by credit card issuers to help college students process important credit card advertisement disclosures.

Another way to improve the effectiveness of credit card advertisement disclosures is to use screening process to enforce important credit card advertisement disclosures. Because experienced card users may exhibit fewer interests in processing and comprehending credit card advertisement disclosures, credit card issuers should include several questions about past experiences in using a credit card and the number of credit cards owned during card application processes online. If a college student is deemed as an experienced card user, he or she should be directed to read important disclosures and reminded of the importance of reading the disclosures. This approach at least provides experienced card users with the opportunity to pay attention to important disclosures that they may choose to ignore otherwise.

The results presented here on gender differences also provide some implications for credit card issuers and financial educators and advisors. Consistent with suggestions made by Wang (Wang, 2011a), financial educators and advisors should consider gender in assessing college students' experiences in using a credit card before recommending financial management strategies in using a credit card. This process may work well for financial educators and advisors if they can integrate gender differences and experiences in using a credit card into guiding college students to understand relevant disclosures and make decisions that serve their best interests.

Previous research has suggested that male students tend to accumulate more credit card debt than female students (Wang, 2011a). Carpenter

and Moore (2008) have found that females tend to exhibit positive credit card usage. On one hand, financial educators and advisors should stress important credit card advertisement disclosures for male students to avoid negative credit card usages. On the other hand, financial educators and advisors should remind female students of important credit card advertisement disclosures since female students may be more susceptible to overconfidence in processing credit card advertisement disclosures. Moreover, the screening process mentioned above should also be considered for female students who have more experiences in using a credit card to avoid the issue with them being overconfident in using a credit card.

Study limitations and future research

Despite the inherent limitations of this study (for example, context-specific and limited types of credit card advertisement disclosures) that have to be confirmed in future research, some of the limitations should be taken into consideration. First, this study acknowledges the limitation of using a small and non-probability sample. Future research should use a more diverse sample to generalize the results of this study. For example, a national sample with differences in age, education, experiences in using a credit card and ethnicity should be considered for future research. This study found that message involvement with credit card advertisement disclosures influenced comprehension of the disclosures, whereas experiences in using a credit card influenced comprehension of the disclosures inversely. However, what drove these effects was not tested and could be different topics for future study. Future studies should also explore credit card users' cognitive processing of credit card advertisement disclosures in greater depth. Moreover, future studies can explore the effects of calibration of credit card users' motivation and experiences on processing and comprehension of credit card advertisement disclosures in greater depth (Alba and Hutchinson, 2000; Wang, 2009b).

On a related note, the present study used a single item to measure experiences in using a credit card. Even though research (Bergkvist and Rossiter, 2007, 2009) has shown that single-item measures are equally valid as multiple-item measures in research, future research should consider using multiple-item measures to replicate the results of the present study. In other words, future research should measure various experiences in using a credit card and conduct a factor analysis to categorize different experiences. Another limitation has to do with credit card users' motivation to process credit card advertisement disclosures (Wang, 2011d, 2012a). The variation in the correspondence of

motivation and true knowledge (Wang, 2006b) in using a credit card may also raise an important future research issue. For example, more knowledgeable card users are able to process credit card advertisement disclosures before making financial decisions. If card users are less motivated to process credit card advertisement disclosures, attention may become a factor that may influence comprehension of the disclosures. Thus, the interplay of motivation and knowledge may become intertwined determinants of processing credit card advertisement disclosures for more and less knowledgeable card users. In the same line of reasoning, the participants of this study did not actually make any applications or financial decisions. It is not clear whether conclusions reached by this study would apply to their own behaviors. Card users with more at stake may be more motivated to evaluate credit card advertisement disclosures before making any decisions.

Finally, regulations have been changed tremendously in the United States for last decade for credit card solicitations (FDIC, 2012). The CARD Act has significantly changed various credit card regulations for various aspects of credit card applications and billings (Benton, 2010). Some of these changes were not tested in this study. For example, disclosure requirements for credit cards solicitations include how font sizes and formats of fees and APRs are used. In a direct mail solicitation, fees were required to be summarized in tables. Thus, these changes provide researchers with further research directions since visual communications of these aspects may influence how consumers review important disclosures regarding credit card usages.

Conclusion

Financial disclosures are increasingly common in credit card solicitations, especially for college students. This study reveals that college students' processing and socialization emerge as important factors on comprehension of credit card advertisement disclosures. Although these factors' effects differ in their valences, this study underscores the importance of message involvement and experiences in using a credit card in financial behaviors. In financial behaviors that demand individual responsibility and self-sufficiency, understanding credit card advertisement disclosures to make sound decisions is an essential component of successful financial management. Given the importance of financial well-being, understanding the roles of socialization and processing factors in comprehension of credit card advertisement disclosures may pay off significantly for college students and current and future credit card users.

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7

Consumer Rationality/Irrationality and Financial Literacy in the Credit Card Market: Implications from an Integrative Review

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Introduction

The use of the credit card is one of the most popular payment methods and the most convenient sources of finance all over the world. In the last 30 years, enormous technological changes, such as the introduction of the ATM and e-banking, have allowed the rapid development of credit card use. According to the earnings report of Visa Inc. (http://investor.visa.com/phoenix.zhtml?c=215693&p=quarterlyearnings), the quarter ending 31 March 2013 reports a total volume (payment and cash volume) in the Visa credit program of nearly US$700 billion, with a growth rate of 10.2 per cent (constant USD). In the United States, the average credit cardholder has 3.7 credit cards as of 2009 (Foster *et al.*, 2011). The average US household owes $7128 on their credit cards as of October 2013 (www.nerdwallet.com/blog/credit-card-data/average-credit-card-debt-household/). Credit card debt is the third largest source of household indebtedness in the United States behind mortgages and student loan debt.

However, among credit card debt revolvers, almost a third of them have liquid assets (checking, saving or money market account balances,

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excluding any cash) that exceed their card balance (Bertaut *et al*, 2009). The surprising portfolio coexistence of high-interest credit card debt and low-interest liquid asset holdings questions the notion of arbitrage. Researchers (Brito and Hartley, 1995; Haliassos and Reiter, 2005) argue whether consumers act irrationally when they borrow using credit cards while simultaneously holding liquid assets.

In addition to the credit card debt puzzle, an 'interest rate puzzle' exists in the credit card market. The interest rate is high and sticky compared with the cost of funds. For example, in Hong Kong, most card issuers charge an annual percentage rate (APR) of 30 per cent or above despite the low interest rate environment in the past few years. The banks and card issuers earn huge profit from credit cards despite an environment that seems to be fully competitive. Some researchers (Ausubel, 1991) claim this practice is because of consumer irrationality, while others (Calem and Mester, 1995; Stango, 2002) argue it has nothing to do with irrationality.

Consumer rationality/irrationality seems to be a key issue in understanding the credit card market and in explaining the existing puzzles. Moreover, in the credit card market, consumers tend to make various mistakes that challenge the classical 'rationality' assumption in traditional microeconomics models. For example, people tend to decide based on ease of justification rather than utility maximization (Wonder *et al*, 2008). Besides, the credit card contract is extraordinarily complicated as it involves multidimensional information on a large number of prices (interest rate, annual fee, penalty fee and so on) and quantity constraints (credit limits, minimum payment and so on). Many of the terms and numbers are so complicated that they go beyond the knowledge and ability of the general consumer. The choice of a credit card with a teaser rate of 5 per cent for the first 6 months then an APR of 32.8 per cent, or a credit card with an APR of 20.9 per cent will force consumers into a dilemma. Thus, consumers may have difficulty in making financial choices (for example, Shefrin and Thaler, 1988). However, in the credit card market, consumers are required to make a lot of decisions. Whether to borrow money or not on a credit card is a decision that most households make every month. At every time of purchase, most cardholders decide on which credit card to use to avoid going over the limit or to enjoy some extra benefit. Unfortunately, several biases in decision making, such as time inconsistent preferences, overconfidence, anchoring effect and framing effect, affect the quality of the consumer decision in the credit card market.

Considering the popularity of credit cards, the prevalence of consumer irrational behavior and the increasing need for financial literacy programs,

it is important to conduct a review of related studies. Consumers, card issuers, policymakers and all participants in the credit card market will benefit from the integrative review and insightful implications. Consumers will become more aware of their irrational behavior, become more financial literate by seeking relevant education programs and save money on avoidable costs in the credit card market. Card issuers can exploit the mistakes of consumers, design profit-maximizing contracts and help to develop the credit card market. Policymakers can regulate card issuers, and educate consumers by providing various programs aiming to not only increase consumers' financial knowledge but also modify consumers' cognitive biases. This article also points out several further research directions in this promising field. This article contributes to the literature and business world by providing a deeper understanding of the credit card market, identifying several biases in consumer credit card behavior and evoking the importance of financial literacy programs.

The rest of the article is as follows. The next section introduces the methodology. This is followed by a review of the related literature on consumer rationality, consumer irrationality and financial literacy. The subsequent section discusses the implications for consumers, card issuers, policymakers and researchers. The final section provides conclusions and suggestions for further research.

Methodology

We focus on the consumer behavior perspective in the credit card market by dividing consumer behavior into rationality and irrationality. We recognize several biases, namely, time inconsistent preferences, overconfidence, anchoring effect and framing effect in consumer irrationality. Financial literacy closely relates to consumer behavior as well. Hence, the search for information includes the above keywords via three major electronic databases (ABI/INFORM, Academic Research Library and ISI web of knowledge). The relevant articles were then read and screened and the list of articles was supplemented through the references of the existing articles as the analysis continued. Finally, more than 80 papers were obtained from peer-reviewed journals, working papers, conference papers, book chapters and dissertations for the past 25 years. We found an increasing interest in this topic along the time line (see left part of Table 7.1). And related studies come from a variety of fields, namely, economics, banking and finance, marketing and consumer research, psychology, law, and other fields (see right part of Table 7.1).

Table 7.1 Statistics on the references

All articles arranged by date		**Peer reviewed journal articles arranged by field**	
Before 1990	4	Economic	20
1990–1994	1	Banking and finance	9
1995–1999	11	Marketing and consumer research	12
2000–2004	18	Psychology	7
2005–2009	35	Law	1
2010–present	12	Other area	4
Total	81	Total	53

Literature review

Literature on consumer rationality

In philosophy, rationality is the characteristic of any action, belief or desire that makes optimal choices under a set of constraints. This section reviews the studies on consumer rationality.

Credit card debt puzzle and rationality

The credit card debt puzzle, which was initially identified by Gross and Souleles (2002), refers to the phenomenon in which most US credit card holders revolve high-interest debt combined with substantial low-rate liquid assets. In this instance, economists sought to explain 'why do credit card holders not pay the bill?'.

The first line of reasoning is about self-control mechanism. In Bertaut *et al*'s (2009) model, an accountant manages household assets and debts, while the shopper consumes. In the equilibrium of the dynamic game, for the accountant to sell assets to pay off the debt is not necessarily optimal because the impatient shopper can charge more on the credit card. The model generates coexistence between credit card debt and substantial liquid assets, even if both entities are rational and financially sophisticated.

The second line of reasoning points out the liquidity need. Consumers make a rational decision when they borrow using a credit card because they can smooth their consumption and avoid some of the opportunity costs associated with holding precautionary money balances (Brito and Hartley, 1995). They can save transaction costs associated with arranging other personal loans (Brito and Hartley, 1995) and they need to hold liquid assets along with credit card debt, for some goods can only be bought by cash (Zinman, 2007; Telyukova, 2013). Telyukova and

Wright (2008) argue that agents use credit even if it is costly in terms of interest because they know they may need the liquidity later or when credit may not be available.

The above research implies that consumer irrationality does not necessarily cause the 'credit card debt puzzle'. Even with liquid assets, consumers may rationally borrow using credit cards to smooth consumption, to risk buffering and to self-control. There is empirical evidence from the Survey of Consumer Finance from 1970 to 2000, which shows that credit cards with a revolving feature have become the most widely held credit device. The total consumer revolving credit grew from $2 billion in 1968 to about $626 billion in 2000. Consumers believe that credit cards are useful and that they are better off with them than without them (Durkin, 2000).

Interest rate puzzle and rationality

Ausubel (1991) observes that from 1982 to 1989, the credit card interest rates are highly sticky (around 18 per cent), while the cost of funds varied from 15 per cent to less than 9 per cent. He claims that the high and sticky interest rate as well as the abnormal profitability of card issuers could be explained by consumer irrationality. Consumers do not search for cards with lower interest rates, and they underestimate the probability of future borrowings. However, Cargill and Wendel (1996) test Ausubel's hypothesis using data from the 1989 Federal Reserve Survey of Consumer Finances. Their findings indicate households correctly anticipate when credit cards will be used to obtain revolving credit. Moreover, consumers may rationally eschew searching for cards with lower interest rates because small outstanding balances imply low returns for searching.

Some researchers (Calem and Mester, 1995; Calem *et al*, 2006) use adverse selection to explain the stickiness of credit card interest rates and consumer behavior. Creditworthy borrowers tend to be less willing to search for credit cards with lower interest rates. As a result, a bank that unilaterally lowers its rates tends to attract relatively high-risk borrowers. Moreover, borrowers representing low default risks may have higher switch costs. The adverse selection problem caused by search costs and switch costs makes the credit card market imperfectly competitive.

The high interest rate is also a result of optional value embedded in the credit card (Park, 2004). Credit cards allow cardholders who have become riskier to borrow at the initial terms. A rational consumer will take advantage of this option, borrowing more when they become riskier. Thus, the credit card interest rate is higher than the interest rate on closed-end loans, even above the zero-profit rate.

The above research demonstrates that a high credit card interest rate is not caused by consumer irrationality, but results from adverse selection due to information asymmetry in the credit card market. Consumers have private information regarding their risk and preferences that banks do not know. Rational consumers will borrow when they become riskier. Rational consumers will also eschew search or be reluctant to switch. Empirical evidence shows that only one-third of households searched and compared offers before their applications for their credit cards (Hilgert *et al*, 2003).

Literature on consumer irrationality

Even though consumers, as a whole, are rational when taking advantage of credit cards, many circumstances will make consumers experience various biases or errors in their individual decisions and behavior in this market. This section reviews the studies on consumer irrationality.

Time inconsistent preferences

Traditionally, consumer behavior is described by the rational choice model in which agents discount future streams of utility or profits exponentially over time. However, exponential discounting cannot capture the tendency of decision makers to seize short-term rewards at the expense of long-term benefits. Hyperbolic discount function (Harris and Laibson, 2001), rather than the traditional exponential discount function, explains better the observed time preferences in which discount rates are greater in the short term than in the long term.

Faced with various credit card offers, consumers with time inconsistent preferences will usually choose the wrong credit card. Shui and Ausubel (2005) find consumers are more likely to accept an introductory offer that has a lower interest rate with shorter duration than a higher interest rate with longer duration. However, ex-post borrowing behavior reveals that the offer with the longer duration is better because respondents continue to borrow using the credit card and are reluctant to switch.

Consumers are over-responsive to introductory interest rates compared with the duration of the introductory offer and post-introductory interest rates. Besides, consumers are unable to rank different offers correctly (Ausubel, 1999). Short-run benefits largely determine the credit card choice of consumers, which may not be optimal from a long-run perspective.

Overconfidence

Overconfidence is a judgmental or perceptual bias that leads individuals to hold overly optimistic expectations or fail to estimate with accuracy

(Kahneman and Tversky, 1996). Perry (2008) finds that approximately 32 per cent of consumers overestimate their credit ratings, while only 4 per cent underestimate their credit ratings. Consumers who overestimate their credit ratings are less likely to budget, save or invest regularly.

Overconfidence leads to overborrowing (Hynes, 2004). Using a survey of 230 students, Seaward and Kemp (2000) report the tendency to overestimate future income is positively correlated with their actual level of debt. Overconfidence increases the risk of default. From 1980 to 2004, the number of personal bankruptcy filings in the United States increased more than fivefold, from 288 000 to 1.5 million per year, and the most common reason for bankruptcy was 'high debt/misuse of credit cards' (White, 2007). Consumers may underestimate the chances of unemployment, divorce or illness that make repayment difficult or impossible.

Overconfidence also results in consumers' underestimation of the probability of accruing outstanding balances and paying interest. Ausubel (1999) finds consumers are over-responsive to introductory interest rates compared with the duration of the introductory offer and post-introductory interest rates. They expect to use credit cards only for transaction convenience, and not as a source of credit. However, consumers end up paying high rates of interest on these unanticipated balances. Consumers are overconfident in underestimating borrowing probability, and later even deny that they have borrowed (Ausubel, 1991).

Anchoring effect

In the anchoring effect, arbitrary and irrelevant numbers affect the judgment of individuals (Kahneman and Tversky, 1996). Research in this field demonstrates that anchoring has a pervasive and robust effect in decision making.

Gross and Souleles (2002) find increases in credit limit generate an immediate and significant rise in debt, which is contrary to the Permanent Income Hypothesis (PIH). Under PIH, the consumption of consumers should be determined by their life-cycle income, and their credit card limit should not affect their spending. The observed irrationality can be explained by the anchoring effect. Consumers decide how much to spend and how much to borrow based on the credit limit which is set as an anchor. Soman and Cheema (2002) also find that consumers use the credit limit as a signal or anchor of their future earnings potential because they are unable to value correctly their future income.

Anchoring effect not only affects consumers' decision on how much to borrow but also on how much to repay. In an experiment (Steward, 2009), participants received a mock credit card statement. Some statements included a minimum repayment amount while others did not. The results indicate the minimum repayment information reduces all repayment sizes. In deciding how much credit card debt to pay, the minimum repayment is set as an anchor, and the banks earn huge revenues from interest by setting a low minimum repayment amount (usually 2 to 5 per cent in practice).

Framing effect

The framing effect usually occurs when equivalent descriptions of a decision-making problem systematically lead to different decisions. Several types of framing include attribute framing (Levin *et al*, 1998), risky choice framing (Tversky and Kahneman, 1981) and goal framing (Meyerowitz and Chaiken, 1987). Framing effect has a significant impact on purchasing behavior.

Ganzach and Karsahi (1995) conducted a field experiment on customers of a credit card company who did not use their cards for 3 months. They received communication messages either stressing losses from not using the card or stressing gains from using it. Card usage was monitored after the communication and results indicate the impact of the loss-framed message was much stronger than that of the gain-framed message.

In financial services marketing, the concrete promotional conditions perform better than abstract ones (Stibel, 2005). Consistent with Stible (2005), Leon (2012) finds that participants are more likely to apply for a credit card when they are presented with potential savings in a dollar amount than in a percentage value. The dollar amount is concrete information, and thus performs better than percentage value, which is abstract information. Agarwal *et al* (2007) analyze a unique market experiment conducted by a large US bank that offers consumers a choice between two credit card contracts, one with an annual fee but a lower interest rate and one with no annual fee but a higher interest rates. In order to minimize total costs (TCs), consumers expecting to borrow a sufficiently large amount should choose the contract with the lower interest rate. However, the authors discover about 40 per cent of consumers choose the sub-optimal contract. The annual fee is concrete information, whereas the interest rate is abstract information. Consumers tend to compare the offers based on concrete information, even though this information may lead to a sub-optimal choice for them.

Besides the above four biases, other biases such as mental accounting (Ranyard *et al*, 2006) and short-term memory overload (Estalami, 2009) will lead to sup-optimal financial decisions as well.

Literature on finance literacy

The above research suggests consumers often make mistakes in their financial decisions. Consumer financial illiteracy is a prominent explanation for these sub-optimal behaviors. Financial literacy is the ability to acquire sufficient information about financial concepts and instruments in order to make informed financial decisions (Agarwal *et al*, 2010a). The National Council on Economic Education (2005), Jump$tart Coalition and several researchers (for example, Hilgert and Hogarth, 2002; Lusardi and Mitchell, 2007b) analyze American financial literacy. International evidence on financial literacy comes from Australia and New Zealand (Australia and New Zealand Banking Group, 2004), the United Kingdom, Japan and Korea (Organization for Economic Cooperation and Development (OECD), 2005), among others. All these results show low levels of financial literacy. Moreover, some studies (for example, Gustman and Steinmeier, 2005; Lusardi, 2012) reveal more financially literate respondents have more wealth and education, and tend to be white and men. Besides demographic factors, what other factors affect financial literacy? How can financial literacy be improved? We will briefly review this burgeoning literature and shed light on consumer behavior in the credit card market.

Cognitive ability

Emerging literature indicates cognitive ability is an important predictor of financial outcomes. Cognitive ability is the capacity to perform higher mental processes of reasoning, remembering, understanding and problem solving (Benjamin *et al*, 2013). Researchers find that individuals with greater cognitive ability are more patient and forward-looking (Frederick, 2005), have higher earnings (Neal and Johnson, 1996) and show higher stock market participation (Grinblatt *et al*, 2011).

Agarwal and Mazumder (2010) use the result from the Armed Services Vocational Aptitude Battery (ASVAB) test to represent cognitive ability. Their studies indicate that consumers with higher overall composite test scores, specifically those consumers with higher math scores, are substantially less likely to make a financial mistake later in life.

Besides mathematical ability, age is another factor. Agarwal *et al* (2009) report that middle-aged borrowers pay lower interest rates and fees than their younger and older counterparts. They hypothesize this may be

a consequence of the trade-off between 'experiential capital' and 'analytical capital' (cognitive ability). Cognitive ability declines with age, which is documented by a wide variety of studies including medical research. Sanfey and Hastie (2000) reported that older respondents tend to be less accurate than younger respondents in decision making, as they considered fewer facts and more irrelevant information. Kim and Kim (2010) found that the extent of financial information search decreased with age.

In sum, the measurement of cognitive ability is a key issue in related studies. Researchers have used the ASVAB test (Agarwal and Mazumder, 2010), Armed Forces Qualification Test (Neal and Johnson, 1996) and Cognitive Reflection Test (Frederick, 2005) among others to measure cognitive ability; however, some argue that measured cognitive ability is associated with parental income and education, which in turn affect financial decisions. How to separate innate and acquired cognitive ability is a challenge.

Financial knowledge

Financial knowledge is the crystallized intelligence about finance (Gustman and Steinmeier, 2005). Generally, financial knowledge has a positive effect on observed behaviors in the credit card market. Robb (2011) studies the financial knowledge and credit card behavior of college students. Students with higher scores on a measure of personal financial knowledge are more likely to engage in more responsible credit card use.

Individual characteristics affecting financial knowledge have been explored. Males were reported to have more financial knowledge than females (Volpe *et al*, 1996; Markovich and DeVaney, 1997). Students with more years of work experience are more financially knowledgeable than those with less experiences (Chen and Volpe, 1998). Several studies suggest that family income may play a crucial role in young adults' attitudes and behaviors regarding the use of credit cards (Hayhoe *et al*, 2000; Chien and DeVaney, 2001).

Overall, financial knowledge is insufficient for both college students and adults. Chen and Volpe (1998), using a sample of 13 universities, find the average respondent scored only 53 per cent on a survey with 36 questions that cover general financial knowledge. Bernheim (1988) shows that adults nearing retirement did not report accurate estimates of expected social security benefits, and over half of respondents did not provide any estimation at all. Lusardi and Mitchell (2007a), using data from the 2004 Health and Retirement Survey, find that only 18 per cent of the respondents understood the difference between compound and simple interest.

These studies suggest consumers lack the financial knowledge and computational skill to make sound financial decisions. Consumers who were unable to calculate the interest rate on a loan borrowed more, accumulated less wealth and paid more for credit (Stango and Zinman, 2009a). Thus, financial education is vital in increasing financial literacy and enhancing consumer welfare.

Financial education

Financial education, defined by the OECD (2005), is 'the process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction, and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being'. Various financial education programs have been introduced in the United States and all over the world over the past few decades. The majority of financial education programs are provided not by education institutions but through community and business organizations (Fox *et al*, 2005).

As of 2011, 13 states in the United States require a personal finance course as a high school graduation requirement. However, mixed findings have been reported with the effect of such education. Peng *et al* (2007) find no significant relationship between taking a high school course and investment knowledge. On the contrary, in the national financial literacy examination conducted by Jump$tart Coalition, students who had taken a high school personal finance course performed better than those who did not take such a course (Mandell, 2004). Education programs provided to college students, however, show a consistently positive effect on financial knowledge and behavior (for example, Borden, *et al*, 2008).

Hogarth (2006) provides a review of the current status of financial education in the United States and summarizes studies that evaluate the effect of financial education. Various education programs are associated with improved financial behavior and improved economic status of families. Even short financial seminars had a positive impact on both financial knowledge and attitudes regarding installment and credit card debt (Fox *et al*, 2005). Elliehausen *et al* (2007) examine a credit-counseling program provided by the National Foundation for Credit Counseling. They find that counseling was most effective for credit card holders with the worst initial credit scores and debt behaviors. Barron and Staten (2009) find that in a credit counseling program, one-to-one counseling is not more

effective than telephone or Internet counseling. Hirad and Zorn (2002) report an individual program is more effective than classroom and home-study counseling.

While most financial education intends to increase financial knowledge, some researchers (for example, Fox *et al*, 2005) argue financial knowledge does not necessarily result in significantly better decisions. Therefore, Estelami (2009) proposes that financial education should attempt to modify consumers' cognitive biases and increase their cognitive ability. However, that will take long-term effort.

Summary

Summing up, we have reviewed literature on consumer rationality, consumer irrationality and financial literacy. Figure 7.1 shows the research framework.

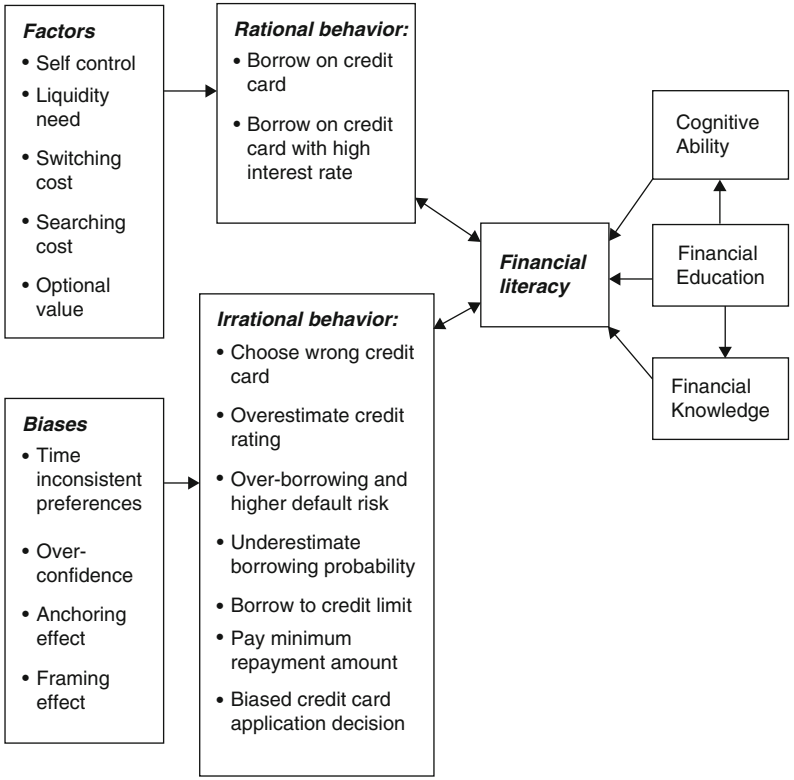

Figure 7.1 Research framework on consumer behavior in the credit card market

Implications

Implications for consumers

There are many implications for consumers derived from the above literature review. Consumers should make decisions from a long-run perspective, and not from a myopic viewpoint. Consumers should try to anticipate correctly future income and consumption, should be accurately aware of risk and not be too confident. Consumers should choose the right credit card based on a rational expectation of future usage. Consumers should decide how much to borrow and how much to repay on their credit cards based on their budget, and not allow the credit limit and the minimum payment requirement to affect their decision. Consumers should understand all the costs involved in owning a credit card.

To understand all the explicit and implicit costs involved in using a credit card, Stango and Zinman (2009b) investigate what consumers really pay on their credit card. They find that interest is the largest component of TCs. In fact, almost half of credit card interests could be avoided by substituting high-rate cards with low-rate cards and repaying debts by using available checking balances. Besides interest, penalty fees such as late fees are avoidable if minimum repayments are made. Over-limit fees are preventable if consumers choose a debit card or another credit card at the point of sale. Their research implies that consumers can save a lot of money on their credit card with only minor changes in behavior.

Changing habit and modifying inherent cognitive biases is not easy. Consumers can seek help from organizations that provide financial counseling programs. For example, Indianapolis Neighborhood Housing Partnership (INHP) is a voluntary mortgage counseling program. Agarwal *et al* (2010b) find consumers who participated in INHP had significantly lower default rates. Community Mortgage Loan Program provided by Consumer Credit Counseling Services is also found to help lowering consumers' default rates (Hartarska and Gonzalez-Vega, 2005). Besides attending relevant counseling programs, consumers can use decision tools on the Internet and software products to help in their decision. Consumers should seek more information and advices from various sources before they make financial decisions.

Implications for credit card issuers

Credit card issuers are able to earn profits when consumers make mistakes. Time-inconsistent preferences show that consumers are more impatient

in the short term. Card issuers can introduce schemes to encourage consumption even when consumers do not have sufficient money. Interest-free installment is a good example. Even card issuers do not earn interest from consumers; they earn interchange fees from merchants. Time-inconsistent preferences and the underestimation of the consumers regarding the probability of future borrowing make credit cards with low introductory rates very attractive to new applicants. Card issuers can promote their credit cards with a low introductory rate, even though the low rate is only available for a short duration. The framing effect implies that card issuers can promote their credit cards with no annual fees. Moreover, card issuers are able to affect the credit card usage of consumers. A larger credit limit and lower minimum payment requirement will bring card issuers more profit.

Gabaix and Laibson (2006) observe that firms choose to hide information for myopic consumers about future surcharges, fees, penalties, accessories, options and other add-ons. Credit card issuers can use shrouded information to make more profit from the decisions of myopic consumers. For example, firms can promote a credit card by claiming no annual fees but shroud the information that the annual fee is waived only for the first year, or by introducing a low introductory interest rate but shroud the information about the high interest rate afterwards.

Card issuers may take advantage of contract design to respond to consumer biases. Grubb (2009) shows consumer overconfidence creates incentives for firms to offer tariffs, which include quantities at zero marginal cost and steep marginal charges. For example, introductory credit card offers require an initial balance transfer fee, zero marginal charge per month for the first 6 months and a high marginal charge per month afterwards. DellaVigna and Malmendier (2004) discuss profit-maximizing contract design for goods with immediate benefits and delayed costs (for example, credit card financed consumption) that involve pricing above marginal cost and a lump-sum fee smaller than the setup cost, as well as introducing switching costs and charging back-loaded fees. Implied by DellaVigna and Malmendier's findings, credit card issuers should charge an interest rate above marginal cost together with a low initial fee or even offer a bonus. As banks and other credit card issuers are doing now, the interest rate exceeds prime rate by at least 10 percentage points. Many credit card issues offer bonuses (coupon, welcome gift and so on) to new applicants. To create switching costs, credit card firms introduce rewards points, exclusive privileges (for example, enjoy discounts on selected restaurants and shops; booking privileges at concerts and hotels) and so on. In the future, credit card issuers should introduce more creative and

more subtle and personalized methods to provide bonuses, to increase switching costs and to charge back-loaded fees.

Moreover, credit card issuers should take responsibility to encourage responsible lending/borrowing. For example, Capital One, in its Website, educates consumers on how to choose a credit card, how to understand credit card terms and how to use credit cards responsibly. Credit card issuers should provide more information about credit cards as well as more counseling to those in need.

In addition, researchers (for example, Worthy *et al*, 2010) find college students are more likely to misuse credit cards and there is debate whether credit card issuers should grant credit cards to college students. Credit card issuers should avoid aggressive marketing tactics to promote their credit cards to college students. Credit card issuers should cooperate with other organizations (for example, office of student financial assistance and student union) to educate and contribute to responsible usage of credit cards among college students.

Implications for policymakers

If consumers make poor financial decisions, the whole society will pay for it. For example, the 2008 global financial crisis originated from the burst of the US housing bubble. Consumers, bankers and investors irrationally expected house prices would keep rising, but the prices did not behave as expected. Policymakers should take responsibility to improve the quality of consumer financial decision making and to improve social welfare.

Policymakers should regulate information disclosure by credit card issuers. Consumers usually seek and compare information regarding APR or TC when choosing a credit source (Ranyard *et al*, 2006). Consumer credit regulations, such as the Truth in Lending Act (effective since 1968 in the United States), continue to emphasize the importance of APR, but TC information should be recognized as important as well. When choosing a credit card, consumers, on average, consult 1.4 sources of information, and most sources are seller-provided. If a consumer obtains information from one source, this consumer is less likely to seek out another source (Lee and Hogarth, 2000). Thus, policymakers should regulate the information disclosure by sellers and ensure that sources of information are reliable. Moreover, Conkey (2007) proposes to require credit card companies to disclose the number of years it would take for the cardholder to pay off the balance if only minimum required payments are made.

Policymakers should also take efforts to increase financial literacy. Financial education programs can improve financial knowledge, which

is associated with more positive credit card behavior. Hence, policymakers should allocate more resources to financial education. In the United States, much of the national financial education resources are run through a national non-profit organization called Jump$tart. More organizations, such as schools, worker unions and financial institutions, can take part in financial education as well. Moreover, policymakers should monitor the effectiveness of different types of education programs and allocate resources accordingly.

Implications for researchers

Referring to the research model in Figure 7.1, there are many avenues for research to be developed and explored. We have identified several biases relating to irrational behavior, and more biases can be identified to explain consumers' irrational behavior in the credit card market. Meanwhile, more types of irrational behavior can be identified and studied.

In the research framework, we show financial education, financial knowledge and cognitive ability will affect financial literacy, which will improve consumers' financial behavior. However, existing studies on relationships among financial education, financial literacy, and financial behavior and outcomes are not consistent and straightforward. Some financial education programs improve financial literacy, but not financial behavior, while some improve behavior without enhancing financial literacy. Besides, some researchers (for example, Lucey, 2005) argue the measure used in the Jump$tart Survey of financial literacy has problems in validity and reliability. Thus, researchers need to further explore this domain to determine how best to measure financial literacy and cognitive ability, how to measure changes in actual financial behavior and determine how literacy affects financial behavior, especially in the credit card market. Research is also needed to understand what factors affect financial literacy and to what extent financial education can improve financial knowledge and cognitive ability.

Existing empirical studies mainly deal with US data. However, consumers in different regions, cultures and levels of financial market development will have different behavior pertaining to the use of credit cards. For example, Chinese consumers seldom borrow on their credit cards. If we consider different institutional and cultural backgrounds, the comparison of consumer rationality and financial literacy in different regions will be quite interesting.

Moreover, a longitudinal study will be of interest as well. The technology advances as well as more laws and regulations implemented in the

credit card market lead to great changes in firm and consumer behaviors. For example, we do not know whether consumers incur lower search costs now with information access becoming more convenient or whether they incur higher search costs due to information overload. Thus, researchers may study whether consumers are becoming more rational and wiser in the twenty-first century. The trend in rationality/irrationality will reveal dynamics in the credit card market.

Lastly, most existing economic models discussing contract design and the relationship between the firm and consumers assume a profit-maximizing firm and irrational consumers. Besides monopoly, firms can be arranged according to different competitive status (duopoly, oligopoly and so on), and the discussion can focus on whether competition will make consumers more educated and more rational, or whether collusion will put firms in a better position to take advantage of the irrationality of consumers.

Conclusion

Credit cards have already become part of our daily lives. Many interesting phenomena in the credit card market have drawn the attention of researchers. This article reviews literature in consumer rationality/irrationality and financial literacy. It indicates that rationality and irrationality are equally plausible in the credit card market. Irrationality gives card issuers more opportunities to exploit consumers. However, financial literacy can improve the decisions and behavior of consumers in the credit card market.

This article has both practical and academic contributions to the credit card market. Credit card holders, credit card issuers and policymakers will benefit from the discussion and implication. A further research framework is also discussed. These future research directions need interdisciplinary knowledge (economics, psychology, finance, decision science, marketing, law and so on) and a variety of research methods (survey, experiments, field study, data analysis, simulation and so on). We hope this challenging yet promising area of research will improve the financial decision making of consumers in the credit card market and ultimately enhance social welfare.

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8

Psycho-Social Factors Impacting Credit Acquisition and Use by College Students

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Introduction

In this article, we offer conceptual and empirical insight for understanding the psycho-social variables that impact the acquisition of credit cards by college students and their ultimate use. Along this line of inquiry, and at a time when rising tuition, fewer grants and reduced state support has contributed to historic levels of student debt, a growing stream of research is investigating factors that impact 'financially risky' credit card usage by college students. For example, recent studies discuss parental involvement (Norvilitis and MacLean, 2010), impulsivity and compulsivity (Pinto and Mansfield, 2006; Wang and Xiao, 2009), financial anxiety (Nga *et al,* 2011), social status and materialism (Limbu *et al*, 2012), and locus of control (LOC) (Pirog and Roberts, 2007).

A recent study by Mae (2009) found that college seniors average US$4100 in credit card debt by the time that they graduate. This same study notes that 84 per cent of students own a credit card, the average number of cards per student is 4.6, 40 per cent admit they charge their card knowing they do not have the resources to pay it off and 45 per cent say they experience high levels of anxiety regarding their credit card balance. A factor contributing to high-debt acceptance among college students are the marketing efforts taken by credit card companies to acquire student users through intense direct mail campaigns, Internet and e-mail communications, and campus affinity programs (Sidoti and Devasagayam, 2010; Silver-Greenberg and Elgin, 2008; Thomas *et al,* 2011–2012). Compounding the problem is that college students often lack even a basic understanding of financial knowledge required to make informed choices (Warwick and Mansfield, 2000; Wang, 2012).

In response, the Obama administration received bipartisan support for the Credit Card Accountability, Responsibility, and Disclosure Act of 2009 (CARD). The CARD Act prohibits companies from giving credit cards to students under 21 unless they provide evidence of the ability to pay or have a co-signer, restricts companies from giving away free gifts as part of on campus marketing practices, bars credit bureaus from disclosing student contact information for mail and other marketing efforts, and mandates disclosure of contracts pertaining or agreements regarding credit card marketing.

Although the CARD Act has merit, Hawkins (2012) found that many college students are still qualifying for credit cards without proof of sufficient income to pay off their balances. These students also indicated that they are receiving a large number of credit card marketing efforts via varied communication channels. Equally problematic, the issuer-college disclosure requirement has led to virtually no change in the number of agreements for in campus marketing efforts. Protection

from credit card acquisition is important in that total credit card debt is highly correlated with the number of credit cards students have at their disposal (Hayhoe *et al,* 2005). While total credit card debt is down from 2009, Transunion reported that the average credit-card debt per borrower approaches $5000, a 4 per cent increase from 2011 (*Wall Street Journal*, 2013). Although external factors such as the financial crisis of 2008 have impacted indebtedness, college students are also to blame because of potentially irrational financial decision-making processes (Amar *et al,* 2011; Bearden and Haws, 2012).

Excessive debt leads to serious economic, social and psychological consequences for college-aged students (Palmer *et al,* 2001; Dwyer *et al,* 2011). Faced with taxing financial situations, graduates with high debt report daily emotional stress, low self-esteem, decreased confidence in managing economic resources and diminished psychological well-being (Norvilitis *et al* (2003); Goetz *et al,* 2011. Long-term detriments include a higher likelihood to default on student loans, bankruptcy and damaged credit history, increased college dropout rate, difficulty finding employment after graduation, poor mental health and, in some cases, attempted suicide (Berg *et al,* 2010; Robb and Pinto, 2010). Although these psychosocial effects vary among college-aged students, the impact is significant and warrants attention (Harrison, 2012). Research is thus needed to understand psycho-social stressors to students' financial well-being and for informing public policy seeking to limit predatory practices by credit companies (Slowik, 2012).

Despite these concerns, research is needed that investigates the variety of factors affecting students' decisions to acquire and use credit cards (Chudry *et al,* 2011; Limbu *et al,* 2012). Lacking are comprehensive and integrative models that examine a range of antecedent factors and psychological processes that may lead to potentially risky credit behaviors of college students (Xiao *et al,* 2011). Moreover, because acquiring a credit card is new to many college students, integrative research that investigates the psychological and sociological drivers of credit card acquisition and their use is warranted (Chan *et al,* 2012).

The purpose of this article is to answer the call for more comprehensive research that frames credit card acquisition and use in terms of personality traits, psychological constructs and social behaviors (Xiao *et al,* 2011; Chan *et al,* 2012; Harrison, 2012; Limbu *et al,* 2012). We develop and test two empirical models to determine the convergence and divergence of these antecedents on *how many* credit cards people acquire and *how much debt* they accrue. We contribute to the literature by empirically investigating the conceptual underpinnings of these two divergent credit card behaviors. To our knowledge, this is the first study to examine how

these antecedents differentially affect two distinct credit card behaviors, both of which have economic and psycho-social implications.

Literature review and model development

Credit card acquisition versus credit card debt balance

The bulk of credit card research has focused on debt acquisition rather than the number of credit cards acquired. The CARD Act, however, was enacted to address both issues. Regarding the acquisition of credit cards, the CARD Act places restrictions on the marketing practices used by credit card companies to acquire customers, and especially when targeting college students. Credit card debt is impacted in part *vis-à-vis* the requirement that students have the ability to pay (on their own and/or parents as cosigners). Although the number of credit cards is positively associated with total credit card debt (Hayhoe *et al,* 2005), we are particularly interested in whether they differ in terms of psycho-social antecedents.

As Figure 8.1 shows, the antecedent variables in our model contain six psycho-social dimensions: parental involvement, LOC, compulsivity, impulsivity, social status and materialism, and financial anxiety.

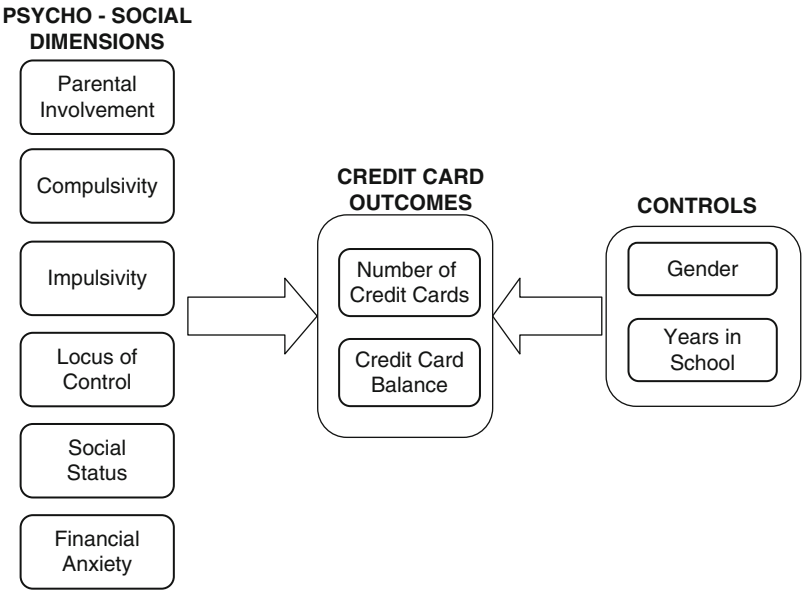

Figure 8.1 Proposed psycho-social credit card model

Although these variables have all been found to independently impact credit card usage, based on calls for comprehensive research that examines their interrelationships, our study seeks to understand their joint direct and indirect impact as well (Xiao *et al,* 2011; Harrison, 2012; Limbu *et al,* 2012). Our two dependent variables are number of credit cards and total credit card debt (Chan *et al,* 2012), outcome variables that to the best of our knowledge have not been compared and contrasted in comprehensive frameworks. In Table 8.1 we summarize key studies used to select our independent variables in our model.

Table 8.1 Review of the literature

	Conceptualization	**Authors**	**General findings**
Parental involvement	Parental involvement seen as a positive mechanism for preparing students for prudent credit card use while attending college	Joo *et al* (2003); Limbu *et al* (2012); Norvilitis and MacLean (2010); Xiao *et al* (2011)	Parental involvement reduces credit card debt
Compulsivity	Part of a broader addictive behavioral trait that consists of recurring, purposeful and often ritualistic consumer spending patterns	Joireman *et al* (2010); Norum (2008); O'Guinn and Faber (1989); Park and Burns (2005); Palan *et al* (2011); Roberts (1998); Roberts and Jones (2001); Wang and Xiao (2009)	Although not well studied in terms of number of credit cards, compulsivity is associated with riskier credit behavior
Impulsivity	Personality trait favoring immediate actions with little consideration for long-term consequences	Baumeister 2002; Bernthal *et al* (2005); Desarbo and Edwards (1996); Mansfield *et al* (2003); Nga *et al* (2011); Palmer *et al* (2001); Pirog and Roberts (2007); Plunkett and Buehner (2007); Soman (2001); Verplanken and Sato (2011)	Impulsivity is associated with riskier credit behavior

(*continued*)

Table 8.1 Continued

	Conceptualization	Authors	General findings
Social status materialism	Consumers evaluate themselves and others according to their possessions, placing a premium on social status as a lifestyle facilitator	Limbu *et al* 2012); Nga *et al* (2011); Park and Burns (2005); Roberts (1998); Roberts and Jones (2001); Wang and Xiao (2009)	Projecting social status through material possessions and purchases increases credit card usage
Locus of control	Propensity to the underlying cause of outcomes in terms of rewards and punishments. Internals feel they have more control than externals	Caputo (2012); Joo *et al* (2003); Pinto *et al* (2004); Plunkett and Buehner (2007); Tokunga (1993); Warwick and Mansfield (2000); Wang *et al* (2011); Watson (2009); Xiao *et al* 2011	Externals have more positive attitudes toward money and credit, manage credit cards and money more irresponsibly, and have higher credit card debt
Financial anxiety	Emotional anxiety related to money and debt	DeSarbo and Edwards (1996); Joireman *et al* (2010); Lim and Sng (2006); O'Guinn and Faber (1989); Pinto *et al* (2004); Ridgway *et al* (2008); Shapiro and Burchell (2012)	Financial anxiety is associated with greater credit card debt

Consumer socialization

Consumer socialization has been viewed as the process through which children and teens acquire knowledge and attitudes needed for functioning in the marketplace (Ward, 1974). As part of this learning process, young people are influenced by others across a wide range of consumer behaviors through consumption symbolism, social motives and materialism (John, 1999).

Although not the sole socialization mechanism, parental involvement plays a role in teaching children appropriate attitudinal and behavioral

skills for interacting in the marketplace (Carlson and Grossbart, 1988; Yu, 2011). Specific to financial skills, parental involvement is a positive mechanism for preparing students for prudent credit card use while attending college (Xiao *et al,* 2011). For example, Joo *et al* (2003) find that the students whose parents frequently used credit cards were more likely to maintain positive attitudes toward credit and credit cards. In contrast, students whose parents mismanaged credit card debt used credit cards less frequently than those who witnessed positive spending habits. As such, positive and frequent parental involvement in both the pre- and post-acquisition stages is associated with lower credit card balances (Norvilitis and MacLean, 2010; Limbu *et al,* 2012). Consistent with the CARD Act, students may receive pre-acquisition support from their parents by having them as co-signers.

Hypothesis 1: Parental involvement is (a) positively related to the number of credit cards and (b) negatively related to total credit card debt.

Compulsive and impulsive buying behaviors

Compulsive buying is defined as the inability to control purchasing behavior and is typically seen through the lens of uncontrollable and irrational decision processes (Lo and Harvey, 2011). Broadly, O'Guinn and Faber (1989) characterize compulsive buying as part of a broader addictive behavioral trait that consists of recurring, purposeful and often ritualistic consumer spending patterns. Compulsive buying thus has the potential to negatively impact consumer welfare because of emotional and interpersonal consequences of debt (Park and Burns, 2005). In many ways, college students are conditioned to associate credits cards with unrestrained spending, partly as a result of vigorous on-campus marketing efforts by credit card companies (Manning, 2000; Pinto and Mansfield, 2006). Research shows that compulsive buyers are likely to have a greater number of credit cards and exhibit less restraint when using these cards (O'Guinn and Faber, 1989; Roberts, 1998; Roberts and Jones, 2001; Wang and Xiao, 2009). Compulsive credit card behavior by college students is due in part to 'living in the moment' (Norum, 2008). Specific to the current context, high levels of compulsivity among college students may lead to more credit cards (Palan *et al,* 2011) and greater debt (Joireman *et al,* 2010).

Impulsive buying behavior has been characterized as an unintended, less deliberate and irresistible decision-making process (Rook and Fisher, 1995; Solomon, 2007; Lai, 2010). Rook and Fisher (1995) argue that impulsivity is a personality trait favoring immediate actions with

little consideration for long-term consequences. Consumer researchers define impulsivity in terms of sudden and unplanned buying experiences undertaken to attain immediate gratification without financial forethought (Sengupta and Zhou, 2007; Thomas *et al,* 2011–2012). This immediacy orientation often causes conflict between the urge to consume versus the willpower to resist temptation (Zhang and Shrum, 2009). Credit cards magnify this conflict in that easy use of credit increases the ability and willingness to buy while pushing financial obligations off to a later date (Bernthal *et al,* 2005; Verplanken and Sato, 2011). Of interest, Palmer *et al* (2001) and Pirog and Roberts (2007) argue that credit card acquisition is itself an impulse buy. As a group, students often have low self-control and are more likely to focus on immediate benefits (Baumeister, 2002) and can readily use their credit card without an immediate depletion of funds (Soman, 2001). Research suggests impulsive students are more likely to maintain a credit card balance and to engage in risky financial behavior (Mansfield *et al,* 2003; Plunkett and Buehner, 2007).

Although impulsive buying and compulsive buying are internal consumer traits, clear social-psychological distinctions exist (Faber and O'Guinn, 2008). While both impulsive and compulsive buying behaviors are marked by an inability to control purchase desires (Chudry *et al,* 2011; Wang *et al,* 2011), compulsive buying represents a chronic loss of control, whereas impulse purchases occur through a situation-specific loss of self-control (Baumeister, 2002; Wang and Xiao, 2009). Impulse and compulsive buying differ in terms of triggering mechanisms. Impulsive buying is ignited via an external trigger (for example, marketing stimulus), whereas compulsive buying behavior is a result of stable internal traits (Desarbo and Edwards, 1996). Compulsive spending is thus an ongoing and enduring propensity to buy, whereas impulsive spending represents unreflective and spontaneous buying (Nga *et al,* 2011). We posit:

Hypothesis 2: Compulsive buying behavior is positively related to the (a) number of credit cards and (b) total credit card debt.

Hypothesis 3: Impulsive buying behavior is positively related to the (a) number of credit cards and (b) total credit card debt.

LOC

LOC refers to the propensity to view the world and the underlying cause of outcomes in terms of rewards and punishments (Rotter, 1966).

Consumers with an internal LOC orientation believe that they designate their fate and are in control of their behaviors, rewards and losses (Pinto *et al,* 2004). These individuals take active approaches to secure desired outcomes, accept more responsibility for their actions and use risk avoidance strategies (resist urge to buy) to cope with future losses. People with an external LOC attribute their actions and outcomes to outside forces beyond their control. They are thus more likely to feel the need to take charge of their lives through external controls and risk acceptance mechanisms (that is, purchase) in their environment (DeSarbo and Edwards, 1996).

Research suggests that external LOC consumers and internal LOC consumers hold discrepant views toward credit, money and purchase behaviors (Xiao *et al,* 2011; Caputo, 2012). For the most part, college students feel that credit cards are good when used appropriately (Warwick and Mansfield, 2000), and thus fall under their spending control. Compared with internals, externals are believed to have more positive attitudes toward money and credit, are less likely to manage credit cards and money responsibly, act compulsively, and have higher credit card debt (Tokunga, 1993; Wang *et al,* 2011; Caputo, 2012). Specific to college students, research evidence exists that externals are less risk adverse regarding debt purchases and carry higher balances than internals (Joo *et al,* 2003; Plunkett and Buehner, 2007). Researchers have begun to operationalize LOC credit card behaviors in terms of whether individuals pay off balances with other credit cards or other loans, hide their debt from others, purchase as a form of external self-expression, align with their spending habits to conform with others in their social group and whether they in fact even intend to pay what they owe debt obligation (Joo *et al,* 2003; Watson, 2009; Xiao *et al,* 2011). We propose that:

Hypothesis 4: A positive relationship exists between external LOC and (a) the number of credit cards and (b) total credit card debt.

Status consumption and materialism

Materialistic and status-seeking consumers tend to evaluate themselves and others according to their possessions, placing a premium on social status as a lifestyle facilitator (Bernthal *et al,* 2005). Recent research suggests that projecting a certain social status through material possessions and purchases is directly related to increased credit card usage (Park and Burns, 2005; Limbu *et al,* 2012). For students, credit cards are a means by which they develop and maintain social status (Roberts, 1998; Wang

and Xiao, 2009; Nga *et al,* 2011). Students who place greater importance on materialistic purchases often do so to achieve social goals or status (Sidoti and Devasagayam, 2010), which in turn has been found to lead to greater credit card debt (Nga *et al,* 2011; Limbu *et al,* 2012). Along these same lines, Roberts and Jones (2001) found a direct relationship between power and prestige (see also Yamauchi and Templer, 1982) and excessive buying by college students.

Hypothesis 5: A status seeking and materialistic orientation is positively related to (a) the number of credit cards and (b) total credit card debt.

Financial anxiety

Termed financial anxiety, Shapiro and Burchell (2012) position it as a 'conscious and intuitive emotional anxiety toward one's personal finances' (p. 92), often leading to a mismanagement of money and debt. Financial anxiety emerged as an important construct from investigations of financial attitudes (Lim and Sng, 2006), and is based in part on subscales measuring general attitudes toward money, most notably Yamauchi and Templer's (1982) Money Attitude Scale and Furnham's (1984) Money Beliefs and Behavior Scale. Financial anxiety may be explained in part by the notion that excessive buying produces more anxiety (O'Guinn and Faber, 1989; Pinto *et al,* 2004), leading to a cycle of additional shopping as a means of alleviating stress and worry (DeSarbo and Edwards, 1996). This view is supported by recent research showing that compulsive consumers tend to have higher levels of stress consistent with financial anxiety (Ridgway *et al,* 2008; Joireman *et al,* 2010). In this regard, financial anxiety may be both an antecedent and consequence of debt. While financial anxiety as an antecedent for explaining credit card acquisition and debt has been largely untested, and few scales exist to measure this construct (Shapiro and Burchell, 2012), we propose the following:

Hypothesis 6: High anxiety is positively related to the number of credit cards and total credit card debt.

Method

Sample

A total of 205 students enrolled in six marketing classes and two psychology classes at a Midwestern University participated in the study.

Table 8.2 Respondent profile

Gender	**Per cent**
Male	52
Female	48
Class standing	
Freshman/sophomore	21.5
Junior	51.7
Senior	26.8
Number of credit cards	
One	17.6
Two	39.0
Three	20.0
Four	7.3
Five	16.1
Mean number = 2.65 cards	
Total credit card balance	
Pay balance each month	45.9
$1–$500	23.9
$501–$1000	7.3
$1001–$1500	7.8
>$1500	15.1

Participating students were offered extra credit. To obtain a needed mix of students with varied class-standing status, these classes ranged from courses available to freshmen (Introduction to Psychology) to those required by juniors and seniors (Principles of Marketing). Table 8.2 provides the profile of respondents. As a note, 22.9 per cent had a credit card balance over $1000, a benchmark for risky credit behavior (Xiao *et al,* 2011).

Measure development

We first conducted an extensive literature review to identify potential psycho-social dimensions to include in the questionnaire. We then conducted 40 student interviews and three focus groups that involved general discussions of their credit card behaviors. The unpublished findings from this qualitative assessment along with the literature review were used to develop our survey instrument. All questions were original (though adapted from the literature) and were measured on a 5-point Likert scale ranging from 1 = 'strongly disagree' to 5 = 'strongly agree'. The two dependent measures, total number of credit cards and balance

carried, were self-reported. The questionnaire was then distributed to the 205 student volunteers.

- *Financial anxiety* (α=0.80): Seven-item measure adapted from Roberts and Jones (2001), Nga *et al,* (2011) and Pinto *et al,* (2000).
- *Impulsivity* (α=0.80): Five-item measure adapted from Rook and Fisher (1995), Pirog and Roberts (2007), Nga *et al,* (2011) and Wang and Xiao (2009).
- *Complusivity* (α=0.73): Four-item measure adapted from Faber and O'Guinn (1992) and Wang and Xiao (2009).
- *Parental involvement* (α=0.78): Five-item measure adapted from Palmer *et al* (2001) and Norvilitis and MacLean (2010).
- *Locus of control* (α=0.70): Five-item measure adapted from Rotter (1966), Roberts and Jones (2001), Pirog and Roberts (2007) and Nga *et al* (2011).
- *Social status and materialism* (α=0.70): Four-item measure adapted from Nga *et al* (2011).
- *Gender and class standing:* Used as control variables to ascertain whether the hypothesized relationships exist after gender and age are accounted for in our models (Joo *et al,* 2003; Lyons, 2004; Hayhoe *et al,* 2005).

Initially, we subjected the data to an exploratory principal components factor analysis to verify dimensionality and the resulting dimensions and items were subjected to an item-to-total correlation analysis and eliminated those with low item-to-total correlations. On the basis of previous research and our extensive item development process, we hypothesized six psycho-dimensions. As hypothesized, six factors emerged, all of which had coefficient α's above the acceptable level of 0.70 for exploratory research (Nunnally, 1978). In that, the average communality across all the dimensions was 0.535 and the factor loadings sufficiently high, a sample of 205 students is acceptable for determining dimensionality (for a review, see MacCallum *et al,* 1999) (Table 8.3).

Results

Using SPSS Version 20, we first correlated the number of credit cards with balance carried, noting a Pearson correlation coefficient of 0.358 (P<0.001), indicating that they are related but also capture different variation. Using multivariate regression, we used factor scores for each

Table 8.3 Factor loadings of survey items on six psychosocial factors and coefficient α's

	Anxiety	Impulsivity	Parent	LOC	Compulsivity	Status
Having a credit card makes me feel stressed	0.781	—	—	—	—	—
Having a credit card makes me feel anxious	0.692	—	—	—	—	—
I look back and regret making credit card purchases	0.687	—	—	—	—	—
I am worried about my credit card spending	0.595	—	—	—	—	—
Having a credit card makes me feel impulsive	0.512	—	—	—	—	—
I envy those who have no credit card debt	0.465	—	—	—	—	—
I use my credit card knowing I don't have the money	0.420	—	—	—	—	—
When using my credit card I buy more than one item	—	0.710	—	—	—	—
With my credit card I buy what I want when I want it	—	0.708	—	—	—	—
I am more likely to buy something if I can pay for it with a credit card	—	0.677	—	—	—	—
Having a credit card makes me feel like I have 'extra' money	—	0.570	—	—	—	—
I spend more money with credit cards than without them	—	0.480	—	—	—	—
My parents have access to my monthly credit card statement	—	—	0.765	—	—	—
My parents pay one or more of my credit card account(s) regularly	—	—	0.761	—	—	—

(*continued*)

Table 8.3 Continued

	Anxiety	Impulsivity	Parent	LOC	Compulsivity	Status
My parents are aware of what I buy with my credit card	—	—	0.742	—	—	—
My parents influence how I use my credit card	—	—	0.682	—	—	—
My parents gave my first credit card to me	—	—	0.633	—	—	—
I pay credit card balance(s) off with another credit card(s)	—	—	—	0.772	—	—
I have needed a bank loan to pay an overdue credit card balance	—	—	—	0.742	—	—
I use my credit card to keep up with my friend's spending habits	—	—	—	0.584	—	—
I make an effort to hide my credit card debt from people	—	—	—	0.554	—	—
My credit card allows me to maintain the kind of image I want to express	—	—	—	0.483	—	—
I can't go shopping without my credit card	—	—	—	—	0.812	—
When I leave the house I make sure to bring my credit card	—	—	—	—	0.692	—
I do not feel comfortable without a credit card in my possession	—	—	—	—	0.611	—
Having a credit card makes me feel secure	—	—	—	—	0.567	—
What I see on television influences my credit card use	—	—	—	—	—	0.803
I use my credit card to impress people	—	—	—	—	—	0.795
I envy those who have larger credit card spending limits than I do	—	—	—	—	—	0.581
Credit cards are symbols of wealth and prosperity	—	—	—	—	—	0.431
Coefficient α	0.80	0.73	0.78	0.70	0.73	0.70

of the six psycho-social dimensions as independent variables; gender and class standing were used as control variables. The two tested models were:

$$\begin{aligned}&\text{Number of credit cards}\\&= \text{B0} + \beta 1_1\text{*(Parental involvement)}\\&\quad + \beta 2_1\text{*(Compulsivity)} + \beta 3_1\text{*(Impulsivity)}\\&\quad + \beta 4_2\text{*} + \text{(LOC)} + \beta 5_1\text{*(Social status)}\\&\quad + \beta 6_1\text{*(Financial anxiety)}\end{aligned} \tag{1}$$

$$\begin{aligned}\text{Total debt} = \text{B0} &- \beta 1_2\text{*(Parental involvement)}\\&+ \beta 2_2\text{*(Compulsivity)}\\&+ \beta 3_2\text{*(Impulsivity)} + \beta 4_2\text{*(LOC)}\\&+ \beta 5_2\text{*(Social status)}\\&+ \beta 6_2\text{* (Financial anxiety)}\end{aligned} \tag{2}$$

As Table 8.4 shows, both the regression explaining number of credit cards ($R^2 = 0.211$, $F = 6.36$, $P = 0.000$) and the regression explaining total credit card debt ($\underline{R}^2 = 0.290$, $F = 9.68$, $P = 0.000$) were highly significant. The multivariate tests show that all the psycho-social dimensions, with the exception of parental involvement ($P < 0.10$), significantly contributed to the joint explanation of the dependent variables. However, when we look at the separate regression, except for mental impulsivity and social status, which were significant in both models, each of the remaining variables was significant in only one of the two models, thus supporting our contention that different psycho-social processes influence total debt and the number of cards. Table 8.5 presents a summary of results for each of the hypotheses.

In the number of credit cards model, four of the psycho-social dimensions were significant predictors, as were gender and year in school. All the significant relationships were in the hypothesized direction. In terms of the relative impact of the psycho-social dimensions on the number of credit cards, compulsivity had the strongest influence ($\beta = 0.321$, $P < 0.001$), followed by impulsivity ($\beta = 0.189$, $P < 0.05$) and social status ($\beta = 183$, $P < 0.05$). Parental involvement, anxiety and LOC were not significant predictors of the number of credit cards held by students. For the control variables, women had more credit cards ($\beta = 0.506$, $P < 0.01$), as did respondents with more years in school ($\beta = 0.273$, $P < 0.01$).

Five of the six psycho-social dimensions were significant predictors of the total credit card balances maintained by students. In this model, gender was not a significant predictor of students' outstanding credit card balances. Anxiety ($\beta = 0.437$, $P < 0.001$) and LOC ($\beta = 0.376$,

Table 8.4 Multivariate regression results: Number of credit cards and total credit card debt

Variables	Multivariate	Number of credit cards			Total credit card debt		
	Test Wilk's λ	Standard β	*t*-value	Significance	Standard β	*t*-value	Significance
Intercept	0.824 ($P=0.000$)	1.612	5.29	0.000	1.57	4.73	0.000
Parental involvement (Hypothesis 1)	0.975 ($P=0.10$)	–0.092	–1.08	NS	**–0.193**	–2.11	0.036
LOC (Hypothesis 2)	0.912 ($P=0.000$)	0.059	0.697	NS	**0.37**	4.15	0.000
Compulsivity (Hypothesis 3)	0.924 ($P=0.001$)	**0.321**	3.78	0.000	0.021	0.234	NS
Impulsivity (Hypothesis 4)	0.946 ($P=0.004$)	**0.189**	2.24	0.026	**0.278**	3.06	0.003
Social status (Hypothesis 5)	0.932 ($P=0.002$)	**0.183**	2.16	0.032	**0.317**	3.47	0.001
Financial anxiety (Hypothesis 6)	0.903 ($P=0.000$)	0.063	0.735	NS	**0.437**	4.76	0.000
Gender (0=M, 1=F)	0.957 ($P=0.016$)	0.506	2.90	0.004	0.181	0.966	NS
Years in school	0.935 ($P=0.007$)	0.273	2.99	0.003	**0.194**	1.98	0.049

Number of credit cards ($F=6.36$, $P=0.000$, $R^2=0.211$).
Total credit card debt ($F=9.68$, $P=0.000$, Adjusted $R^2=0.290$).

Table 8.5 Review of hypotheses: Number of credit cards and total credit card debt

	Dependent variable: Number of credit cards		Dependent variable: Total credit card debt	
	Hypothesized direction	**Hypothesis supported?**	**Hypothesized direction**	**Hypothesis supported?**
Parental involvement (Hypothesis 1)	+	No	−	Yes
LOC (Hypothesis 2)	+	No	+	Yes
Compulsivity (Hypothesis 3)	+	Yes	+	No
Impulsivity (Hypothesis 4)	+	Yes	+	Yes
Social status (Hypothesis 5)	+	Yes	+	Yes
Anxiety (Hypothesis 6)	+	No	+	Yes

$P<0.001$), neither of which was significant in the total number of credit cards model, were the two strongest predictors of credit card balance. Social status ($\beta=0.317$, $P<0.001$) was the third strongest predictor, followed by impulsivity ($\beta=0.278$, $P<0.01$) and parental involvement ($\beta=-0.193$, $P<0.05$). All but compulsivity variables were in the hypothesized direction.

Discussion and conclusion

Answering the calls for comprehensive models of credit card usage (Norvilitis *et al,* 2006; Pirog and Roberts, 2007; Xiao *et al,* 2011; Chan *et al,* 2012), our results provide preliminary support for such a model. The findings support the psycho-social framework that models predicting the number of credit cards students own and their subsequent level of debt are multidimensional and complex. Specifically, our six psychosocial variables and two control variables accounted for 21.1 per cent of the variation on the number of credit cards acquired and 29 per cent of the variation in total debt accrued. Individually, our results are consistent with past credit card research that compulsivity, impulsivity, financial anxiety, social status and external LOC lead to more credit usage and parental involvement leads to lower balances. Collectively, we extend the research by showing that these variables differentially influence the

overall number of credit cards owned and credit card debt accumulation. However, because our sample was relatively small, from only two different courses (though six total sections) and one university, research is needed to determine whether our psycho-social dimensions and results are generalizable in other contexts.

In particular, our findings show that positive parental involvement is associated with lower overall debt *balance*. Parental involvement throughout the socialization process and beyond proves to be an integral component in creating mindful debt practices for young adults (Dotson and Hyatt, 2005). It is not always possible for parents to prevent financial mistakes; however, stricter access to financial instruments for students as well as forms disclosing or highlighting the implications of their decision could prove useful in credit card accumulation.

Through the active control of behaviors (Pinto *et al,* 2004) and the delay losses perspective with an external orientation (Plunkett and Buehner, 2007), we find that LOC is the second most powerful predictor of students' credit card *balances*. In part, the practice of shifting debt from one credit account contributed to higher debt balances. In general, LOC has not been widely studied in this context. Previous research using an either/or approach to LOC has limited research capabilities. By merging psycho-social characteristics that may not be unique to a single group and/or that are more collectively effective, our research contributes to the existing literature base by testing a more comprehensive LOC construct and is consistent with recent findings by Xiao *et al* (2011). Although the CARD Act has not impacted how many cards college students have, public policy in the form of stricter qualification rules as they relate to the number of cards younger people have and/or how balances are transferred should be considered.

Our findings for compulsive and impulse behavior tendencies support the notion that though these factors share some similar characteristics, each influences credit card usage and debt differently. Compulsivity is a long-term and ongoing trait, whereas impulsivity is context-specific (Solomon, 2007). Notably, both compulsivity and impulsivity are significant predictors of the total number of credit cards a person owns. However, impulsivity is a significant predictor of credit card *balances*, whereas compulsivity is not. A possible explanation is that students are relatively inexperienced credit card users and lack the compulsive characteristics associated with long-term credit use. Similarly, inexperience with credit overall may be driving this opposite effect with impulsive buying behaviors because students quickly learn that credit cards allow on-demand purchases. This finding points to an important research avenue warranting further attention.

As anticipated, social status proved to be a significant predictor of the number of credit cards and credit card balance in both models. As college life entails many social encounters, and consumption facilitates social status for college students and consumers in general, this finding supports prior research (Roberts, 1998). On the one hand, aspirational behavior is prompted by the multitude of mass media and advertising expounding the social- and status-enriching benefits credit cards offer. With continuous social demands placed on college students despite social class, additional research is necessary to understand the role of social pressure in student debt accrual. Our results thus lend support to Limbu *et al* (2012) showing that status and materialism lead to increased credit card debt (though not number acquired).

Although not a significant predictor of the *number* of credit cards owned, anxiety is the most influential factor on credit card *balances* maintained. Psychological stress related to credit card debt can have potentially devastating effects on college students (Roberts and Tanner, 2000), particularly when embarking on a new life phase. Our findings show that financial anxiety is associated with greater debt but not the number of credit cards acquired. Developing educational materials and implementable management tools for inexperienced users to moderate debt is a first step in mitigating the debt crisis faced by many entering the workforce. Of interest, a question remains whether financial anxiety leads to a cycle of shopping as a means of alleviate ensuing stress and worry and thus whether it is an antecedent or consequence of credit card debt, or both. As financial anxiety was used as a predictor of credit card acquisition and debt in our models, future research should investigate the sequential ordering of these relationships through structural equation modeling and/or simultaneous equations.

Overall, our findings suggest that young adults in our sample who give in to impulsive behavior have greater financial debt. Combined with financial stress, lack of parental involvement and easy access to credit cards, the psycho-social factors that make up the young student personality can have devastating effects in terms of their financial well-being. As a consequence, collaborative efforts by government, business and society are needed to curtail irresponsible spending. However, governmental or business financial education programs, while efficient in providing the scope for responsible spending, may not be as effective in terms of the implementation of a responsible financial record. Future research should look into the most effective ways of transfer of social behavior in terms of financial awareness.

Finally, although our proposed framework in its current form proves reliable and valid for exploratory purposes, additional research is

required to study non-linear, interactive and other more complex models. Moreover, our model only investigated six psycho-social variables, additional psychological, sociological and economic factors influencing credit card usage and total debt should be explored. Subsequent research might endeavor to conceptualize and test these pathways, which would prove beneficial for predicting credit card usage and crisis debt within a college context. Our models should be evaluated across the consumer age lifecycle to determine whether the importance of these psychosocial constructs evolve over time.

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9

Factors Affecting Investment Intentions: A Consumer Behaviour Perspective

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Introduction

The expansion of financial markets has provided opportunities for people to invest in a variety of securities and financial instruments. Products transacted on stock markets have long been a favourite asset class, as they provide liquidity, low transaction costs and flexibility

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that many other classes of assets do not have. Indeed, the volume and percentage of people who invest in stock market securities have risen sharply in recent years (Dreman *et al*, 2001; Singapore Exchange Limited, 2010), suggesting that there are a growing number of retail stock market investors, who have long been of interest to researchers.

Early studies into people's investment intentions made use of Modern Finance Theory (for example, Dean, 1951; Markowitz, 1952; Modigliani and Miller, 1958; Black and Scholes, 1973), which assumes that investors are rational and look to maximise their return for a given level of risk. Many of these traditional finance theories are used by portfolio managers in structuring people's investment portfolios together in an attempt to take into account macro and microeconomic factors. This approach led to many studies that have examined the financial (for example, Nagy and Obenberger, 1994; Clark-Murphy and Soutar, 2004), economic (for example, Baker and Haslem, 1973; Clark-Murphy and Soutar, 2004) and demographic (for example, Lewellen *et al,* 1977; Warren *et al*, 1990) factors that influence people's stock market investment decision processes.

In contrast, the growing field of behavioural finance has focused on explaining individual-level behaviour, with such research examining the influence of micro-behavioural aspects on decision-making processes, including heuristics (Kahneman and Tversky, 1972), representativeness (Kahneman and Tversky, 1973; Grether, 1980), overconfidence (Benos, 1998; Odean, 1998; Wang, 1998) and mental accounting (Thaler, 1999; Shefrin, 2007). The behavioural finance discipline has expanded our understanding of individual investors' behaviour, providing additional insights into the individual characteristics and psychological processes that influence people's investment intentions and subsequent choices (Ritter, 2003).

Despite recent developments in traditional and behavioural finance, few studies have examined the factors that consumer behaviour researchers have developed. This is surprising, as there is a close relationship between behavioural finance and consumer behaviour, as both include elements of psychology and sociology in their examination of individual decision-making. The objective of the present study was to bridge this gap by examining the effects of a number of relevant consumer behaviour constructs on investors' intentions to invest in the stock market.

Theoretical background and hypotheses

Marketing has examined the ways in which people's background characteristics and psychological processes influence a range of behaviours, of which investment behaviour may be considered a subset.

Behavioural finance and consumer behaviour draw on psychology to explain individual-level behaviour, often joining these factors with elements from sociology and economics. The broader consumer behaviour literature has identified many factors that have not or have rarely been considered in finance, such as product knowledge and product involvement. These factors may be especially important and relevant for retail investors, as they have greater need for information and may lack the skills needed to make successful stock market investment decisions.

A very large and rich consumer behaviour literature has developed. However, few investor studies have examined the applicability of consumer behaviour constructs, although the link between financial investment choices and consumer behaviour has been recognised for a number of years (Thaler, 1980), and 'financial markets provide a rich environment in which to study consumer behaviour' (Wilcox, 1999, p. 90).

Consumer behaviour began its growth stage in the 1960s with the integration of various concepts into comprehensive models of buyer behaviour, such as Nicosia's (1966) Consumer Decision Process Model, Engel *et al*'s (1968) Consumer Behaviour Model and Howard and Sheth's (1969) Theory of Buyer Behaviour. These general models were designed to provide a comprehensive explanation of the ways in which consumers behaved and the factors that influenced them when they were making a particular decision. However, they proved difficult to operationalise and many of their relationships could not be tested (Foxall, 1980).

Consequently, rather than attempting to operationalise a general behavioural decision-making framework, the present study focused on a selected set of consumer behaviour constructs that were felt to be directly relevant to the study of people's stock market investment intentions. In particular, based on traditional finance, attitudes towards and perceptions of risk and uncertainty were felt likely to play important roles. Specifically, the impact of two predispositional constructs (risk avoidance and uncertainty avoidance), two category-specific ability constructs (product knowledge and product involvement) and perceptions of risk and uncertainty on intentions to invest in the stock market was examined.

While many predispositional constructs have been examined in consumer behaviour, risk and uncertainty avoidance attitudes are particularly relevant to people's investment decisions. Risk is often examined as an objective factor (for example, risk relative to return on investment), rather than focusing on people's predispositions towards risk or uncertainty. These predispositional factors may be especially important

for retail investors, who vary more on these attributes than do professional institutional investors (Grinblatt and Keloharju, 2000, 2001).

As there is a distinction between risk and uncertainty, it would be expected that they might have different impacts on attitudes and behaviour. Indeed, some researchers have argued that uncertainty has a greater influence on behaviour than does risk (Stone and Gronhaug, 1993). This distinction may be particularly important in investment decision-making. In consumer behaviour, generalised attitudes towards risk have been studied extensively, although few studies have examined risk and uncertainty as distinct constructs within a decision-making framework (Ghosh and Ray, 1992, 1997). Recent evidence suggests that predispositions towards risk and uncertainty avoidance have different impacts on consumers' purchase intentions, at least in a tourism context (Quintal *et al,* 2010a). Therefore, it was seen as important to examine whether this result held true in an investment intentions context. The constructs and their suggested relationships are discussed in more detail in subsequent sections.

Risk avoidance

Risk avoidance is an attitude, or a stable tendency, to avoid risk (Douglas and Wildavsky, 1982), whereas risk perception is a transitory response to a situation-specific stimulus (Weber *et al,* 2002).

Whereas individual risk attitudes are stable over time, risk perceptions are dynamic and change according to context. Weber and Hsee (1998) and Weber and Milliman (1997) found support for a relationship between risk attitude and perceived risk, with risk-averse people being more likely to find ways to reduce their risk. It was expected that predispositional risk avoidance would positively influence people's perceptions of the risk of investing in the stock market, suggesting:

Hypothesis 1: The greater a person's risk avoidance attitude, the greater will be that person's perceptions of the riskiness of investing in the stock market.

Uncertainty avoidance

Researchers have examined the difference between high uncertainty-avoidant people and low uncertainty-avoidant people and the behaviours they exhibit. Hofstede (1994) found that low uncertainty-avoidant individuals were flexible, accepted uncertainty without a great deal of discomfort, took risks easily, showed greater tolerance for other people's opinions and behaviours, and did not welcome explicit norms (Yoo and

Donthu, 2002). On the other hand, Hofstede (1980, 1991, 2001) and other researchers (for example, Yoo and Donthu, 2002; Reisinger and Turner, 2003) found high uncertainty-avoidant people were more rigid and had a need to control their environment and situations in which they found themselves. Therefore, uncertainty-avoidant people were more likely to search for solutions to reduce their uncertainty. It was expected that uncertainty avoidance would positively influence people's perceptions of the uncertainty involved in investing in the stock market, suggesting:

Hypothesis 2: The greater a person's uncertainty avoidance attitude, the greater will be that person's perceptions of the uncertainty involved in investing in the stock market.

Perceived risk and perceived uncertainty

Consumer researchers have examined people's perceptions of risk and uncertainty. However, as was the case with risk and uncertainty avoidance, few researchers have examined perceptions of risk and uncertainty as distinct constructs, although Quintal *et al* (2008, 2010b) found that they had differential impacts on consumers' purchase intentions in a tourism context. Again, it was seen as important to determine whether this result held true in a stock market investment context.

Studies have shown that risk perceptions (that is, a belief or assessment of the risk associated with a particular behaviour) impact behaviour. Weber and Milliman (1997) found that people who perceived a behaviour as less risky were likely to have a more positive attitude towards that behaviour. Similarly, Cho and Lee (2006) found that perceived risk increased the amount of information search and transaction frequency, while lowering the proportion of assets invested in the stock market. It was expected that risk perceptions about investing in the stock market would have direct negative effects on people's intentions to invest in the stock market, suggesting:

Hypothesis 3: The riskier a person considers the stock market to be, the less willing that person will be to invest in the stock market.

Some studies have examined the distinction between perceived risk and perceived uncertainty. For example, Quintal *et al*'s (2008) six-country study found that perceived risk had a greater impact on attitude than did perceived uncertainty. They found that perceived uncertainty had a significant negative impact on attitudes in three of the countries, whereas directional support was found in the remaining three countries.

The impact of perceived uncertainty has not been as widely examined compared with that of perceived risk. Perceived uncertainty is a subjective expectation of uncertainty about a potential loss, whereby probabilities cannot be attached to outcomes (Knight, 1948). As probabilities cannot be attached to uncertain outcomes, whereas they can be attached to an outcome of a risky outcome, it is likely that the greater a person's perceived uncertainty, the greater will be their perception of risk. It has also been shown that, as uncertainty and the chance of a negative consequence increase, perceived risk increases (Oglethorpe and Monroe, 1987), suggesting:

Hypothesis 4: The more uncertain a person considers the stock market to be, the riskier that person will consider the stock market to be.

As was the case with perceived risk, people with less perceived uncertainty are likely to have a more positive attitude towards a particular behaviour. It was expected that uncertainty perceptions about investing in the stock market would have direct negative effects on people's intentions to invest in the stock market, suggesting:

Hypothesis 5: The more uncertain a person considers the stock market to be, the less willing that person will be to invest in the stock market.

Category-specific ability constructs

A wide range of category-specific and general abilities constructs have been examined in consumer behaviour studies across a variety of product and service contexts. Among these, it is likely that product knowledge and product involvement will impact on people's intentions to invest in the stock market, especially as retail investors are likely to have a wider variation in their product knowledge and involvement than institutional investors.

Product knowledge

Several studies have found support for a negative relationship between product knowledge and perceived risk and uncertainty (Cox and Rich, 1964; Srinivasan and Ratchford, 1991; Bansal and Voyer, 2000), which suggests:

Hypothesis 6: The better a person's knowledge of financial matters, the lower will be that person's perceptions of the riskiness of investing in the stock market.

Hypothesis 7: The better a person's knowledge of financial matters, the lower will be that person's perceptions of the uncertainty of investing in the stock market.

Specific knowledge about a product is likely to influence people's decision-making processes. Product knowledge decreases people's dependence on information (Johnson and Russo, 1984) and increases their confidence in their ability to make good decisions (Bearden *et al*, 1990). Consumer researchers have found that knowledge influences different phases of the decision-making process (Bettman and Park, 1980), and may determine the final choice. Indeed, knowledgeable consumers are likely to make better choices than are their less knowledgeable counterparts (Blackwell *et al*, 2006), leading to more positive intentions, suggesting:

Hypothesis 8: The better a person's knowledge of financial matters, the more willing that person will be to invest in the stock market.

Product involvement

Product involvement has been related to perceptions of risk (Dowling, 1986; Mitchell, 1999; Chaudhuri, 2000; Dholakia, 2001). Indeed, perceived risk has been seen as a consequence of product involvement. Venkatraman (1989) suggested that, as enduring involvement is a long-term product concern, whereas perceived risk is contextual, enduring involvement precedes risk. She found that consumers with high enduring involvement perceived less risk and that enduring involvement increased people's risk-handling capabilities. Risk reduction is also linked to involvement, as high involvement with a brand is commonly known as brand loyalty, which has been shown to be a major risk reducer (Roselius, 1971), suggesting:

Hypothesis 9: The greater a person's involvement in financial matters, the lower will be that person's perceptions of the riskiness of investing in the stock market.

Hypothesis 10: The greater a person's involvement in financial matters, the lower will be that person's perceptions of the uncertainty of investing in the stock market.

Product involvement has also been studied in relation to product choice (Laurent and Kapferer, 1985; Flynn and Goldsmith, 1993; Kapferer and Laurent, 1993). Product involvement increases the frequency of

product purchase and product use (Laurent and Kapferer, 1985; Mittal, 1989). Youngdahl *et al* (2003) found that people's confidence in making product choices was influenced by their involvement with the product. Involvement also leads to different behaviours, such as the extent of decision-making and information processing (Robertson, 1976; Zaichkowsky, 1985). Consumers who have high involvement with a particular product have the essential information in greater detail than consumers who have lower involvement with that product (Chaiken, 1980), resulting in such consumers accepting fewer alternatives (Petty and Cacioppo, 1981). Consumers with high product involvement also have better knowledge of products and attributes than less involved consumers, and thus they have a greater ability to evaluate quality and price (Richins and Bloch, 1986; Chandrashekaran and Grewal, 2003), leading to more purchases, suggesting:

Hypothesis 11: The greater a person's involvement in financial matters, the more willing that person will be to invest in the stock market.

The 11 hypotheses led to a stock market investment intentions model, which is shown in Figure 9.1. The estimation of the model was most

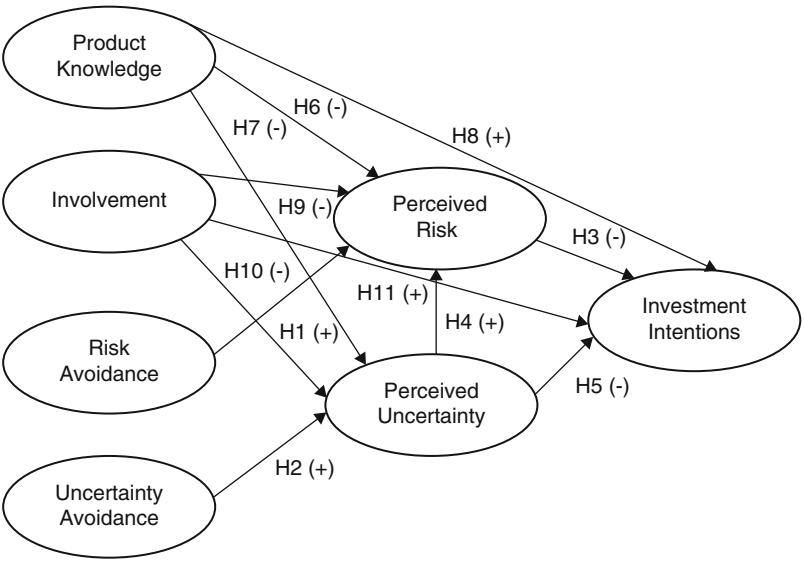

Figure 9.1 An investment intentions model

easily done by using a structural equation modelling (SEM) approach. Consequently, it was decided to use multiple-item latent variables to measure the constructs, as outlined in the next section, which describes the study undertaken to examine the suggested model.

The study

The population and the sample

The population of interest was public retail investors in Singapore who had investments outside their pension schemes in the stock market and who had held such investments in the stock market during the 6 months before the data was collected. Singapore was chosen to undertake such a study as it is one of the more established markets in the Asia-Pacific region, the third most competitive financial centre in the world (Yeandle *et al,* 2009) and has many retail investors (Singapore Exchange Limited, 2010). Background information about the respondents, including age, gender and education, was obtained, as was additional investment information, including years of investment experience, the types of assets owned and the dollar value of the respondent's portfolio.

The data used was obtained from members of an online panel, who were recruited by email and paid by the panel provider in 'points' that can be used for online purchases. A sample of about 250 respondents was obtained to ensure that there was sufficient data to estimate the suggested model (Bentler and Chou, 1987).

The measures

A questionnaire, which included the items used to measure the constructs of interest, was developed. Scales were adapted from past research and, where possible, multiple-item scales that had good measurement properties were chosen. When necessary, questions were modified to fit the current stock market investment intentions context and, where possible, a common scaling option (a 7-point Likert-type scale) was used to ensure consistency. A summary of the study's constructs can be found in Table 9.A1 of the appendix.

Data analysis

An initial examination of the data was undertaken, with descriptive statistics being computed for the constructs' individual items and the background variables, using the SPSS programme. A Confirmatory Factor Analysis was then estimated for each of the seven latent variables using the AMOS SEM programme. Items with low loadings

were removed to improve the constructs' goodness of fit before their measurement properties were assessed, by examining their unidimensionality, reliability and convergent and discriminant validity. On the basis of commonly used criteria, construct reliability was assumed if the composite reliability score was 0.70 or higher, whereas an AVE score of 0.50 or greater suggested that convergent validity could be assumed (Fornell and Larcker, 1981). Discriminant validity was assessed by comparing the shared variances (squared correlations) of the various construct pairs with their respective AVE scores (Fornell and Larcker, 1981).

A partial disaggregation approach (Bagozzi and Edwards, 1998), which is a compromise between a totally aggregated approach and a totally disaggregated approach, was then used to estimate the SEM models, as it required fewer parameters to be estimated, which was seen as desirable as the sample size was not large. Partial disaggregation is undertaken by creating two or more composite variables for each construct. These composites can be created from empirically identified sub-dimensions of an overall latent construct or, more commonly, by allocating indicator items randomly to the various composite variables (Bagozzi and Heatherton, 1994), which was done here.

The partial disaggregation approach enables complex models to be assessed with reasonable sample sizes and with less random error than would be the case if a totally disaggregated approach were used. Consequently, more stable estimates can often be obtained. This process led to a sample size to estimated parameter ratio of approximately 4 to 1, which is acceptable (Tanaka, 1987). The structural model was estimated using the AMOS SEM programme.

The results

The sample

A total of 257 responses were obtained from Singaporean panel members who answered the online questionnaire over a period of 2 weeks. About half of the respondents were male (51 per cent). Close to half of the respondents were aged 35 and 44 years (44 per cent) and almost one-third had more than 15 years of investment experience. The most common educational achievement was a college degree (41 per cent). There was also an even distribution of the value of the portfolios, with the largest group having a portfolio value of between S$10 000 and S$25 000 (28 per cent).

The constructs' measurement properties

The constructs' measurement properties were examined in a variety of ways after a revision process in which items with low loadings were removed. The removal of items can be a concern, as it may change the nature of the construct being measured. One way to test this concern is to correlate a composite variable that includes the original set of items from the survey with a composite variable that includes the reduced set of items (Thomas *et al*, 2001). A high correlation between the original and refined composite variables suggests that the refinement process has not resulted in a substantial loss of information or a change in the nature of the measured construct. As can be seen in Table 9.1, the correlations ranged from 0.85 to 0.99, making it clear that the revised constructs contained almost all of the information in the originally suggested construct and that their meanings had not been altered.

All of the revised constructs fitted the data and had acceptable reliability and convergent validity. Furthermore, the squared correlations between the various constructs ranged from 0.01 to 0.55. As the lowest AVE score was 0.54, the squared correlations for most of the pairs of constructs were lower than either of their AVE scores. As the squared correlations between the risk-avoidance construct, which had the lowest AVE score of 0.54, and the other constructs ranged from 0.02 to

Table 9.1 The constructs' measurement properties

Construct	Initial number of items	Final number of items	Correlation[a]	χ^2 (probability)	Construct reliability	AVE score
Product knowledge	7	6	0.99	12.43(0.19)	0.94	0.72
Product involvement	11	5	0.98	2.20(0.82)	0.95	0.78
Risk avoidance	7	4	0.91	0.97(0.62)	0.82	0.54
Uncertainty avoidance	5	5	NA	1.75(0.88)	0.88	0.59
Perceived risk	6	4	0.98	2.01(0.37)	0.88	0.65
Perceived uncertainty	4	2	0.85	NA	0.86	0.56
Investment intentions	6	4	0.99	3.02(0.22)	0.95	0.84

[a]This is the correlation between the summed scale based on the initial items and the summed scale based on the finally retained items.

0.12, all of the constructs had discriminant validity. As the constructs had good measurement properties, all were used in the subsequent analysis.

The measurement and structural models

Following Anderson and Gerbing (1988), the measurement model was estimated before estimating the structural model. While the χ^2 statistic was significant ($\chi^2 = 134.56$; $P < 0.01$), the other goodness of fit indexes suggested that the model was a good fit to the data ($\chi^2/df = 1.62$; GFI = 0.94; AGFI = 0.90; CFI = 0.98; SRMR = 0.03; RMSEA = 0.05). Consequently, the structural model was estimated.

Once again, the χ^2 statistic was significant ($\chi^2 = 162.83$; $P < 0.01$). However, all of the other goodness of fit indexes suggested that the model was a good fit to the data ($\chi^2/df = 1.83$; GFI = 0.93; AGFI = 0.90; CFI = 0.98; SRMR = 0.04; RMSEA = 0.06). All of the hypothesised paths were significant ($P < 0.05$). However, the relationship between knowledge and perceived risk and uncertainty was not in the expected direction. A possible explanation could be that the better a person's knowledge of the financial matters, the more they are aware of the risk involved in the investment, and hence they have a higher perception of the riskiness and uncertainty of investing in the stock market.

Furthermore, the relationship between perceived uncertainty and stock market investment intentions was not in the expected direction. In order to further examine this issue, the relationship between perceived uncertainty and intention was examined in isolation and it was found that the path was not significant ($\beta = -0.07$), suggesting that the obtained result was due to the mediated relationship between perceived uncertainty, perceived risk and intention. Consequently, the direct path was removed and the revised model re-estimated.

As was expected, the revised model's fit was very similar to the original model. While the χ^2 statistic was still significant ($\chi^2 = 188.84$, $P < 0.01$), the other goodness of fit indexes suggested that the revised model was a good fit to the data ($\chi^2/df = 2.15$; GFI = 0.92; AGFI = 0.88; CFI = 0.97; SRMR = 0.05; RMSEA = 0.06). All of the standardised regression coefficients were in the same direction as the original model, as can be seen in Table 9.2, although not all were significant. A total of 62 per cent of the variation in investment intentions was explained by the antecedents, suggesting that the model was a good predictor of people's willingness to invest in the stock market. Furthermore, 56 per cent of the variation in perceived risk was explained, whereas 18 per cent of the variation in perceived uncertainty was explained.

Table 9.2 The alternative structural model's standardised path coefficients

Hypothesis	Relationships	Standardised coefficient	P-value
Hypothesis 1	Risk avoidance→Perceived risk	0.29	<0.01
Hypothesis 2	Uncertainty avoidance→Perceived uncertainty	0.37	<0.01
Hypothesis 3	Perceived risk→Investment intentions	–0.24	<0.01
Hypothesis 4	Perceived uncertainty→Perceived risk	0.58	<0.01
Hypothesis 6	Product knowledge→Perceived risk	0.12	>0.05
Hypothesis 7	Product knowledge→Perceived uncertainty	0.18	<0.05
Hypothesis 8	Product knowledge→Investment intentions	0.63	<0.01
Hypothesis 9	Product involvement→Perceived risk	–0.25	<0.01
Hypothesis 10	Product involvement→Perceived uncertainty	–0.05	>0.05
Hypothesis 11	Product involvement→Investment intentions	0.31	<0.01

Product knowledge had a significant direct positive impact on investors' investment intentions (0.63), supporting Hypothesis 8. This suggests that as people become more knowledgeable about the stock market's products they are more likely to invest. Product involvement also had a significant direct positive impact on investors' investment intentions (0.31), supporting Hypothesis 11. Perceived risk had a significant direct negative effect on investors' investment intentions (–0.24), supporting Hypothesis 3. As expected, perceived uncertainty had a significant direct positive effect on perceived risk (0.58), supporting Hypothesis 4, as did risk avoidance (0.29), supporting Hypothesis 1. Product involvement had the expected significant negative impact on perceived risk (–0.25), supporting Hypothesis 9, whereas product knowledge was positively related to perceived risk (0.12) and perceived uncertainty (0.18), which was contrary to Hypotheses 6 and 7. Uncertainty avoidance had a significant impact on perceived uncertainty (0.37), supporting Hypothesis 2.

Hypothesis 5 was not examined in the revised model and Hypotheses 6 and 10 were not supported. Table 9.3 provides a summary of the total, direct and indirect effects of the constructs in the estimated model. Investment intentions were significantly impacted by all the antecedent constructs, suggesting that the estimated model provided good insights into people's stock market investment intentions.

Mediating effects

A bootstrapping approach was used to examine the mediating roles played by perceived risk and perceived uncertainty (Shrout and Bolger (2002). Perceived risk was expected to mediate the relationships between product knowledge and investment intentions, product involvement

Table 9.3 Direct, indirect and total effects of the alternative model

Construct	Uncertainty avoidance	Risk avoidance	Product involvement	Product knowledge	Perceived uncertainty	Perceived risk
Perceived uncertainty	0.37	0.00	–0.05	0.18	0.00	0.00
Perceived risk	0.21	0.29	–0.27	0.22	0.58	0.00
Stock market investment intentions	–0.05	–0.07	0.37	0.58	–0.14	–0.24

and investment intentions. Perceived uncertainty was expected to mediate the relationships between product knowledge and perceived risk, product involvement and perceived risk. The results obtained in this phase of the analysis can be seen in Table 9.4, which shows the standardised bias-corrected results for the indirect and direct effects among the various relationships in the alternative structural model, after 2000 bootstrapping iterations had been estimated to ensure stability. If a value is greater than 0.05, the relationship is not significant, as the effect cannot be assumed to be different to zero. Full mediation can be assumed if the standardised indirect effects are significant, but the standardised direct effects are not significant. All of the antecedent variables had significant indirect effects on stock market investment intentions. The direct effects were also significant. Consequently, full mediation cannot be assumed for any of the suggested mediating relationships, although partial mediation can be assumed for the knowledge – perceived risk – intentions and the involvement – perceived risk – intentions relationships.

On the other hand, the standardised indirect effect between product knowledge and perceived risk and the standardised indirect effect between product involvement and perceived risk were not significant, suggesting that perceived uncertainty was not a mediating variable in these relationships. Perceived risk was the only construct that had a mediating effect and this was a partially mediating effect.

Conclusions and implications

Product knowledge and product involvement both impacted on investment intentions. Furthermore, whereas perceived risk had a mediating effect, perceived uncertainty did not. This result is significant, as it emphasises the importance of including risk and uncertainty as separate constructs, as they had different impacts on people's stock market investment intentions. This result is important, as many researchers have used these constructs interchangeably (Gronhaug and Stone, 1995; Hofstede, 2001; Cho and Lee, 2006).

A major contribution of the present research came from the development of an investment intentions model to examine retail investors' investment decision-making processes from a different (consumer behaviour) perspective. Most previous studies that examined people's stock market investment intentions did so with little reference to the ways in which an investor would approach such an investment decision. This study is the first to include a set of consumer behaviour constructs in an investment intentions model. The model fitted the data and yielded

Table 9.4 Standardised indirect and direct effects (probabilities)

	Uncertainty avoidance	Risk avoidance	Product involvement	Product knowledge	Perceived uncertainty	Perceived risk
Standardised indirect effects (bias-corrected)						
Perceived uncertainty	—	—	—	—	—	—
Perceived risk	0.001	—	0.599	0.078	—	—
Investment intentions	0.001	0.001	0.001	0.002	0.001	—
Standardised direct effects (bias-corrected)						
Perceived uncertainty	0.001	—	0.620	0.083	—	—
Perceived risk	—	0.001	0.002	0.097	0.002	—
Investment intentions	—	—	0.001	0.001	—	0.001

results that increased our understanding of the impact of these predispositional constructs on people's stock market investment intentions.

The current study supported earlier studies (for example, March, 1996; Howcroft *et al*, 2007) that suggested that product knowledge and product involvement were important influences on people's investment intentions. This was not surprising as these constructs have been found to influence purchase intentions in many contexts (for example, Bettman and Park, 1980; Kapferer and Laurent, 1993; Youngdahl *et al*, 2003). However, the present study highlighted the applicability of these constructs in financial contexts.

An interesting relationship was found between product knowledge and perceived risk and uncertainty. Previous studies have suggested that greater knowledge reduces people's perceived risk and perceived uncertainty (Srinivasan and Ratchford, 1991; Bansal and Voyer, 2000). However, this was not the case here. This suggests that the relationship between product knowledge and perceived risk and uncertainty may be dependent on other factors in financial contexts, such as a person's risk tolerance, and this issue needs further research.

From a practical point of view, practitioners need to develop a better understanding of the factors that impact on their clients' intentions to invest in the stock market. This is especially important as financial service practitioners deal with people from a variety of investment backgrounds. For example, people who are new to stock market investments are likely to have less familiarity or knowledge about financial products including their risk exposure.

The present study found that the category-specific ability constructs (that is, product knowledge and product involvement) had the greatest impact on people's investment intentions, suggesting that increasing such abilities will increase the likelihood that people will invest in the stock market. A financial advisor could suggest that clients undergo financial training to equip them with more knowledge before they invest, and this would also likely make them more involved in their investment decisions. The nature of this training is important as it needs to provide information and a sense of connection to build involvement.

Limitations and future research

The decision to use an online panel might have introduced bias, as all respondents were panel members. Consequently, respondents might not be representative of the population of stock market investors, although quotas were used to minimise this potential problem. The use

of an online panel also restricted the researchers' ability to probe for further information (Truell, 2003).

Despite this limitation, the present study provides a useful starting point for our understanding of the consumer behaviour constructs that affect people's stock market investment intentions. Although the present study included only six predictor constructs, it explained more than 60 per cent of the variation in people's stock market investment intentions, suggesting that it is a useful basis for considering appropriate strategies and policies. Future research could consider additional consumer behaviour constructs.

Further studies should also be undertaken in other countries with different cultures to see whether the present study's results can be generalised. Australia has a well-developed stock market but an individualistic culture, and this could provide an interesting comparison.

As the present data was collected soon after the Global Financial Crisis, it would be interesting to collect similar data when the economy stabilises to see whether the same constructs impact people's stock market investment intentions as their memories of the crisis recede. It is possible that investors might develop different risk perceptions having experienced challenging times during the crisis. This would provide additional insights into whether the economic crisis was an important factor that influenced people's stock market investment intentions or was merely a transitory phenomenon.

Finally, because of the inherent issue of using cross-sectional data, future research could explore the use of longitudinal data to examine structural relationships between the constructs over time (Dillon and Goldstein, 1984). Moreover, a longitudinal study could track investors' attitudes (risk avoidance and uncertainty avoidance) and perceptions of risk and uncertainty over time as situational factors change (Cho and Lee, 2006), improving our understanding of the impacts these constructs have on people's stock market investment intentions.

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Appendix

Table 9.A1 The constructs used in the study

Construct	Items	Scale	Source of the items
Product knowledge	7	Likert-type scale	Laroche *et al* (2003)
Product involvement	11	Semantic differential	Laroche *et al* (2003)
Risk avoidance	7	Likert-type scale	Quintal *et al* (2006) Quintal *et al* (2010a) Zhou *et al* (2002)
Uncertainty avoidance	5	Likert-type scale	Quintal *et al* (2010a)
Perceived risk	6	Likert-type scale	Laroche *et al* (2003) Stone and Gronhaug (1993)
Perceived uncertainty	4	Likert-type scale	Bstieler (2005) Ellis and Shpielberg (2003)
Investment intentions	6	Likert-type scale	Dodds *et al* (1991) Soderlund and Ohman (2003)

10

Factors Influencing Investor Choice of Retirement Funds

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Introduction

When New Zealand launched KiwiSaver in 2007, it joined a growing international trend towards second-tier personal pension schemes. KiwiSaver is a work-based retirement savings scheme, also referred to as a defined contribution scheme. It supplements New Zealand Superannuation, a first-tier universal benefit that all citizens are entitled to when they reach retirement age, currently 65 years. KiwiSaver's introduction was a response to concerns that New Zealand Superannuation may not be sustainable given the country's expanding population of pensioners. The early uptake of KiwiSaver exceeded expectations, with 1.97 million people joining by June 2012 (Inland Revenue Department, 2012), thanks mainly to an auto-enrolment provision and financial incentives from the government and employers.

When they join KiwiSaver and sign up with a provider (there are about 30 providers including banks, insurance companies, trusts and fund managers), new recruits receive an initial $US850 'kick-start' contribution from the government. Members then contribute to their personal accounts a regular percentage of their gross pay that is matched by contributions from their employer up to a maximum of 3 per cent. As well as choosing their provider, scheme members can also choose the

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investment fund or asset class into which their savings will be invested (ranging from low-risk conservative, to balanced, to higher-risk growth funds). KiwiSaver members get access to their accumulated contributions and investment returns when they reach retirement age.

New members declining to choose a provider or a fund are automatically allocated to conservative funds run by government-appointed default providers. The architects of KiwiSaver decided that default funds would be conservative, 75–85 per cent invested in cash and fixed income assets, minimizing costs for both pension providers and investors and reducing the risk of loss for members declining to actively choose a fund. Concerns have been raised, however, that too many KiwiSavers are investing in conservative funds that do not match their age and risk profile (Ministry of Economic Development, 2008; Gaynor, 2010). By June 2011, 57 per cent of total funds under management in KiwiSaver were invested in broadly conservative, including default, funds (Morningstar, 2011). Conservative funds may be ideal for older members of the scheme, but asset class performance data (Goetzmann and Ibbotson, 2006; Siegel, 2007) suggests a conservative investment strategy may be inappropriate for younger members of the scheme. By June 2011, 32 per cent of KiwiSaver members were aged between 18 and 34.

Implicit in giving KiwiSaver members the responsibility of choosing an appropriate investment fund is an assumption that their financial acumen is up to the task. Several studies suggest it is not (Colmar Brunton, 2009; O'Connell, 2009). One study found 40 per cent of members did not even know what kind of fund they have invested in (Inland Revenue Department, 2010).

This study aims to identify the key factors influencing KiwiSaver members when they make – or opt out of making – the fund choice decision when they join the scheme. Previous studies have shown people investing for their retirement are influenced by their age, education and wealth (Baker and Haslem, 1974; Foster, 1996; Devaney and Su, 1997; Prenda and Lachman, 2001; Goetzmann and Kumar, 2008; Petkoska and Earl, 2009); by their peers, pension providers and the design of the pension scheme, including the default rules (Madrian and Shea, 2001; Choi *et al*, 2002; Sunstein and Thaler, 2003; Beshears *et al*, 2008; Iyengar and Kamenica, 2010); and by their attitude to risk (Joo and Grable, 2000; Rickwood and White, 2009). A qualitative approach was adopted in the belief that in-depth discussion provided by focus group interviews would tease out the factors influencing fund choice. Focus groups were supplemented by a fund selection exercise and a brief questionnaire.

Pension providers and policy-makers will benefit from better understanding the factors motivating clients making decisions on which asset classes suit their circumstances. KiwiSaver members could be acting as neoclassical economists and marketing theorists might predict – as rational, well-informed decision-makers who choose funds that maximize their long-term wealth (Morgenstern and Von Neumann, 1947; Markowitz, 1952; Savage, 1954; Nicosia, 1966; Engel *et al*, 1968; Howard and Sheth, 1969). Or they could be responding in ways that behavioural economics and finance theorists would anticipate – naive, short on intellect and willpower, terrified of risk, and prone to following their friends, the defaults or the path of least resistance (Simon, 1955; Kahneman and Tversky, 1979; Mowen, 1988; Foxall, 1993; Mullainathan and Thaler, 2000; Mitchell and Utkus, 2004; Benartzi and Thaler, 2007).

This article commences with a review of the literature on factors affecting consumer choice of a retirement investment fund. Three age-specific focus groups were conducted to explore qualitatively the factors influencing New Zealand consumer choices of KiwiSaver investment fund scheme. A model of factors influencing consumer choices is presented that identifies five key factors in financial decision-making, plus the overriding importance of the default scheme in the auto-enrolment regime. Implications of these findings for fund providers and government regulators are discussed.

Literature review

A number of researchers have modelled the retirement investment decision-making process. These models consider individual differences among consumers including demographic factors such as age, as well as issues of financial expertise, knowledge and involvement in financial decision-making. Environmental influences have also been modelled, including risk factors, media recommendations and the opinions of family and friends. These models helped to inform the broad design and data gathering for the present study.

Retirement investment decision-making

Harrison *et al*'s (2006) three-stage model of investment decision-making suggests that people are influenced by their attitudes towards retirement during the pre-purchase stage; they prefer advice from friends and family over advice from experts at the choice/selection stage; and at the post-purchase stage, they typically feel ill-equipped to evaluate their choice of pension scheme. Joo and Grable (2000) modelled retirement

investing as a function of three factors: *environmental influences* that include employment, household size and the number of financial dependents; *individual differences* in characteristics such as age, gender, marital status, income and education level; and *psychological processes* including financial attitudes, retirement attitudes and risk tolerance.

A pre-purchase decision model developed by Rickwood and White (2009) identified *internal factors*, *external factors* and *risk factors*. Among the internal factors, they found people had limited involvement in preparing financially for their retirement, excepting married males aged 40–55. They found that for most, retirement was not a conversation topic among friends and people rarely actively sought information. The strongest internal influence on savings was age, with most saying they wanted more information and more financial education provided in an easily understood manner. Rickwood and White found the major external factors influencing retirement planning were family influence, marketer influence and competitive options, with family having the biggest impact on participants preparing for retirement. Advice from media commentators could also be influential. Four *risk factors* were found to be linked with retirement decision-making – functional, financial, psychological and temporal. Rickwood and White found these risk factors had a negative impact on decision-making as people often doubted the security of investing for their retirement and worried about the likelihood of changing rules and a lack of unbiased advice. This negative perception of risk might encourage such consumers to invest in conservative funds, while other consumers see the positive association between risk and growth in investment funds.

Demographics

Studies into demographic and socioeconomic influences have identified age as an important determinant of retirement financial planning (Devaney and Su, 1997; Prenda and Lachman, 2001; Petkoska and Earl, 2009). Older investors, particularly those with higher incomes and a tertiary education, tend to hold the most diversified investment portfolios (Baker and Haslem, 1974; Goetzmann and Kumar, 2008). Foster (1996) found that participation in 401(k) pension plans in the United States increased with employees' income levels and was higher for those working in professional roles. The level of savings in 401(k) pension funds was found by Yuh and DeVaney (1996) to be influenced by educational attainment, income level, home ownership and years in employment. On gender differences, Glass and Kilpatrick (1998) found that women prepare less for retirement and have less confidence with financial

matters. Women are more likely to invest in conservative assets when allocating their pension portfolios (Sunden and Surette, 1998; Bajtelsmit *et al*, 1999; Bernasek and Shwiff, 2001; Watson and McNaughton, 2007).

Knowledge and expertise

Studies have also found that consumers' expertise and knowledge influence their decision-making on financial services (Perry and Morris, 2005). Hilgert *et al* (2003) established a link between financial knowledge and 'financially responsible behaviour' in saving and investing. Agnew and Szykman (2005) found that high-knowledge individuals were less likely to choose a default asset allocation in a long-term investment. When Grable and Joo (1998) tested for determinants of financial satisfaction, they found it was positively correlated to income, financial knowledge, risk tolerance and education. A later study found that investing for retirement was linked to individuals' knowledge, financial risk tolerance and 'future time perspective' (Jacobs-Lawson and Hershey, 2005).

Involvement

Clients' involvement and their 'level of uncertainty' over decision-making have been identified by other researchers as factors influencing attitudes and behaviour towards buying financial services (McKechnie, 1992; Harrison, 1994). Beckett *et al* (2000) combined involvement and uncertainty into a 'consumer behaviour matrix' which they say explains financial services buying behaviour. They identify four ideal types of characters who range from low to high levels of involvement with the service and from low to high levels of confidence. Theoretical work on involvement suggests that people seek and process information where they perceive a high relevance to their needs (Brucks, 1985; Bruner and Pomazal, 1993). While customer involvement varies across different financial services, Aldlaigan and Buttle (2001) suggest that bank clients look for high levels of personal contact over investment services.

Satisficing in decision-making

Benartzi and Thaler (2007) found most people lack the cognitive ability and willpower to optimize their lifetime finances and instead opt for simple heuristics or rules of thumb. Mullainathan and Thaler (2000) identified heuristics like simple diversification, avoiding extreme options and settling for defaults as decision-making strategies for long-term investing. Customers trade off time against effort required when comparing their options, and often resort to short cuts (Benartzi and Thaler, 2002).

While traditional economic and marketing theories hold that wide choice is good for clients, there is evidence that people can get overloaded with too many options (Iyengar and Lepper, 2000). Studies into pension investment show that scheme participants are overwhelmed by multiple choices and will simplify decision-making, where possible by choosing default options (Iyengar and Kamenica, 2010). A study of participation rates in US pension schemes (Sethi-Iyengar *et al*, 2004) found that as the number of fund options increased, membership of the scheme fell. A Swedish personal pension scheme offering 456 fund options was found to be overly complex for scheme members (Sunstein and Thaler, 2003).

Passive decision-making is common in retirement savings planning, with employees doing whatever requires the least effort and choosing the 'path of least resistance' (Choi *et al*, 2002), or alternatively just doing nothing, which Samuelson and Zeckhauser (1988) label the *status quo bias*. In unfamiliar territory, such as choosing between complex investment options, people are attracted to the default settings, often because they see others choosing them (Sunstein and Thaler, 2003). Even though employees can ignore or opt out of pension scheme defaults, studies show that few actually do so (Beshears *et al*, 2008). For pension schemes, default settings have been shown to increase participation rates significantly (Madrian and Shea, 2001; Choi *et al*, 2002; Beshears *et al*, 2008).

In summary, common factors believed to influence financial decision-making for retirement are: demographic factors such as age, gender, income and education; environmental factors such as risk, the influence of family and friends, and the media; and psychological factors such as financial knowledge, involvement, attitudes to retirement, future time perspective and risk tolerance. Research suggests when faced with complex information on retirement investment options, many consumers make simple investment decisions such as choosing the default investment option. Each of these issues was explored in the research.

Methodology

A qualitative approach was adopted for this study because the researchers wanted to explore the KiwiSaver fund choice issue through the lived experiences of the decision-makers themselves (Schwandt, 2001). How do KiwiSaver members experience the fund choice decision and what are their perceptions about the main factors influencing that decision? Potential influencing factors drawn from the literature helped to guide the fieldwork. Focus group interviews were used as they are considered

appropriate for probing motivating factors (Bryman and Bell, 2007), and they allow issues to be raised that are important to participants. These issues could be discussed and challenged by other KiwiSaver members as they strived to 'collectively make sense of a phenomenon and construct meanings around it' (Bryman and Bell, 2007, p. 512). Because KiwiSaver members were likely to find it challenging to articulate their fund choice, it was decided that the more indirect approach of the focus group would be more productive. Participants who lacked confidence in their financial knowledge would feel more comfortable in a collective setting that encourages disclosure. Focus groups have been used in other studies into pension fund choice decision-making (Harrison *et al*, 2006; Rickwood and White, 2009).

Recruitment of groups

Participants were recruited through purposive sampling (Patton, 2002) among KiwiSaver scheme members. Email invitations were sent to the researchers' networks and recipients were asked to on-send the invites to their networks. Diversity was sought in terms of both gender and age as there is evidence that these factors influence retirement financial planning decisions (Joo and Grable, 2000; Prenda and Lachman, 2001; Holm, 2009; Petkoska and Earl, 2009; Rickwood and White, 2009). The 17 participants recruited were divided into three focus groups: 20–35-year olds, 36–54-year olds, and those aged 55+. There is evidence that participants are more likely to open up and discuss their experiences with people in their own age bracket (Morgan, 1997).

Focus group meetings

The focus group meetings were audio-recorded and each lasted approximately 60 min. The meetings started with participants answering three written questions provided on cards. The first asked: If you were choosing a KiwiSaver investment fund tonight, which of these five options would you opt for – Conservative, Conservative/Moderate, Balanced, Growth and Aggressive (each option showed asset allocations to shares, property and cash). Participants were then asked to make selections from a list of potential factors that could be influencing their choice of fund (for example, risk attitude, expert opinions, and advice from partners or family). They could add other factors beyond the list provided. The third question asked them to rank their top three influencing factors. This exercise triggered widespread discussion within the groups as participants in turn shared and explained their selections. At the end of the meetings participants completed a questionnaire that gathered data

on their actual KiwiSaver provider and fund choice, their education, income and whether they had children living at home.

Coding procedure

The audio recordings were fully transcribed. An iterative thematic analysis procedure was used to identify and tease out common codes and themes in the transcript (Gomm, 2004; Bryman and Bell, 2007). The data coding procedure was based on Ritchie and Spencer's (1994) five-step 'framework analysis' approach: familiarization; identifying a thematic framework; indexing; charting; mapping and interpretation. Focus group transcripts were read multiple times to raise familiarity with the text and to identify the broad tone of ideas discussed by the participants (Creswell, 2003). An open coding process was followed involving 'breaking down, examining, comparing, conceptualizing and categorizing data' (Strauss and Corbin, 1990).

Coding began by adding descriptive notes to the margins of the focus group transcripts, summarizing concepts, opinions and feelings being expressed. The descriptive notes were developed into code descriptors. Each code descriptor was refined until it captured all instances of transcript comments identified by the code. A second researcher checked the reliability of the coding process. A total of 21 descriptive codes emerged from the data analysis and these were grouped into eight themes (see Figure 10.1). The following provides one example of a code, and an excerpt of transcript that illustrates the code:

Advice from family, friends, colleagues who are highly trusted (code <C-A>)

Descriptor: Participants say they can 'trust' or 'rely on' the word-of-mouth advice they get from those who are close to them – their family, friends and work colleagues.

Participant comment:

> You got to get advice from the people you trust. What they recommend for you is not necessarily what you may decide may be the best scheme for you. But you trust that they will be able to explain things for you, and interpret things in a way that you can understand. M (20–35)

Measuring frequency and strength of opinion

Qualitative sampling rarely generates statistically representative data; therefore, expressing results in terms of frequencies can be misleading

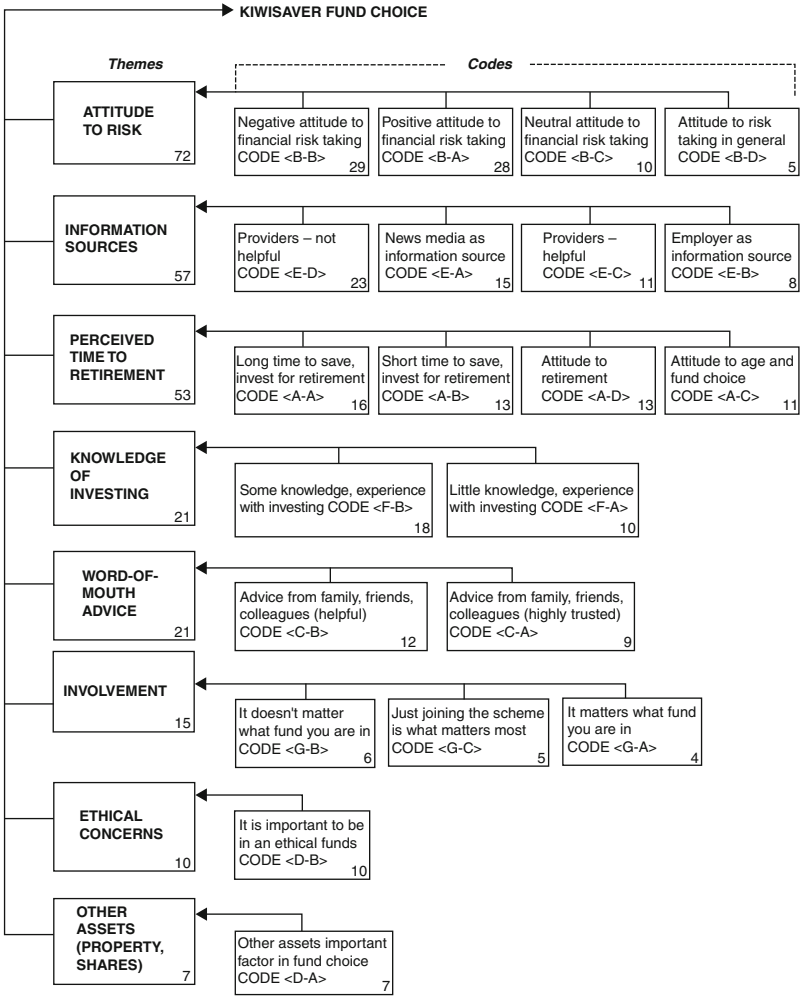

Figure 10.1 Codes and themes emerging from focus group meetings
Note. The prevalence of codes and themes is ordered top to bottom for themes, left to right for codes. Numbers in the corner of each box reflect the prevalence of each code.

(Pope *et al*, 2000). Nevertheless, qualitative researchers sometimes do quantify aspects of their data to help express the phenomenon under study (Miles and Huberman, 1984; Bryman and Bell, 2007). As Bryman and Bell (2007) point out, qualitative researchers at times engage in 'quasi-quantification' through the use of terms like 'many' or 'some'; therefore by quantifying the number of responses under a category

a researcher is 'injecting greater precision into such estimates of frequency' (2007, p. 635). The number of comments appearing under each code was logged, based on counting the number of individual instances of the comment being made by participants (Rabiee, 2004; Braun and Clarke, 2006). The approach was taken a step further by applying weightings to participants' comments, reflecting the reality that some comments are more evidence-based or profound than others (Rabiee, 2004; Breen, 2006).

Two criteria were used to assess the strength of opinion in a transcript comment. The first was 'the specificity of the comment' – how detailed and extensive is the comment? The second criterion was 'the conviction/intensity of the comment' – to what extent does the speaker communicate a depth of feeling and strongly held opinion on the issue? A three-stage weighting scale was developed against which comments were measured: Low (scoring 1), Medium (scoring 2) and High (scoring 3).

Triangulation of data sources

Examining the consistency of information from different data sources has been described as 'triangulation of sources' (Patton, 2002). Following the fieldwork the researchers had three data sources that enabled a degree of triangulation: the transcripts of the focus group interviews; the results of the question cards completed at the start of each meeting; and information from the questionnaire completed by participants that included details of their income, education, family and their actual KiwiSaver fund choice.

Findings

Analysis of the focus group transcripts identified 21 codes representing eight themes (see Figure 10.1). Further analysis of all the data, including the focus groups, the question cards and the brief questionnaires, resulted in a final picture of the influences on the KiwiSaver fund choice decision (see Figure 10.2). Five of the nine themes in Figure 10.2 appear to have the strongest influence – attitude to financial risk; perceived time until retirement; advice from family, friends and colleagues; information from providers and the news media; and knowledge of investing. Three influences appear to be of lesser importance – involvement in financial products, ethical concerns and participants' other assets. Overriding all these factors is the influence of the default investment scheme offered by pension providers (see Figure 10.2).

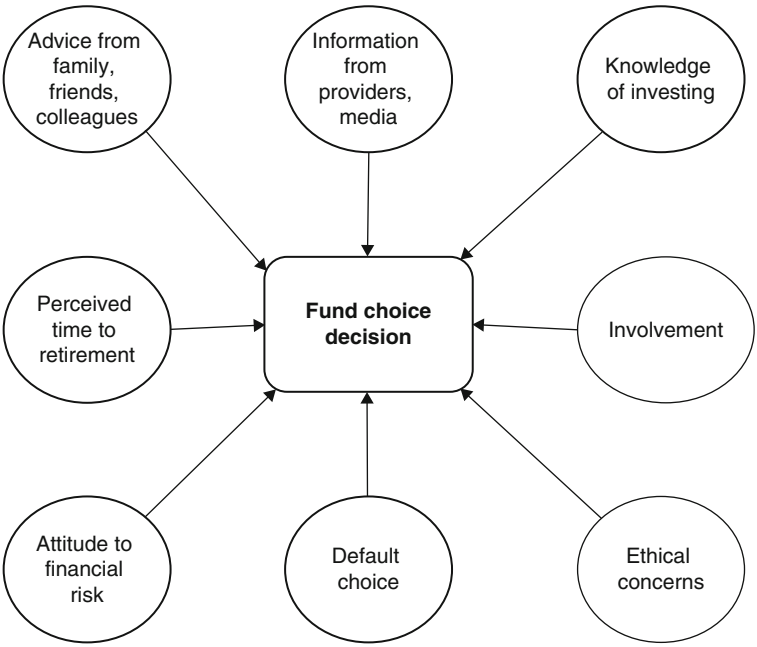

Figure 10.2 Factors influencing KiwiSaver fund choice

Attitude to risk

Attitude to financial risk was uppermost in the minds of the focus group participants, in relation to both their pension fund decision and their financial planning in general. It received the highest number of mentions in the focus group discussions and came out top in the influencing factor ranking exercise. Participants were evenly split on the topic with half having a negative attitude and half a positive attitude to financial risk. Negative attitudes to financial risk were voiced in all three groups. Younger participants who were risk averse said it was because they were not well enough informed, not sufficiently experienced or just 'not having a head for finance'. For those in the 36–54 and 55+ groups and uncomfortable with risk it was the fear of potential losses that put them off.

> I don't have much time to go so I don't want to lose anything. I want to be on the safe side. It's not necessarily going to make me a lot of money, I know, but avoids the possibility of losing. (55+) I think

> safety is the most important thing. I don't want to lose my money. (36–54)

Most of those in the 55+ age bracket who were comfortable with financial risk understood the received wisdom about reducing risk exposure with age. Participants who welcomed risk saw it as a route to faster funds growth.

> I'm a bit surprised so many people are choosing conservative and not risking more because they have got a lot of years to get there. At a younger age you're able to risk a lot more and recover. (55+)
> A growth fund may have its ups and downs but overall it grows at a faster rate for say 30 years, then you are going to be in a better position. From my point of view the risk is worth taking. (20–35)

Perceived time to retirement

Participants talked about financial planning for retirement in terms of their perception of their current life stage – how close or how distant their retirement seemed to them. Not surprisingly, the 20–35-year olds saw retirement as well over the horizon.

> I've got 40 years to retirement which is a long time and I back myself to end up better off then following a growth approach than taking a conservative outlook. (20–35)

Only one participant from the 36–54 group and one in the 55+ group believed they still had a long time to save and invest for retirement, and both had chosen a growth fund. Several participants articulated the received wisdom about fund choice and time to retirement, one saying the younger you were 'the more time you had for a volatile investment to go up and down but grow more strongly'. All the comments under the code for 'perceive a short time to save/invest for retirement' came from the two older focus groups.

Word-of-mouth advice

Advice from family, friends and colleagues was a strong influencing factor for those in the 20–35 age group. Participants talked about listening to the advice of family members, or learning from their friends, or just talking things over with friends and work colleagues who were in a similar situation to them. The two younger focus groups talked about trusting or relying on the judgement of family members who had

experience with financial matters. In all cases participants found the advice helped in their decision process.

> You got to get advice from the people you trust. What they recommend for you is not necessarily what you may decide may be the best scheme for you. But you trust that they will be able to explain things for you, and interpret things in a way that you can understand. (20–35)
>
> I turn to people who know more than me and ask them what I should do. I have a sense of personal hopelessness in this area, it's not one of my skills. (36–54)

Information sources

Many participants felt that their choice of investment fund was influenced by information and recommendations coming from their employer, the media, the Government and providers. Many had a negative view of pension providers' ability to supply them with timely and useful information. Some felt poorly informed when they joined the scheme, but the most common criticism focussed on the reporting of fund performance by providers. Participants said their provider had not clarified where their funds were invested; or the information they got was confusing or lacked detail; or the communications were infrequent or required too much effort to interpret.

> The information isn't good enough. When I get the information it doesn't mean a whole lot to me. Because this is a retail scheme things need to be simplified and explained to people. (20–35)

Views expressed on the role of the media were strongly positive with most regarding the media as an important or helpful source of information. Two participants felt disappointed by the information their employer was able to provide, one saying he was just 'referred to the IRD website', and another saying the material from her employer was insufficient and too general.

Knowledge of investing

Previous experience with investing – or the lack of previous experience – has a bearing on the KiwiSaver fund choice. Participants in the 55+ age bracket were the most talkative on the subject. Some younger participants who had experience of investing felt that the volatility of the financial markets in recent years would make some scheme members wary of investing in shares. Younger participants talked about their

'poor understanding of the financial markets', about not having a head for finance, and being 'just not informed enough to take risks'.

> I have a poor understanding of the financial markets and how they work, but I'm aware of the volatility and that puts me off. I haven't received much professional advice and I don't have much past experience with investing. (20–35)

Involvement

Some participants were not engaged with the fund choice decision, saying they were indifferent about where their savings were invested, or they were prepared to accept their employer's default scheme and fund. A younger (20–35) participant, who had joined for the 'free money' in the Government's $US850 kick-start, said he would not be concerned about the fund until he started to see losses. Two other participants who had gone with their employer's default had either not got around to choosing a fund or were just not interested in doing the research. Several comments captured the idea that the most important or obvious choice was to be in the scheme because 'it was such a good deal', it was 'a no brainer' or it was easy to switch funds later but 'the main thing was to be in the scheme'. These sentiments were all expressed by older (55+) participants.

Ethical concerns

Several participants in the 36–54 focus group said their ethical concerns would influence their choice of KiwiSaver fund. One said the ethical side of investing was important and 'people had to take it more into account these days'. Another said she had actively looked for a provider offering an ethical fund but none had met her standards:

> I didn't want to be investing in tobacco or armaments companies. But I've found it very difficult to find a provider that excluded companies that I didn't want to invest in. I'm with Gareth Morgan and I see that I've got shares in Pepsi Cola and McDonalds which I would rather not. But there isn't a provider that excludes takeaway and soft drink companies. If there was I would choose that provider. (36–54)

Socially responsible investment has become a core issue for many contemporary investors. Nilsson *et al* (2010) show how socially responsible investors search for information on the social, ethical and environmental behaviour of companies before making an investment decision.

Employer default settings

The strong influence of KiwiSaver's default settings is evident in the fact that nine of the 17 participants revealed in the questionnaire that they had opted to go with their employer's default KiwiSaver provider. These nine participants were distributed across the three focus groups. As one 55+ participant put it: 'I just placed my confidence in my employer – that someone had made a considered decision to go with Tower. I'm not into reading balance sheets'.

The default choice is not a filter to other choice making; it is not something that is always considered *before* other factors – such as advice from friends, family and colleagues, or attitude to financial risk – are considered. In fact, it is equally likely that, once the consumer has considered a number of other factors influencing fund choice, passive decision-making sweeps the consumer towards the path of least resistance, that is, towards the default choice. The default choice is also a prime option for those consumers who lack involvement or knowledge of investing.

Discussion and implications

Two important factors were evident about KiwiSaver prior to this study: first, thanks to the auto-enrolment regime and the incentives on offer, the uptake of the scheme had greatly exceeded expectations, with 1.97 million joining by June 2012 (Inland Revenue Department, 2012); and second, the prescribed asset allocation built into the design of the default funds was inflating the proportion of KiwiSavers' savings invested in conservative funds – 57 per cent of the funds invested at the end of June 2011 were in conservative (including default) or conservative/moderate funds (Morningstar, 2011). Of course not all those in conservative funds had joined a default scheme; a significant proportion had *actively chosen* a low-risk, conservative fund.

As Figure 10.2 illustrates, aside from the strong influence of the default scheme settings in KiwiSaver, there are several main factors influencing the fund choice decision. It should be noted that the model does not specify a set sequence in which these factors are considered by the consumer. Indeed, it is likely that the sequence in which the factors operate varies greatly from one consumer to another. Matching the findings of earlier studies (Grable and Joo, 1998; Joo and Grable, 2000; Rickwood and White, 2009), the single most prevalent factor is 'Attitude to financial risk', but interestingly participants were evenly split on whether financial risk was good or bad. Participants were either

attracted to the promise of higher returns associated with growth funds, or were accepting of slower, steadier returns associated with conservative funds. The next most important influencing factor appears to be age and perceived time to reaching retirement. Other researchers have also found a link between life stage and retirement planning (Devaney and Su, 1997; Prenda and Lachman, 2001; Petkoska and Earl, 2009). While younger participants behaved as economic rationalists by thinking their long horizon to retirement meant they should opt for growth funds, some older participants felt they too should be in growth funds, which is more aligned to the portrayal of investment decision-makers provided by behavioural economics (Kahneman and Tversky, 1979; Foxall, 1993; Mullainathan and Thaler, 2000; Mitchell and Utkus, 2004; Benartzi and Thaler, 2007). Matching the findings of Rickwood and White's study (2009), advice from family, friends and colleagues turned out to be another important influencing factor – an observation that again finds more support in behavioural economics than neoclassical economics or classical marketing theory (Markowitz, 1952; Savage, 1954; Nicosia, 1966; Engel *et al*, 1968). This research confirmed that few people joining KiwiSaver get professional financial advice, a point the providers have been arguing. Harrison *et al* (2006) also found a reluctance to consult financial professionals.

While participants trust the media as a source of information on KiwiSaver, some were dissatisfied with the quality of information and fund performance reporting supplied by providers. While other researchers have found a link between financial knowledge and retirement investing (Hilgert *et al*, 2003; Agnew and Szykman, 2005; Perry and Morris, 2005), this study found previous knowledge of investing was a significant but not a major influencing factor, mainly because most participants had little experience in the financial markets. Less significant still was support for the marketing concept of involvement (McKechnie, 1992; Harrison, 1994; Beckett *et al*, 2000). Few participants felt really engaged in the idea of choosing a retirement fund. In an aside, participants were asked which they had spent more time on: choosing their KiwiSaver fund or choosing their current cell phone. Nine of the 17 participants said they put more time into choosing their cell phone, which again would have the behaviouralists nodding.

The theoretical contribution of this article is that it elucidates the likely factors that influence consumer decision-making for retirement investments, most particularly in an auto-enrolment regime. The article suggests that a large proportion of consumers in such an environment will opt for the default provider scheme, a result of passive decision-making or

mental inertia on the part of the consumer (Samuelson and Zeckhauser, 1988; Choi *et al*, 2002; Beshears *et al*, 2008).

Implications

When these findings are added to the limited research conducted on consumer choice of retirement funds in an auto-enrolment regime, a number of issues emerge about the design of the KiwiSaver auto-enrolment regime and the way members are using the scheme.

First, this study underlines concerns about the high proportion of young KiwiSavers stuck in conservative funds not matching their age or risk profile. KiwiSaver providers have also criticized the conservative bias in the scheme (Ministry of Economic Development, 2008; Inland Revenue Department, 2010). The government will be under some pressure to change the default provider rules and conditions when they are reviewed in 2014. The government could require providers to move from a single to multiple default funds based on a life stage investment approach (Rajkumar and Dorfman, 2010). Where new recruits decline to make an active choice of KiwiSaver fund, they would be drafted into an age-appropriate default fund with an appropriate asset mix to match their risk profile.

Second, another potential reform option would be for the government to require default providers to offer a comprehensive education and advice service to their KiwiSaver clients, perhaps in partnership with employers. While the cost of such a programme could be shared with employers and KiwiSaver members, the default providers would shoulder some of the responsibility for their clients making wise decisions on their investment strategy.

Third, and still on education, coordination between the 10 government agencies that have an interest in financial literacy could be improved, as the Capital Market Development Taskforce report (Ministry of Economic Development, 2009) recommended. Surveys by Colmar Brunton (2009) and a study on New Zealand's financial education (O'Connell, 2009) show more needs to be done if New Zealanders are to be responsible for managing their own portfolios.

Fourth, some participants in this study criticized the quality of information and performance data coming from KiwiSaver providers. The CMDT report (Ministry of Economic Development, 2009) suggests that providers be directed to report their fund performance information to investors on a regular basis and that their investment statements be written in plain English. It also recommends that performance data from all providers should be provided on a centrally run and unbiased website.

Limitations and future research

The general limitations of using focus groups apply to this study. While the age groups and gender split among participants was a reasonable reflection of New Zealand's working population, the fact that participants all had a university education may limit the scope for generalizing the findings. Yet, it might be the case that university-educated investors might be more informed on financial investment; thus the research findings here present a 'best case' scenario regarding financial literacy rather than a 'worst case' scenario. Future research could employ a large sample study to investigate if level of education influences diversity of investment choices through a simple mechanism of wealth: that more wealthy consumers being able to invest greater sums and afford professional financial advice on the allocation of those funds. The findings that emerged from the study are consistent with past research (Simon, 1955; Kahneman and Tversky, 1979; Mowen, 1988; Foxall, 1993; Devaney and Su, 1997; Grable and Joo, 1998; Joo and Grable, 2000; Mullainathan and Thaler, 2000; Prenda and Lachman, 2001; Mitchell and Utkus, 2004; Harrison *et al*, 2006; Benartzi and Thaler, 2007; Petkoska and Earl, 2009; Rickwood and White, 2009).

The influencing factors on fund choice found in this study could be tested using several alternative methods in the future: in a further round of focus groups that involve more diverse participants; in a series of one-to-one interviews with KiwiSaver members exploring their motivations in greater depth; or in a wider quantitative survey using a deductive approach to test the impact of influencing factors on fund choices (Hyde, 2000). Financial literacy levels are clearly a major issue; further research is required into how well consumers understand their pension schemes (Toder and Khitatrakun, 2006). Among other issues ripe for study are the impact of ethnicity, gender, education levels and income levels on the fund choice decision; the determinants of risk attitude towards investment decision-making; and the communication styles used by pension scheme providers, in terms of presenting their fund options and reporting their performance. Research on these themes will give pension fund providers and policymakers insights into improving pension schemes for the benefit of their clients.

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11

The Customer Orientation of Financial Advisers

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Introduction

Improving client satisfaction and retention are often stressed as important factors in the long-term success of financial advisers.[1–5] One major determinant of client satisfaction and retention is the customer orientation level of the adviser. Customer orientation reflects the disposition of individuals working in service industries (such as financial planning) to focus on and meet clients' needs.[6] Previous research has found customer orientation to be associated with important outcomes such as repurchase intentions, loyalty, and customer value perceptions.[7] Despite the importance of customer orientation, the actual degree of customer orientation of financial advisers has not been examined in previous research. Numerous experts in the financial services industry have, however, emphasised the importance of advisers focusing on identifying and meeting customer needs.[4,5,8–10] To date, however, the level of customer orientation of financial advisers has not been investigated empirically.

Customer orientation has taken on greater importance since the recent scandals in the mutual funds industry and the civil actions faced by some of the nation's brokerage firms in recent years. Investigations by both the United States Securities and Exchange Commission and the National Association of Securities Dealers involved marketing practices that put investors at a disadvantage when it came to purchasing mutual funds.[11–14] This regulatory scrutiny and subsequent charges against some companies highlighted a distinctly noncustomer-friendly environment in the financial services industry and raises an interesting question: Are financial advisers as customer oriented as they need to be? While the importance of financial advisers being customer oriented is often discussed, no research has sought to determine whether financial advisers actually possess a customer orientation that will enable them to develop successful relationships with their clients. This research, therefore, investigates the degree of customer orientation of financial advisers and whether customer orientation varies across certain demographic categories. The study is important to financial advisers because it focuses on customer orientation which is central to the creation of satisfactory client relationships. The research results should be useful to the financial services industry as a whole as it will document the overall level of customer orientation using a broad cross-section of financial advisers. These findings can then be used as inputs into the future training of financial advisers in order to effectively meet the needs of investors.

This research also examines various mutual fund characteristics (eg fund risk, fund expenses, fund load) and the importance that financial

advisers place on those characteristics when making recommendations to their clients. Past research indicates that investors using financial advisers have lower levels of financial knowledge, are more responsive to advertising, and rely more heavily on financial advisers for information compared to investors buying mutual funds directly from fund companies, that is, no-load funds.[15,16] It is therefore important to examine the information used by financial advisers when they make mutual fund recommendations to clients. This study seeks to determine whether the importance placed on these mutual fund factors varies according to financial advisers' level of customer orientation.

Finally, this research investigates the relationship between customer orientation and various satisfaction outcomes to determine whether higher levels of customer orientation lead to higher satisfaction with sales productivity and with a number of other client-based performance measures. Increasingly, financial advisers are asked to maximise productivity while also maintaining positive long-term customer relationships. It is therefore important to investigate whether customer orientation is correlated with adviser satisfaction in these areas.

Background

Customer orientation and the client-adviser relationship

For financial advisers, a major determinant of client retention is a satisfactory relationship between client and adviser.[8] Satisfaction with the relationship leads not only to increased customer loyalty and retention, but results in greater referrals and reduces clients' perceived risk and transaction costs. Relationship satisfaction also leads to increased customer commitment. According to Beckwith (p. 14), '...the failure to achieve goals and objectives in any service business is relationship-based, not competency-based'.[17]

Creating strong, satisfactory relationships with clients involves more than just being skilled in investments or other financial services. It involves understanding the 'whole picture' of a client and staying connected through open communication.[4] It requires listening,[4] managing clients' emotional states and tendencies,[9] and ensuring trust.[8] Empathy has been suggested as being related to satisfaction as well.[4,9] Enhancing client relationships may also require investments in technology such as a customer relationship management (CRM) system.[1] The benefits of an effective CRM system include not only higher efficiency but also higher levels of client service, satisfaction, and retention (and ultimately increased profitability).

Darwish (p. 39) argues that the planner's 'central role is to counsel clients' and therefore advisers must apply emotional intelligence to financial

services planning by managing the relationships with their clients on a deeply personal level.[9] For example, Ameriprise Financial, Inc., formerly American Express Financial Advisers, includes life-planning skills into its training of advisers who serve the affluent market.[18] Regardless of any particular method used, the goal is the same — to better understand and then meet client needs and wishes — that is, having a true customer orientation.[6]

There is some empirical evidence that customer orientation is related to relationship quality in that the use of customer-oriented selling has been found to be related to the quality of the customer-salesperson relationship.[19] Customer orientation has also been empirically linked with a number of important client outcomes such as customers' perceptions of employee performance, customers' perceptions of value, repurchase intentions, loyalty, and word-of-mouth behaviour.[7] While previous research widely documents the importance of client retention and client-planner relationships, no research has sought to determine whether financial planners have the traits associated with customer orientation that will enable them to be successful in those relationships. Therefore, this research investigates the customer orientation levels of financial advisers and whether they differ across various demographic groups. Based on the preceding discussion, this research addresses the following research questions:

RQ1: *Overall, how customer oriented are financial advisers?*
RQ2: *Does the customer orientation of financial advisers vary according to demographic characteristics?*

Customer orientation and mutual fund investments

It has been argued by some that investment advice can be tainted by the background of the adviser, whether that background is insurance, investments, or financial planning.[20] This suggests a seller orientation rather than a customer orientation. Yet having a customer orientation appears vitally important in today's post-mutual funds scandal world. Focusing on client needs rather than self-interest might have avoided the regulatory nightmare that several brokerage firms and fund companies recently faced. For example, both Edward Jones & Co. and Morgan Stanley settled large civil lawsuits ($75m and $50m, respectively) without admitting or denying wrongdoing in cases involving various marketing practices.[12,13] In the Edward Jones case, it involved a practice known as revenue sharing whereby mutual fund companies pay incentives to brokers — in addition to a commission — for selling their products to investors.[12] In the case of Morgan Stanley, the civil suit involved

failure to provide clients with appropriate information about incentives driving fund sales and about fees clients would incur when purchasing certain shares of Morgan-run funds.[13]

Information sharing is one of the vital functions financial advisers provide for their clients. The mutual fund industry now exceeds $10tn, and a majority of mutual fund investors rely on the advice of financial advisers to help them select mutual funds.[21] As such, it is important for financial advisers to base their recommendations on fund characteristics that maximise investors' long-term wealth. This research seeks to address the issue of financial advisers' decision making by looking at the importance of critical factors used in the mutual fund selection process and determining whether the importance of these factors varies according to the adviser's level of customer orientation. For example, do financial advisers who are more customer oriented place more importance on fund risk when choosing a mutual fund than advisers who are less customer oriented? Fund risk is just one of the characteristics examined in this study. Other mutual fund characteristics investigated include fund expenses, tax efficiency, fund objective, fund load, and fund 12b-1 fee, all of which have been found to be critical determinants of investors' long-term wealth.[22–24] Based on the preceding discussion, this research examines the following research question:

RQ3: *Does the importance that advisers place on various fund characteristics vary according to their level of customer orientation?*

Customer orientation and financial adviser satisfaction with performance

In addition to investigating the varying degrees of adviser customer orientation and the significance advisers place on various mutual fund characteristics, this research seeks to determine whether financial advisers' satisfaction with their performance varies by their customer orientation level. Increasingly, financial advisers are being asked to maximise productivity while also maintaining positive long-term customer relationships, two goals that may come into conflict with one another. It is therefore important to examine whether customer orientation is correlated with adviser satisfaction in these areas. Research indicates that in service industries such as financial advising, employee satisfaction is an important determinant of customer satisfaction, customer loyalty, employee retention, and overall profitability.[25] This research investigates advisers' satisfaction with a number of areas including performance measures such as sales productivity in dollars, prospecting abilities,

qualifying abilities, and others to determine whether advisers' satisfaction varies by their level of customer orientation. Based on the preceding discussion, this research addresses the following research question:

RQ4: *Does the satisfaction with performance of financial advisers vary according to their level of customer orientation?*

Method

Mail surveys were used to investigate the research questions. A mailing list of 3,000 randomly selected financial advisers located in the southeastern United States was purchased from a widely circulated periodical targeted exclusively to financial advisers. Each adviser was sent a letter of introduction, a survey, and a postage-paid return envelope. Respondents were informed that they could receive a summary of the results by including a business card in the return envelope. After accounting for undeliverables, 530 surveys were returned for a response rate of about 18 per cent.

Customer orientation was measured using a previously validated 12-item scale.[6] Advisers were asked to indicate their level of agreement/disagreement with statements such as, 'I enjoy responding quickly to my customers' needs' and 'I get customers to talk about their service needs with me'. The items used a five-point scale in which 1 represented 'strongly disagree' and 5 represented 'strongly agree'. The scale items, presented in Table 11.1, were averaged across the 12 items to arrive at an

Table 11.1 Customer orientation scale items[a]

I find it easy to smile at each of my customers.
I enjoy remembering my customers' names.
It comes naturally to have empathy for my customers.
I enjoy responding quickly to my customers' needs.
I get satisfaction from making my customers happy.
I really enjoy serving my customers.
I try to help customers achieve their goals.
I achieve my own goals by satisfying customers.
I get customers to talk about their service needs with me.
I take a problem solving approach with my customers.
I keep the best interests of the customer in mind.
I am able to answer a customer's questions correctly.

[a]Advisers indicated their level of agreement/disagreement where 1 represented 'strongly disagree' and 5 represented 'strongly agree'.

overall customer orientation score. Coefficient alpha for the customer orientation measure was 0.88, indicating strong internal consistency.

Financial advisers were also asked to indicate the level of importance they place on the following fund characteristics when recommending funds to clients: (1) fund risk, (2) fund expenses (excluding commissions), (3) tax efficiency, (4) fund objective, (5) fund load, and (6) fund 12b-1 fee. As previously discussed, these factors were chosen because they are critical factors that impact investors' long-term wealth. The importance questions used a five-point scale, where 1 reflected 'very unimportant' and 5 reflected 'very important'.

Financial advisers were also asked about their satisfaction with the following: (1) sales productivity in dollars, (2) productivity in terms of current prospects, (3) productivity in terms of future prospects, (4) amount of time it takes to convert prospects into buyers, (5) level of commitment exhibited by a typical buyer, (6) ability to accurately qualify a prospect, and (7) ability to determine a buyer's wants and needs. These items used a five-point scale, in which 1 represented 'very dissatisfied' and 5 represented 'very satisfied'. These satisfaction values with performance questions have been successfully used to gather a salesperson's satisfaction in other industries.[26] Finally, the survey gathered the following demographic characteristics: gender, age, income, education, years of advising experience, and company type.

Characteristics of the sample are provided in Table 11.2. The majority of survey respondents were male (85.8 per cent), and approximately half (51.3 per cent) of the sample was between the ages of 36 and 55. More than half (54.6 per cent) of the respondents had incomes of $100,000 or more, and over 88 per cent had at least a bachelor's degree. Approximately 53 per cent of sample respondents had 10 years of experience or less, and 17.7 per cent had over 20 years of advising experience. The overwhelming majority of respondents (78.1 per cent) were from brokerage/securities firms. Respondents classified as being employed by 'Other' organisations were employed by banks, insurance companies, and independent agencies, among others. The sample appears to represent a good cross-section of financial advisers.

Results

The goal of RQ1 was to empirically investigate financial advisers' level of customer orientation. Overall, the results indicate that financial advisers score very high in customer orientation. The mean customer orientation level was 4.67 on a five-point scale, where higher scores

Table 11.2 Sample characteristics

Characteristic	Per cent
Sex	
Female	14.2
Male	85.8
Age (years)	
35 or Younger	26.8
36–45	22.0
46–55	29.3
56–65	17.4
Over 65	4.4
Income	
$49,999 or less	13.1
$50,000–$99,999	32.4
$100,000–$149,999	23.2
$150,000 or more	31.4
Education	
High school	7.3
Associates	4.4
Bachelors	62.4
Masters or doctorate	25.7
Years advising	
0–5	32.5
6–10	20.9
11–15	14.8
16–20	14.1
Over 20	17.7
Type of company	
Brokerage/securities firm	78.1
Other	21.9

reflect higher levels of customer orientation. The range of customer orientation levels was from 1.25 to 5.00. The distribution of customer orientation scores is somewhat negatively skewed. A high frequency of advisers score at the upper end of the scale, which reflects higher levels of customer orientation. While norms do not currently exist for the customer orientation scale, the results of this research suggest that financial advisers have a high level of customer orientation based on the self-reported measure.

To address RQ2, the customer orientation levels of financial advisers were then analysed with respect to the following demographics: gender,

age, income, education, years of advising experience, and company type. An analysis of demographic characteristics revealed that financial advisers' customer orientation levels varied somewhat across gender, income, and company type (see Table 11.3). It should be noted, however, that overall the customer orientation levels of all groups were very high, and that the significant differences across specific demographic groups simply reflect instances where some groups were extremely high in their

Table 11.3 Customer orientation by financial adviser demographics

Characteristic	**Mean customer orientation**	**F/t-value[a]**
Sex		
Female	4.76	2.19[b]
Male	4.65	
Age (years)		
35 or younger	4.71	2.26
36–45	4.61	
46–55	4.69	
56–65	4.67	
Over 65	4.49	
Income		
$49,999 or less	4.53	3.39[b]
$50,000–$99,999	4.67	
$100,000–$149,999	4.72	
$150,000 or more	4.69	
Education		
High school	4.74	2.09
Associates	4.76	
Bachelors	4.67	
Masters or doctorate	4.60	
Years advising		
0–5	4.67	0.74
6–10	4.70	
11–15	4.69	
16–20	4.60	
Over 20	4.65	
Type of company		2.13[b]
Brokerage/securities firm	4.69	
Other	4.58	

[a]The *F*-value is provided for demographic variables with more than two subgroups and the *t*-value is provided for demographic variables with only two subgroups.
[b]$p<0.05$.

level of customer orientation. The results indicate that women had significantly ($p<0.05$) higher customer orientation levels (mean = 4.76) than men (mean = 4.65). Advisers with higher incomes also had higher levels of customer orientation than those with lower incomes. A post hoc comparison indicates that advisers with an income below $50,000 have a mean customer orientation level (mean = 4.53) significantly lower ($p<0.05$) than advisers with an income of $50,000–$99,999 (mean = 4.67), $100,000–$149,999 (mean = 4.72), and $150,000 or more (mean = 4.69). Finally, there was a significant difference in customer orientation depending on the type of company with which the advisers are employed. Those working in brokerage/securities firms had significantly higher ($p<0.05$) customer orientation levels (mean = 4.69) than advisers working in other firms (mean = 4.58).

Next, two variables were investigated with respect to various levels of customer orientation: the importance of various fund factors on financial advisers' recommendations (RQ3) and financial advisers' satisfaction with their performance (RQ4). A median split was performed on advisers' overall level of customer orientation such that two groups of advisers were formed: 'lower customer orientation' ($n=263$) and 'higher customer orientation' ($n=244$). With regard to the importance of fund factors on advisers' mutual fund recommendations, the results indicate that financial advisers with higher levels of customer orientation place a greater level of importance on fund characteristics that have been shown to be critical to maximising investors' long-term wealth. As shown in Table 11.4, financial advisers with higher levels of customer orientation rate fund risk ($p<0.01$), fund expenses excluding commissions ($p<0.01$), tax efficiency ($p<0.01$), fund objective ($p<0.01$), and fund 12b-1 fee ($p<0.05$) significantly more important when compared to advisers reporting lower levels of customer orientation. The importance of fund load, however, did not vary significantly across the two groups. This finding is likely due to the fact that most advisers' compensation is provided via the fund load and so it is a constant across all of the funds that most advisers recommend.

The results also indicate that financial advisers' satisfaction with their performance varies significantly across higher and lower levels of customer orientation. Specifically, when compared to financial advisers with lower levels of customer orientation, financial advisers reporting higher levels of customer orientation report higher levels of satisfaction with their sales productivity in dollars ($p<0.01$), current prospects productivity ($p<0.01$), future prospects productivity ($p<0.01$), prospect conversion time ($p<0.05$), buyer commitment ($p<0.01$), prospect qualifying

ability ($p<0.01$), and ability to determine buyers' needs ($p<0.01$). Overall, the results suggest that financial advisers who have higher levels of customer orientation also enjoy better outcomes with respect to their business and their customers.

Discussion

One critical key to client retention for financial advisers is the quality of the client-adviser relationship, and one major determinant of a satisfactory relationship is the customer orientation of the adviser. This research found that financial advisers have uniformly high levels of customer orientation, which should help them achieve successful relationships with their clients. Financial services firms should continue to seek and retain advisers who demonstrate a high regard for investors and their financial needs. It is important to note, however, that this study relied on self-reported levels of customer orientation. Future research should investigate the customer orientation of financial advisers from investors' perspectives and compare advisers' perceptions of their customer orientation with their clients' perceptions.

While customer orientation scores were very high across most demographic groups, the results did indicate that customer orientation was slightly lower among certain groups, suggesting that customer orientation training might be necessary for some advisers. The finding that female financial advisers had significantly higher customer orientation levels than men is interesting given recent reports of financial services firms heavily recruiting women for these positions.[27] Financial services companies' interest in women is not new, but as the amount of money women control grows, it is intensifying. The current spending power of American women is greater than the entire economy of Japan,[27] and female advisers may be especially suited to working with female clients. The greater customer orientation of women advisers may place them in a better position to take advantage of this growing market.

The results also indicated that advisers earning the least amount had lower levels of customer orientation. This finding suggests that having a customer orientation might have a positive impact on overall income, which should serve as additional motivation for advisers to adopt a greater customer orientation. The results also showed that customer orientation varied according to the type of company that employed the adviser. Advisers working for brokerage and securities firms reported a slightly higher customer orientation than advisers working for other companies such as banks and insurance companies. It is not clear exactly why advisers working for brokerage and securities firms reported

Table 11.4 Importance of fund factors and satisfaction with performance by level of customer orientation

	Lower customer orientation	**Higher customer orientation**
Importance of fund factors		
Fund risk	4.13	4.56[b]
Fund expenses (excluding commissions)	3.40	3.67[b]
Tax efficiency	3.37	3.60[b]
Fund objective	4.29	4.63[b]
Fund load	2.94	3.06
Fund 12b-1 fee	2.78	2.98[a]
Satisfaction with...		
Your sales productivity in dollars	3.13	3.51[b]
Your productivity in terms of current prospects	3.22	3.56[b]
Your productivity in terms of future prospects	3.30	3.66[b]
The amount of time it takes to turn a prospect into a committed buyer	3.34	3.67[a]
The level of commitment exhibited by your typical buyer	3.48	3.91[b]
Your ability to accurately qualify a prospect	3.88	4.17[b]
Your ability to determine your buyer's wants and needs	4.18	4.58[b]

[a] $p<0.05$.
[b] $p<0.01$.

slightly higher levels of customer orientation. One possible explanation is that advisers working for brokerage and securities firms have to possess high levels of customer orientation since they are more likely to recruit their customers personally. For advisers working for other institutions such as banks and insurance companies, it is possible that their customers are typically referred to them from other divisions within the firm, and so their level of customer orientation is slightly lower or less developed. Another potential explanation for the difference in customer orientation scores could be differences in training at the various types of financial institutions. These explanations, however, are speculative, and future research should investigate significant differences in customer orientation across different types of financial institutions.

The finding that advisers with higher levels of customer orientation focus more attention on critical fund characteristics is both intuitive and encouraging. Of the characteristics examined, fund risk and fund expenses are the two that previous research demonstrates that investors neither understand nor pay particular attention to when making fund

choices. As such, advisers with higher levels of customer orientation do in fact overcome some of the weaknesses of the investors that tend to be their clients. In addition, the higher customer orientation advisers also clearly focus attention on the goals of the investors by consistently placing greater emphasis on fund investment objectives. This implies that advisers map goals to appropriate investment types, whereas previous research shows that investors tend to make decisions more emotionally, for example, by chasing past performance. Overall, the results suggest that investors should seek to find an adviser with a high level of customer orientation to ensure that the adviser is placing proper emphasis on fund characteristics that are critical to maximising long-term wealth.

The findings also indicated that advisers' disposition towards meeting client needs is directly related to satisfaction with their sales productivity, prospecting efforts, and several other satisfaction variables. Specifically, financial advisers that were more customer oriented were more satisfied with their sales and prospecting productivity as well as with their abilities to qualify prospects and determine their needs. These results suggest that increasing advisers' level of customer orientation is one important way of maximising their satisfaction with important areas such as sales productivity and customer loyalty. Maximising adviser satisfaction is critical since it can lead to higher levels of client satisfaction, client retention, adviser retention, and overall profitability.[25] Therefore, financial service firms should continue to emphasise customer orientation when hiring and retaining financial advisers and monitor advisers' customer orientation levels to ensure that advisers stay focused on meeting client needs.

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12

Gender Stereotyping in Financial Advisors' Assessment of Customers

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Introduction

Research on consumer contact with the financial industry may have important policy implications (Akinbami, 2011; Campbell *et al*, 2011). Calls for this type of research have grown louder in the wake of the global financial crisis in 2008, particularly research with an emphasis, for instance, on consumer financial literacy (Agarwal *et al*, 2009; Almenberg and Gerdes, 2011; Lusardi and Mitchell, 2011; van Rooij *et al*, 2011a) and the possibilities of introducing national literacy programmes (Lusardi, 2008; Cole *et al*, 2012; Taylor *et al*, 2012) to empower consumers (Brennan and Coppack, 2008) as areas of special interest for policymakers.

Interest has increased in the relationship between consumers and financial advisors (Inderst, 2011; Mullainathan *et al*, 2012; West, 2012) and its effects on consumer investments and long-term economic stability. In their 1990 study, Snelbecker *et al* thoroughly discussed financial advisors' ways of detecting investors' risk tolerance. However, there is still much to learn about the practice and impact of professional financial advice (Inderst, 2011). Financial advisors use their professional skills to reduce consumer uncertainty by making individual risk tolerance explicit for customers and by educating customers about

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financial risks in general and making expert-supported investment propositions.

Research has indicated that this relationship with a professional advisor affects consumer portfolio performance (Gerhardt and Hackethal, 2009; Hackethal *et al*, 2009; Kramer, 2012; Kramer and Lensink, 2012) and that financial advice has the potential to serve as a substitute for financial knowledge (Collins, 2012). Hung and Yoong (2010) found that individuals who actively solicit advice ultimately improve performance. However, there are also reports calling for further efforts to ensure consumer protection. For example, Roszkowski and Grable (2005) reported that financial advisors are overestimating the risk tolerance of male customers and underestimating the risk tolerance of female customers. Grable *et al* (2009) also confirmed a relationship between consumers' self-assessed risk tolerance and actual investment risk-taking behaviour. These findings suggest that possible gender stereotypes exist in advisors' assessment of their customers. Further investigation is thus warranted in this area.

Furthermore, consumers do not always realise that their financial advisors are also salespeople (Schwartz *et al*, 2011) – perhaps with incentives to recommend asset allocations that are not always in line with consumer risk tolerance (Jansen *et al*, 2008) – and that the advice market tends to exaggerate biases instead of mitigating them in the interest of consumers (Mullainathan *et al*, 2012). Advisors are affected by the bias of 'framing' financial risk in the same manner as their customers (Roszkowski and Snelbecker, 1990).

However, consumers are dependent on information from their advisor when making allocation decisions (Krausz and Paroush, 2002). Sah and Loewenstein (2012) reported on two experimental studies showing that advisors give more biased advice to unidentified multiple recipients than to an identified individual. The authors argued that advisors feel more strongly about a single known customer, thereby engaging to a greater extent in reducing biases. Research has also shown that long-lasting relationships between consumers and professionals can mean higher costs for consumers because they become more concerned about preserving the relationship than about finding the best deal (Schwartz *et al*, 2011) and that a need exists for better legislative consumer protection (for example, Campbell *et al*, 2011; Levine, 2012).

Consumer characteristics are important determinants of investment behaviour (Sundén and Surette, 1998; Hira and Loibl, 2008) and risk assessment (Powell and Ansic, 1997; Byrnes *et al*, 1999; Weber *et al*, 2002; Harris *et al*, 2006), and they also play a role in household decisions to

engage financial advisors (West, 2012). Individuals with higher incomes, higher levels of education and higher levels of financial literacy are the ones most likely to receive financial advice (Collins, 2012). Martenson (2008) concluded that advisor characteristics are important determinants of consumer perceived relationship quality, but the literature is scarce on how the characteristics of advisors impact their assessment of customers. The aim of this article is to help bridge this knowledge gap by exploring one such characteristic (that is, gender) and the possible gender biases that exist in advisors' assessment of customers. The dependent variables under investigation are chosen to illustrate some areas in financial advisory services (that is, consumer risk tolerance, consumer trust, consumer satisfaction and consumer financial literacy) that are considered of special interest in the emerging field of consumer financial decision-making (Tufano, 2009; Raghubir and Das, 2010; Lynch, 2011).

Theory and hypothesis

A large number of studies have confirmed gender-related differences in risk-aversion behaviour and investment behaviour (Jianakoplos and Bernasek, 1998; Sundén and Surette, 1998; Byrnes *et al*, 1999; Olsen and Cox, 2001; Weber *et al*, 2002; Harris *et al*, 2006; Hira and Loibl, 2008; Borghans *et al*, 2009; Adhikiari and O'Leary, 2011). All these studies show that women are more risk averse than men and that men exhibit overconfident behaviour (Barber and Odean, 2001; Eckel and Grossman, 2001; Coates and Herbert, 2008; Croson and Gneezy, 2009; Charness and Gneezy, 2012). Research on financial advisory services has also reported on the importance of gender differences (Bertrand *et al*, 2005). In their 2006 study, Stendardi *et al* reviewed the literature on gender that was available and related it to the personal financial-planning process. They found that advisors had a tendency to tailor their approach according to customer gender. Based on these unequivocal findings, differences may also exist between male and female advisors' assessments of their customers. To test the relevance of a presumed gender bias in customer assessments made by financial advisors, the following hypothesis was proposed:

Hypothesis: Gender differences exist among financial advisors in assessing their customers.

The validity of this hypothesis was investigated by conducting a survey on advisors' assessment of various items that were chosen because

of their importance to the financial services industry and, above all, to policymakers. Previous research has revealed that consumers' self-assessed risk tolerance affects their actual investment risk-taking behaviour (Grable *et al*, 2009) and that a relationship exists between financial risk tolerance and net worth (for example, Finke and Huston, 2003). Therefore, customers' perception of their own risk tolerance was chosen as a dependent variable together with customers' satisfaction with their advisor, customers' trust in their advisor, customers' likelihood to follow the advice given and customers' financial literacy. A brief review of the literature on these concepts and a discussion of their relevance to the analysis of the aforementioned hypothesis follow. Estimated results for each of the dependent variables are mentioned but not hypothesized and explicitly tested. The main objective of the study is to reject or find evidence for gender stereotyping in financial advisors' assessment of their customers.

Risk tolerance

The definition of the term *risk tolerance* used here is in line with the one put forward by Hunter (as cited in Roszkowski and Davey, 2010), who stated that risk tolerance is 'the amount of risk that an individual is willing to accept in the pursuit of some goal'. It is not the same as risk perception, which instead is the actual perception of something as riskier or less risky and is of relevance in answering questions like the following: How would you rate the risk inherent in this investment? The concept of risk tolerance has been explored (for example, Hanna *et al*, 2011), and different methods for developing risk tolerance assessment instruments have been devised (for example, Grable and Lytton, 1999). However, for the purpose of this study, I do not review this literature further.

Previous research is consistent in finding women to be less risk tolerant than men (Powell and Ansic, 1997; Jianakoplos and Bernasek, 1998; Schubert *et al*, 1999; Yao and Hanna, 2005). In their 2007 study on financial risk tolerance, Grable and Roszkowski found evidence that male respondents overestimated their tolerance for risk, whereas female respondents underestimated theirs. Previous research on gender stereotypes in advisors' judgement of financial risk tolerance has shown that when assessing their customers, financial advisors overestimated the risk tolerance of men and underestimated the risk tolerance of women (Roszkowski and Grable, 2005). Grable *et al* (2009) confirmed a relationship between consumers' self-assessed risk tolerance and actual investment risk-taking behaviour. Diacon (2004) showed significant differences between expert and lay investor perceptions of financial risk.

Experts were found to be less loss averse and also more trusting about the protection from regulations than lay investors. Although it might be obvious, it is still worth pointing out that advisors' accurate assessment of consumers' risk tolerance is a key to the provision of good financial advice and to the attainment of long-term financial stability in a broader context.

Satisfaction, trust and likelihood to follow advice

Extant studies on relationship marketing have emphasised the importance of customer satisfaction (for example, Bejou *et al*, 1998; McDougall and Levesque, 2000) and trust (for example, Morgan and Hunt, 1994; Selnes, 1998; Sharma and Patterson, 2000) for firms in developing long-term relationships with customers. By enhancing customer satisfaction and promoting trust, a financial services provider helps reduce consumer perceived risk in the relationship. Customer perceptions of satisfaction and trust are among the factors that are considered important for financial performance in financial services (Liang *et al*, 2008). Trust develops in a process where an individual gradually establishes a perception of the trustworthiness of another individual (Johnson *et al*, 2003). The trust that develops in an interpersonal relationship with an advisor plays an important role in the investments of customers (Grayson *et al*, 2008). The development of customer relationships (Eriksson and Söderberg, 2010; Dalziel *et al*, 2011) is context dependent, and security mechanisms such as firm brands and market regulations also affect the notion of trust in financial services (McKnight *et al*, 1998; Johnson and Grayson, 2005; Yousafzai *et al*, 2005). Trust is a core business concept in the financial industry. Enhanced customer trust in the advisor is viewed as one of the important outcomes of the financial advisory session. Therefore, advisors' assessments of customer trust and customer satisfaction are here considered to be concepts of interest.

Likelihood to follow advice is an intuitive construct that is used to establish the expectations of the advisor when assessing the anticipated actions of the customer. Based on previous findings (Barber and Odean, 2001; Croson and Gneezy, 2009), this construct is used here to investigate the possibilities of a gender-related overconfidence bias. Given earlier results showing that males make higher estimates of their own abilities than do females (see also Reilly and Mulhern, 1995; Bengtsson *et al*, 2005; Félonneau *et al*, 2012), an expected outcome would be that male advisors assign a higher ranking than female advisors to the likelihood that customers will follow their advice. The same result is estimated for advisor ratings of customer satisfaction and trust: Male

advisors are likely to rate customer satisfaction and trust higher than do female advisors.

Financial literacy

A growing number of researchers are discussing the importance of consumer financial literacy as a way of attaining financial stability and preventing crises such as the recent subprime mortgage crisis in the United States (Kozup and Hogarth, 2008; Lusardi and Tufano, 2009; Gerardi *et al*, 2010; van Rooij *et al*, 2011a). Topics of interest have included the ability to plan for retirement (Lusardi and Mitchell, 2009; Agarwal *et al*, 2011; Almenberg and Säve-Söderbergh, 2011) and the financial literacy of the young (Chen and Volpe, 2002; Norvilitis *et al*, 2006; Johnson and Sherraden, 2007; Mandell, 2008; Lusardi *et al*, 2010). The relevance of the concept of financial literacy has been investigated in different countries around the world (Moore, 2003; Worthington, 2006; Hastings and Tejeda-Ashton, 2008; Organisation for Economic Co-operation and Development [OECD], 2009; Almenberg and Widmark, 2011; van Rooij *et al*, 2011b; Atkinson and Messy, 2012; Behrman *et al*, 2012), and the effects of different educational programmes have been debated (Bernheim *et al*, 2001; Fox *et al*, 2005; Cole *et al*, 2012; Hibbert *et al*, 2012). As shown by Hilgert *et al* (2003), one important aspect of consumer financial literacy is the relationship between financial knowledge and behaviour. What financial advisors think about their customers' financial literacy and ability to make informed decisions about personal finances has an assumed importance for the outcome of the advisory session because consumer protection regulations in many countries explicitly mention the aspect of consumer pre-knowledge of financial matters (Ferrarini and Wymeersch, 2006; McMeel and Virgo, 2007). It is unclear what an advisor gender-related outcome would be expected for the dependent variable of consumer financial literacy. This specific aspect was investigated in the study because it is of great interest in a policymaking context. If gender biases are found in advisors' assessment of consumer financial literacy, this finding will have important implications for consumer protection.

In summary, an expected outcome of a test of advisors' gender effects on the chosen constructs is that male advisors would rank customer satisfaction, trust, likelihood to follow advice and consumer risk tolerance higher than would female advisors. However, it is uncertain what the expected effects would be for advisors' assessment of consumer financial literacy. Any finding of a gender bias in the advisors' assessments of their customers is of interest, regardless of the direction of this stereotyping.

Method and data

The data used in the present study were part of a larger survey that was conducted in 2008 in collaboration with the Swedish Financial Supervisory Authority. The purpose of the larger survey was to study relationships between lay consumers and their financial advisors (see also Eriksson *et al*, 2009). The collaboration provided credibility and good access to all Swedish banks licensed to give financial advice. The authority sent a letter to the banks asking them to provide it with the number of advisors who worked with private investors. The number was related to the size of the bank, giving a total of 775 respondents. The advisors were selected by their respective banks, and the selected advisors correspondingly chose a customer with whom they were to have an advisory session in the following two weeks. This selection process may have produced a biased sample. However, the argument supporting this selection process is that the likelihood of good relationships being chosen between advisors and consumers was greater than the opposite. Given the purpose of this study, this was not a problem. Because the main interest of this study is advisors' gender bias, I assume here that this is not dependent on relationship length.

The total data set consisted of 361 matched pairs of financial advisors and customers who had recently participated in a financial advising session at a bank branch, yielding a combined answer rate of 47 per cent. Advisor/customer pairs were given a questionnaire consisting of 71 essentially identical questions to gauge the degree to which they shared a common understanding of different aspects of the advisory session in which they had recently participated. All pairs were also asked background questions, and the advisors were asked an additional 46 questions about their work situation. The data were immediately collected after an advisory session at a bank branch, and the advisors were questioned about how they thought their customer had perceived the advisory session and the customer-advisor relationship. The results concerning the relationships and the advisors' work situation are being presented elsewhere, and for the purpose of this study, a smaller number of the survey questions are used in the analysis.

Background variables

The data from the questionnaires answered by the advisors revealed the following demographic features: The respondents' ages ranged from 28 to 68 years, and the average age was 48 years. Of the 361 advisors, 229 (63.4 per cent) were females and 132 (36.6 per cent) were males.[1]

A slight majority of respondents had a higher level of education (53.5 per cent) than a lower level of education (46.5 per cent). Most respondents were urban dwellers, with 92 per cent of respondents reporting that they lived in cities with more than 20 000 inhabitants and 24 per cent reporting that they lived in big cities.

The corresponding customers, whose perceptions were assessed by the advisors in the study, comprised 178 females (49.3 per cent) and 183 males (50.7 per cent).

Selection variables

There exist a number of different measures of the constructs of risk tolerance, satisfaction, trust and financial literacy. Because the purpose of this study was to investigate advisors' assessment of their customers' perceptions – not to measure actual customer perceptions – a number of statements made by the advisors about their customers were chosen. Of six attitudinal statements chosen from the questionnaire (see Appendix), six selection variables were constructed to test the hypothesis. They were all bipolar measures coded on a 7-point Likert scale anchored with the end points 'do not agree at all' and 'agree totally'. The variables used are presented in Table 12.1.

These variables illustrate the following: (a) AonC-WLMF: advisors' answers about consumers' willingness to lose savings if the markets in which they invested should happen to fall, (b) AonC-RTOW: advisors' answers about the opinion shared by consumers that it is necessary to increase the amount of risk in a portfolio to obtain higher returns, AonC-WLMF and AonC-RTOW: measures of advisors' assessment of customers' risk tolerance, (c) AonC-SAT: advisors' answers about consumers' ratings on level of satisfaction with the advisor, (d) AonC-RAT: advisors' answers about consumers' ratings on level of advisors' trustworthiness, (e) AonC-WIF: advisors' answers about consumers' willingness to follow their advice and (f) AonC-FINLIT: advisors' answers about the customers' knowledge ability to manage their personal finances adequately.

Because of the normal distribution of the answers, parametric tests were run: independent samples *t* tests (to test the results for the effects of consumer gender) and two-way between groups analysis of variance (ANOVA) tests.

Results

An independent samples *t* test was conducted to compare female and male advisors' ratings of consumers' answers (dependent variables:

Table 12.1 Dependent variables

Variable	Definition	n	Mean	SD	Minimum	Maximum
AonC-WLMF	Illustrates advisors' answers about consumers' acceptance of the idea of losing parts of their savings if the market they are investing in falls.	360	4.83	1.77	1	7
AonC-RTOW	Illustrates advisors' answers about consumers' opinion that it is necessary to increase the amount of risk in the portfolio to be able to get the possibility of higher returns.	361	4.96	1.73	1	7
AonC-SAT	Illustrates advisors' answers about consumer ratings on level of satisfaction with the advisor.	359	6.04	0.74	4	7
AonC-RAT	Illustrates advisors' answers about consumer ratings on level of advisors' trustworthiness.	361	6.25	0.66	4	7
AonC-WIF	Illustrates advisors' answers about consumer willingness to follow the advice they give.	359	5.85	0.92	1	7
AonC-FINLIT	Illustrates advisors' answers about consumer knowledge to handle their personal finances adequately.	361	5.64	1.27	2	7

AonC-WLMF, AonC-RTOW, AonC-SAT, AonC-RAT, AonC-WIF and AonC-FINLIT). There are statistically significant differences in scores for all six variables accounted for in Table 12.2.

Variable AonC-WLMF for females ($M = 4.51$, SD = 1.81) and males ($M = 5.39$, SD = 1.56); $t(303.866) = -4.87$, $P = 0.000$ (two-tailed). The magnitude of the difference in the means (mean difference = −0.88, 95 per cent confidence interval [CI]: −1.24 to −0.53) is, according to Cohen (1988), medium (eta squared = 0.06). Variable AonC-RTOW for females ($M = 4.74$, SD = 1.76) and males ($M = 5.35$, SD = 1.62); $t(359) = -3.25$, $P = 0.001$ (two-tailed). The magnitude of the difference in the means (mean difference = −0.61, 95 per cent CI: −0.97 to −0.24) is small (eta squared = 0.03). Variable AonC-SAT for females ($M = 5.96$, SD = 0.76) and males ($M = 6.19$, SD = 0.69); $t(357) = -2.91$, $P = 0.004$ (two-tailed). The magnitude of the difference in the means (mean difference = −0.23, 95 per cent CI: −0.39 to −0.08) is small (eta squared = 0.02). Variable AonC-RAT for females ($M = 6.18$, SD = 0.69) and males ($M = 6.37$, SD = 0.60); $t(359) = -2.68$, $P = 0.008$ (two-tailed). The magnitude of the difference in the means (mean difference = −0.19, 95 per cent CI: −0.33 to −0.05) is small (eta squared = 0.02). Variable AonC-WIF for females ($M = 5.75$, SD = 0.974) and males ($M = 6.01$, SD = 0.81); $t(315.934) = -2.67$, $P = 0.008$ (two-tailed). The magnitude of the difference in the means (mean difference = −0.25, 95 per cent CI: −0.44 to −0.07) is small (eta squared = 0.02). Variable AonC-FINLIT

Table 12.2 Results of independent samples *t*-test

Variable	Gender	*M*	SD	*t*	*P*
AonC-WLMF	F	4.51	1.81	−4.87	0.000
	M	5.39	1.56		
AonC-RTOW	F	4.74	1.76	–3.25	0.001
	M	5.35	1.62		
AonC-SAT	F	5.96	0.76	−2.91	0.004
	M	6.19	0.69		
AonC-RAT	F	6.18	0.69	−2.68	0.008
	M	6.37	0.60		
AonC-WIF	F	5.75	0.97	−2.67	0.008
	M	6.01	0.81		
AonC-FINLIT	F	5.75	1.24	2.17	0.030
	M	5.45	1.29		

for females ($M = 5.75$, SD = 1.24) and males ($M = 5.45$, SD = 1.29); $t(359) = 2.17$, $P = 0.030$ (two-tailed). The magnitude of the difference in the means (mean difference = 0.30, 95 per cent CI: 0.03 to 0.57) is small (eta squared = 0.01).

Two-way between groups ANOVA tests were conducted to investigate the impact of advisor gender and consumer gender on the variables AonC-WLMF, AonC-RTOW, AonC-SAT, AonC-RAT, AonC-WIF and AonC-FINLIT, as measured by the Life Orientation Test (LOT) and illustrated in Table 12.3.

For AonC-WLMF, the variance across the groups is not equal at the 0.05 significance level, and the more stringent level of 0.01 is set for evaluating the results. However, the variance is still not equal, and the assumption of homogeneity of variance is violated; therefore, results are not reported. For AonC-RTOW, the interaction effect between consumer gender and advisor gender is not statistically significant, $F(1, 357) = 1.03$, $P = 0.31$. There is a statistically significant main effect for advisor gender $F(1, 357) = 10.01$, $P = 0.002$; however, the effect size (Cohen, 1988) is small (partial eta squared = 0.027). For AonC-SAT, the interaction effect between consumer gender and advisor gender is not statistically significant, $F(1, 355) = 0.95$, $P = 0.33$. There is a statistically significant main effect for advisor gender, $F(1, 355) = 8.20$, $P = 0.004$; however, the effect size is small (partial eta squared = 0.023). For AonC-RAT, the interaction effect between consumer gender and advisor gender is not statistically significant, $F(1, 357) = 0.008$, $P = 0.93$. There is a statistically significant main effect for advisor gender $F(1, 357) = 6.66$, $P = 0.01$; however, the effect size is small (partial eta squared = 0.018). For AonC-WIF, the variance across the groups is not equal at the 0.05 significance level, and the more stringent level of 0.01 is set for evaluating the results, thereby giving the wanted effect of equal error variance across groups. The interaction effect between consumer gender and advisor gender is not statistically significant, $F(1, 355) = 1.33$, $P = 0.25$. There is a statistically significant main effect for advisor gender, $F(1, 355) = 7.07$, $P = 0.008$; however, the effect size is small (partial eta squared = 0.02). For AonC-FINLIT, the interaction effect between consumer gender and advisor gender is significant, $F(1, 357) = 4.43$, $P = 0.036$. There are statistically significant main effects for advisor gender, $F(1, 357) = 10.04$, $P = 0.002$, and for consumer gender, $F(1, 357) = 19.92$, $P = 0.000$; however, the effect sizes are small (partial eta squared = 0.027 and 0.053, respectively). Because there are only two levels on each of the independent variables, any further follow-up tests are not possible.

Table 12.3 Results of two-way between-groups analyses of variance (ANOVA)

Source	Sum of squares	DF	Mean square	*F*	*P*-value
AonC-RTOW					
Main effects					
Advisor gender	29.251	1	29.251	10.008	0.002
Consumer gender	0.362	1	0.362	0.124	0.725
Two-way interactions					
Consumer gender by advisor gender	3.021	1	3.021	1.034	0.310
Error	1043.399	357	2.923	–	–
Total	9974.000	361	–	–	–
Corrected total	1078.532		–	–	–
AonC-SAT					
Main effects					
Advisor gender	4.411	1	4.411	8.200	0.004
Consumer gender	0.119	1	0.119	0.221	0.639
Two-way interactions					
Consumer gender by advisor gender	0.511	1	0.511	0.950	0.330
Error	190.982	355	0.538	–	–
Total	13301.00	359	–	–	–
Corrected total	196.373	358	–	–	–
AonC-RAT					
Main effects					
Advisor gender	2.881	1	2.881	6.658	0.010
Consumer gender	0.013	1	0.013	0.030	0.862
Two-way interactions					
Consumer gender by advisor gender	0.004	1	0.004	0.008	0.928

(*continued*)

Table 12.3 Continued

Source	Sum of squares	DF	Mean square	*F*	*P*-value
Error	154.448	357	0.433	–	–
Total	14256.000	361	–	–	–
Corrected total	157.562	360	–	–	–
AonC-WIF[a]					
Main effects					
Advisor gender	5.886	1	5.886	7.071	0.008
Consumer gender	1.520	1	1.520	1.826	0.178
Two-way interactions					
Consumer gender by advisor gender	1.104	1	1.104	1.326	0.250
Error	295.494	355	0.832	–	–
Total	12577.000	359	–	–	–
Corrected total	304.574	358	–	–	–
AonC-FINLIT					
Main effects					
Advisor gender	15.213	1	15.213	10.04	0.002
Consumer gender	30.178	1	30.178	19.92	0.000
Two-way interactions					
Consumer gender by advisor gender	6.705	1	6.705	4.43	0.036
Error	540.709	357	1.515	–	–
Total	12051.000	361	–	–	–
Corrected total	579.463	360	–	–	–

[a]The significance level on AonC-WIF was set to 0.01. For the other variables the level 0.05 was used.
Note. Adjusted R^2: AonC-RTOW = 0.024; AonC-SAT = 0.019; AonC-RAT = 0.012; AonC-WIF = 0.022; AonC-FINLIT = 0.059.

Discussion and conclusion

The selection variables chosen here (the two variables about consumers' perception of their own risk tolerance, customer satisfaction with the advisor, customer trust in the advisor, customer likelihood to follow the advice given and advisors' ratings of customer financial literacy) all showed statistically significant gender-related differences in the advisors assessment of their customers' perceptions, thereby rejecting the null hypothesis. Roszkowski and Grable (2005) found that advisors, who themselves were not gender divided, assessed their customers differently – that is, their assessment depended on the gender of their customers. The present study shows that the gender of advisors also has an impact on the assessment of consumers of financial advice.

In this study, male advisors rated consumers' answers higher than did their female colleagues for all variables, with the exception of one variable (advisors' ratings of consumer financial literacy). This finding may be explained by the presence of an overconfidence bias, as suggested by Barber and Odean (2001), among others. Because the purpose of this study is to test the possibility of gender stereotyping by advisors, the task of finding explanations for these results is left to future research.

In line with the findings reported by Roszkowski and Grable (2005) on gender stereotypes, Stendardi *et al* (2006) argued that financial advisors should tailor their approach to the gender of the customer. The findings of the present study indicate that an inherent systemic risk is possibly associated with such an approach. Advisors and their employers in the financial services industry, as well as policymakers, should be aware of the possible association between advisor gender and gender stereotyping of clients. If advisors promote gender stereotypes, this behaviour results in their provision of gender-biased, gender-tailored advice to clients, which in turn can be counterproductive from an overall economic stability perspective. There is a need for more research on the topic, especially concerning the more general implications of advisors' possible impact on the financial capability of consumers and policymaking with the intention of consumer protection.

The results were also tested for the effects of consumer gender. A significant interaction effect was found for consumer financial literacy. As for the other tested dependent variables, no interaction effects were found between advisor gender and consumer gender; there was also no main effect for consumer gender. The finding that female and male advisors both scored female and male customers differently is interesting. It should stimulate more research on advisors' assessment of the financial literacy

and financial ability of consumers and the possible effects of the proposed gender-related differences in advisors' assessment of female and male consumers from a policy perspective. The ongoing discussion of the need for different programmes for financial education and the possible effects of these programmes should benefit from further investigation of the effects of not only consumer characteristics but also advisor traits. Dolan *et al* (2012) suggested that a shift in focus could help change consumer financial behaviour, which in turn could enhance financial capability. They argued that changing contexts could be more efficient than the more commonly used idea of trying to influence consumers' minds. This interesting idea can be further developed with more knowledge of the impact of financial advisors on consumer financial capability. Advisors' assessment of their customers is likely to influence the way they frame the information and the advice they give. This framing is the context of consumer financial education, and because it is produced by professionals, it can also be the subject of regulation. The results might indicate a need to educate advisors rather than consumers. If this is the case, these results would thus make an important contribution to the general discussion about the need for consumer financial education programmes. It may not be too far-fetched of an idea to suggest that the focus in the future will be on the education and authorisation of financial advisors as a way of promoting transparency and long-term sustainability of financial advisory services.

Note

1. This distribution mirrors the characteristics of the wider advisor population in Sweden, which is dominated by females. The Employers Association of The Swedish Banking Institutions and The Financial Sector Union of Sweden have agreed on post groupings in the BESTA statistics. According to their 2010 statistics, Sweden had 4851 financial advisors licensed to work with private investors, out of which 69 per cent were female and 31 per cent male.

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Appendix

Table 12.A1 The chosen attitudinal statements from the questionnaire

Qnr	Variable	English translation	(Wordings in Swedish)
30	AonC-WLMF	The customer can accept losing parts of their savings if the market they are investing in falls.	Kunden kan tänka sig att bli av med delar av sitt eventuella sparande om marknaden hon/han investerat i skulle gå ned.
33	AonC-RTOW	The customer considers it necessary to increase the amount of risk in the portfolio to get the possibility of higher returns.	Kunden anser att det är nödvändigt att öka risken i sitt sparande för att få möjlighet till högre avkastning.
11	AonC-SAT	My customer is satisfied with their financial advisor (me).	Min kund är nöjd med sin rådgivare (mig).
15	AonC-RAT	My customer finds me trustworthy.	Min kund upplever mig som trovärdig.
20	AonC-WIF	My customer usually follows the advice I give.	Min kund brukar följa de råd jag ger.
1	AonC-FINLIT	My customer has the knowledge to handle their personal finances adequately.	Min kund har kunskaper att hantera sin ekonomi på ett bra sätt.

13

Financial Literacy and Financial Literacy Programmes in Australia

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Introduction

Over the past two decades, interest in financial literacy has increased massively worldwide. One result has been a proliferation in the volume of research undertaken into financial literacy by government, industry and community organisations. At the same time, there has been on-going and burgeoning interest in financial literacy programmes by these same bodies, aimed at redressing some of the deficiencies in financial literacy they and others have found. Similar developments are evident in Australia, where regulators, industry associations, individual businesses (especially financial institutions), community groups, and not least, academic researchers, have all taken a keen interest in this important area.

One problem facing Australia's many financial literacy stakeholders is the sheer volume of the published and unpublished material available on the measurement and level of financial literacy for which no concise review currently exists. It is also difficult to attain a good understanding of the myriad programmes currently operating, particularly in terms of their target groups and programme objectives. Accordingly, the purpose

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of this article is twofold. First, review the existing findings on financial literacy in Australia, along with its purported determinants and potential impact on consumers and the marketing of financial services. The emphasis here is on describing where we have gained our knowledge of financial literacy in Australia.

Second, discuss programmes currently in place aimed at increasing the level of financial literacy across the population as a whole and in specific groups set in place by government, industry, community and workplace initiatives. The focus here is conveying to the reader the diversity of financial literacy programmes in place in Australia and the population groups targeted given the knowledge of financial literacy gained earlier. The article also provides a brief critique concerned with measuring, assessing, and understanding financial literacy and the models used for the systematic evaluation of financial literacy programmes. This helps to guide future research in this area.

Importantly, the purpose of this article is not to provide a literature review of academic research into Australian financial literacy. Its rather broader objective is to discuss the existing state of knowledge of financial literacy and financial literacy programmes, which in nearly all cases is available from government, industry and non-government organisation reports and websites, not published academic research. This provides a snapshot for financial literacy stakeholders (including policymakers, charities, industry and professional associations, trade unions, financial and non-financial firms, financial and consumer services advisors, schools and further education institutions and researchers) interested in better understanding the Australian financial literacy context as a necessary starting point for their own work. For this reason alone, the article is necessarily general, with all that entails.

The remainder of the article is divided into four sections. The first section briefly places financial literacy in Australia in context, in relation to both developments in comparable economies and within Australia. The second section discusses the various governmental, industry and other reports concerning the definition, measurement and level of financial literacy in Australia. The third section examines a sample of the financial literacy programmes currently in place. The article ends with some brief concluding comments.

The international context

Starting with the United States, the US Federal Reserve Board founded Jumpstart Coalition for Personal Financial Literacy (2013) has since the

early 2000s biannually surveyed the financial literacy of high-school students, and one response has been the proliferation of state legislation mandating financial literacy in school curricula. More recently, the US Senate Committee on Banking, Housing and Urban Affairs conducted hearings into the state of financial literacy and education and the US Department of Treasury (2012) created the Financial Literacy and Education Commission with a specific focus on improving national financial literacy.

Likewise, there has been on-going and burgeoning interest in financial literacy programmes by businesses in the United States, especially financial institutions. In evidence, Blanton (2011) identified in excess of 4000 websites providing financial education and financial decision tools! The Consumer Bankers Association's (2005) *Survey of Bank-Sponsored Financial Literacy Programs* irregularly assesses some of these programmes. In addition, it is also a participant in several key financial literacy initiatives. These include the *Credit Fairy* campaign helping consumers improve their credit scores, an *America Saves Week* aimed at improving knowledge of saving, *Hit the Books Running* focused at early planning for parents and college students lessen the burden of student debt, and the *HOPE NOW* and *Project Lifeline* campaign to increase financial literacy among possibly defaulting mortgage borrowers.

In the United Kingdom, as early as 2003 the Financial Services Authority called a summit of industry leaders and consumer activists to develop a strategy to advance consumer education, information and generic financial advice. This has manifested itself most notably in 2010 as the Consumer Financial Education Body (now The Money Advice Service), an independent body that promotes personal financial literacy. Several other longstanding financial literacy programmes also operate in the United Kingdom. For example, the Personal Finance Education Group (2013) aims to raise the competence of personal finance educators, whereas the Citizen's Advice Bureaux (2013) seeks to increase the level of financial knowledge in the broader community. Other financial literacy initiatives throughout the world include financial literacy programmes implemented by the Financial Consumer Agency of Canada (2013) and the Canadian Bankers Association's (2005) *Building a Better Understanding* programme and the New Zealand Retirement Commission (2013) and the *New Zealand Financial Literacy Programme* developed by Enterprise New Zealand Trust (2005).

These major government and industry initiatives, of course, do not include the countless financial literacy programmes initiated, sponsored and funded by hundreds of individual community groups and workplaces

in these countries, sometimes in partnership with government and/or industry associations. They also do not reflect the efforts by various inter-governmental bodies to promote financial literacy and coordinate national financial literacy programmes. These include, most notably, the World Bank (Xu and Zia, 2012) and the Organisation for Economic Cooperation and Development (OECD) (2005, 2012a,b), with both surveying existing national programmes, providing guidance on the direction national financial literacy strategies should develop in the future, and in the case of OECD (2012a,b), a pilot study comparing international financial literacy. It also includes the OECD (2013) in developing an international financial education knowledge gateway and coordinating inputs into school curricula and a consistent assessment framework through its Programme for International Student Assessment (PISA) (OECD, 2012a,b).

In Australia too, a number of government and industry reports have highlighted the need to better understand and improve financial literacy. The Australian Law Reform Commission's (2005) *Seen and Heard* report very early found that young people were ill informed about a wide range of consumer services. Since then, the ANZ's (2003, 2005, 2008, 2011) triennial *Survey of Adult Financial Literacy in Australia* has consistently shown that while most Australians have basic financial literacy, young consumers and those from low socioeconomic backgrounds were at a disadvantage in making informed decisions about money management. Similarly, the Australian Securities and Investments Commission's (ASIC) (2005) *Financial Literacy in Schools* report championed financial literacy programmes inside and outside of schools, while the Consumer and Financial Literacy Taskforce's (2004) *Australian Consumers and Money* provides a stocktake of initiatives by public, private and community sector bodies.

Other reports, of both government and non-government origin, relevant to our understanding of financial literacy in Australia include the Financial Literacy Foundation (FLF) (2007, 2008), National Australia Bank (NAB) (with Centre for Social Impact) (2011) and the Commonwealth Bank Foundation (CBF) (2004, 2006). There is also a small but rapidly growing body of academic research in this area including, among others, Garman *et al* (1999), Beal and Delpachitra (2003), Brown *et al* (2004), Marcolin and Abraham (2006), Worthington (2006, 2008), Cardak and Wilkins (2009), Fry *et al* (2008), Samy *et al* (2008), Gerrans *et al* (2009), Tennant *et al* (2009), Wagland and Taylor (2009), Croy *et al* (2010), Gallery *et al* (2011), Taylor and Wagland (2011), Sandlant (2011) and Bateman *et al* (2012).

Financial literacy in Australia

Definition

For the most part, the definition of financial literacy most commonly used in Australia is that employed in the triennial series of national adult financial literacy surveys conducted by the ANZ (2003, 2005, 2008, 2011) since 2003, where financial literacy is: 'The ability to make informed judgements and to take effective decisions regarding the use and management of money'. Derived from a UK report to the Natwest Group Charitable Trust (Schagen and Lines, 1996), this definition has been subsequently adopted by nearly all financial literacy reports in Australia, most notably ASIC (2011a,b) (and before then, its predecessor in the role, the Financial Literacy Foundation (FLF) (2007, 2008)), the regulatory body tasked with implementing the *National Financial Literacy Strategy*. Of course, there is much unsaid in this rather modest definition. For example, the ANZ surveys agreed that financial literacy was about people becoming confident decision makers in all aspects of their budgeting, spending and saving, but that measures of financial literacy should reflect individual circumstances, and were therefore relative. As such, knowledge was '… only to be tested against an individual's needs and circumstances rather against the entire array of financial products and services, some of which they will neither use nor need' (ANZ, 2003).

Likewise, ASIC (2011a,b) has more recently conceded that this definition acknowledges that financial literacy means more than just understanding how things work and that it therefore encompasses making good choices and applying them. In this sense, ASIC (2011a,b) argued that the concept of 'financial literacy' prevailing in Australia actually related more to the UK term 'financial capability' in terms of acting on knowledge gained, but 'financial literacy' as a term was now firmly embedded in policy and practice. Elsewhere in the reports relevant to financial literacy, its definition is consistent with that ultimately enshrined in the *National Financial Literacy Strategy* (see, for example, CBF (2004, 2006)), though often with some qualification. For example, the Australian Bankers' Association (ABA) (2013) pointed out that 'Financial literacy is not just about numeracy – even if we are good with numbers we might not be good at managing our money. Financial literacy is about people gaining a practical understanding of financial matters and the consequences of their own behaviours that will affect their financial well-being', while NAB (2011) like ASIC (2011a,b) recognised the parallels in the use of the term 'financial literacy' alongside 'financial

capability' in discussing demand-side factors affecting financial exclusion. Nonetheless, it is clear that the definition of financial literacy commonly used in Australia is mostly consistent with that commonly applied by inter-governmental bodies such as the World Bank and the OECD (2013).

Level and determinants

Three sets of large-scale surveys of financial literacy have been undertaken in Australia to date, two by financial institutions, the ANZ Bank (2003, 2005, 2008, 2011) and the Commonwealth Bank through the CBF (2004, 2006), and one by a Commonwealth government-funded agency, the FLF (2007, 2008) whose responsibilities subsequently shifted to ASIC in 2008.

Roy Morgan Research conducted Australia's first national survey of financial literacy on behalf of ANZ in 2003. This consisted of two parts: a telephone survey of 3548 adults alongside an in-depth survey of 202 adults consisting of a self-completion component and an interview. In general, the finding of this first ANZ survey were that persons with low levels of financial literacy were also characterised by low levels of educational attainment, income and employment, were frequently younger and mostly single, and possessed less than average levels of debt and savings. By the ANZ (2008) survey (now conducted by the Social Research Centre at the University of NSW), the results once again pointed to a strong relationship between financial literacy and individual socioeconomic and demographic characteristics. Reflecting this link with socioeconomic disadvantage, scores were also lower among the unemployed, low-level blue-collar occupations, those whose main source of income was a government benefit or allowance or with household incomes less than US$25 000 per annum, those who spoke a language other than English at home, and the Indigenous. Conversely, financial literacy scores were significantly higher for persons aged 35–59 years, males, those who had completed a university degree, high-level white-collar occupations, and those whose annual household income was at least $150 000 per annum.

The 2008 survey also commented on behaviours linked with better financial literacy, including the use of many and diverse information sources, obtaining advice from an accountant, tax specialist or financial planner, shopping around for alternate products and the use of online financial calculators (ANZ, 2008, p. 3). By the fourth and most-recent survey in 2011 of 3502 respondents (now again by Roy Morgan Research), financial literacy was now envisaged as consisting of five separate components: keeping track of finances, planning ahead, choosing

financial products, staying informed and financial control, with separate financial literacy indices calculated for each component. Although the results were consistent with earlier findings, they also evidenced the rapid uptake of electronic banking and access to internet-based sources of financial information.

Soon after the first ANZ survey, the CBF (2004) conducted a telephone survey of 5000 Australians in partnership with Eureka Strategic Research and the Centre of Policy Studies at Monash University. The results found that the 10 per cent of the population with the lowest financial literacy were more likely aged between 16 and 20 years, male, unemployed or students, and have lower levels of education and personal and household income. A subsequent survey, CBF (2006), required 50 000 Year 9/10 students from 500 schools across Australia to complete an objective assessment task comprising 48 multiple-choice questions related to everyday financial situations. The findings indicated that no more than 50 per cent of students were able to understand any single basic financial literacy concept, mostly comprising matters relating to the use of bank deposits and credit cards.

The final major source of information on financial literacy in Australia is from a survey of 7500 Australians aged 12–75 years conducted by the FLF (2007). This telephone survey obtained the responses to a series of questions regarding attitudes to money and money management behaviour across 7 topics (budgeting, saving, investing, credit and debt, planning and retirement, protecting money, and information and advice) and 13 corresponding money management issues. This survey identified that there was not one but many possible paths to financially literate behaviour and better financial outcomes, representing different life experiences, abilities, attitudes, beliefs and behaviours. In FLF (2008), the responses to this survey were re-examined to more closely focus attention on the attitudes and behaviours of the subsample of 4138 women when it came to using and managing money.

Apart from these large-scale national surveys of financial literacy in the Australian population, a number of smaller surveys have also thrown useful light on financial literacy in Australia. In very early work, Beal and Delpachitra (2003) surveyed first-year students across a number of faculties at the University of Southern Queensland and tested skills and knowledge in basic financial concepts, financial markets and instruments, planning, analysis and decision making, and insurance. Later, Worthington (2006) used the underlying data in the 2003 ANZ Survey to address more closely the determinants of financial literacy in a multivariate framework. Factors examined include gender, age, ethnicity, occupation, education, income, savings and debt, with the

results indicating higher financial literacy for persons aged between 50 and 60 years, professionals, business and farm owners, and university/college graduates. Literacy was found to be lowest for the unemployed, females, and those from a non-English speaking background with a low level of education. A similar approach was later applied in Worthington (2008) to specific financial knowledge relating to superannuation (private retirement income) using a subset of 2516 superannuation fund members, this time from the 2005 ANZ Survey.

In other work, Tennant *et al* (2009) used data collected from 1265 individuals who sought substantive financial counselling assistance from Anglicare Victoria in Gippsland, Victoria between 2001 and 2004 as a means to establish a link between financial literacy and 'financial hardship'. University students again provided the sample when Wagland and Taylor (2009) surveyed 165 undergraduate students at the University of Western Sydney in 2004. The results here indicated that 74 per cent of respondents were able to answer correctly most questions displaying a reasonable level of general personal financial knowledge. In a final Australian survey, Gerrans *et al* (2009) surveyed 48 Indigenous respondents in Perth. The results suggested that some areas of financial knowledge were significantly weaker for this population subgroup.

Critical analysis

To varying degrees, these studies have made a positive contribution to our understanding of the level and determinants of financial literacy in Australia. First, most Australians have reasonable levels of financial literacy and mostly feel confident about their knowledge of financial issues. Second, nearly all Australians appear to know and understand simple day-to-day money management concepts such as budgeting, credit, savings and debt, but struggle with more complex concepts such as investments, superannuation and saving for retirement. Third, most Australians appear open to the benefits of financial education, and rely on a wide range of information and advice services when researching financial decisions and/or trying to gain financial knowledge. These include informal (for example, family and friends, the media) and formal (for example, financial advisers, accountants and providers) sources. Finally, a large number of factors appear to influence financial literacy, including attitudes and beliefs about money, interest, confidence and engagement in financial matters and socioeconomic and demographic characteristics (for example, age, gender, education, income and ethnicity).

A first major weakness is that surveys include only questions about financial products and services that respondents currently use or

very basic financial products and services. Although this ensures an appropriate context, it ignores the fact that consumers should also be informed about products and services in which they are yet to partake. Marcolin and Abraham (2006) argue that this is especially noticeable when comparing the findings of the ANZ surveys with the roughly coterminous CBF (2004), with the former exhibiting more positive results, overall resulting in the appearance of higher levels of financial literacy among the Australian population.

A second major weakness is that most surveys use subjective assessments, which rely on respondent's perceptions, attitudes, self-reported behaviour and self-assessed level of financial knowledge. They therefore ignore objective assessments, which measure and test people's understanding of financial terms through, say, 'multiple-choice', 'true/false' or 'short-answer' questions. Nonetheless, even these sorts of questions do not very often link with the apparent ability to make good financial decisions as they merely test the level of financial knowledge (ASIC, 2011a,b). In fact, the most accurate test of financial literacy would be in terms of the superiority of *ex post* financial decision making, not the hypothesised *ex ante* ability to make good financial decisions.

As to the implications for the marketing of financial services, it is clear that financial literacy affects not only how consumers participate, but also whether they engage particular services in the first instance. For example, while evidence suggests that persons with low levels of financial literacy use some types of services relatively unknown among those with higher levels of financial literacy, such as payday lending, they are also likely to engage in risky or less wealth-optimising behaviour in products or services commonly found across all levels of literacy. These including paying only the minimum payment on credit card balances, cash advances from credit cards, inadequate superannuation fund management and poor choices relating to mortgage products. The major challenge for those concerned with the marketing of financial services is taking into account the great heterogeneity of consumers as it relates to financial literacy and recognise the inherent limitations of the concept of financial literacy itself.

Australian financial literacy programmes

Policy framework

The Commonwealth government is a major programme funder of financial literacy programmes in Australia. This accords well with the principal role of ASIC (2011b, p. 8) as Australia's consumer protection

regulator for financial services, bring with it '… regulatory tools to the task of improving Australians' financial well-being from communication, education and guidance through to *enforcement action where required*' (emphasis added).

In 2004, the Australian Government established a National Consumer and Financial Literacy Taskforce that recommended the establishment of the Financial Literacy Foundation in 2005, which was subsequently responsible for two of the major national surveys into Australian financial literacy (FLF, 2007, 2008). In 2008, the functions of this foundation were transferred to ASIC, which after being informed by two of its own research reports, 'Financial Literacy in Schools' (ASIC, 2005) and 'Financial Literacy and Behavioural Change' (ASIC, 2011a), duly set out its National Financial Literacy Strategy in ASIC (2011b).

In the National Financial Literacy Strategy, ASIC (2011b, p. 4) argued that financial literacy was a necessary and increasingly important skill, that there were disparities across the community, and that its improvement could improve economic performance and social inclusion and drive competition in the financial services sector. With this in mind, ASIC delineated four core elements of its strategy: (i) educational pathways to build financial literacy; (ii) provision of trusted and independent information, tools and support; (iii) recognition of the limits of education and information; and (iv) working in partnership and promoting best practice (ASIC, 2011b).

Government programmes

In this article, we define 'government' financial literacy programmes as those principally financed, administered and delivered by government departments or agencies. As discussed, ASIC is the regulatory body principally tasked with implementing the National Financial Literacy Strategy. At present, it does this directly through its *MoneySmart* website, which replaced its earlier Financial Information Delivered Online (*FIDO*) and *Understanding Money* websites and a *MoneySmart Teaching* website. MoneySmart (2013) provides information, tools and calculators, printed guides and a helpline to assist consumers and investors in their personal finances, with separate pages targeting 'under 25s', 'over 55s', families, women and the Indigenous.

Other campaign initiatives of note are: *MoneySmart Week*, a series of money information events in partnership with business, government and community sector organisations (including achievements awards for business, government and community initiatives in financial literacy programmes); a September 2011 *Mortgage Health Campaign* aimed

at encouraging people to take action when experiencing mortgage stress; an October 2011 *Unclaimed Money Campaign* concerned with encouraging the search for lost money in ASIC's lost database of bank accounts, shares and life insurance policies; and a March 2012 *Culturally and Linguistically Diverse Communities Campaign* aimed at distributing money management kits in hardcopy to new Australians via settlement service providers and online in 26 languages. To date, three surveys have been used to evaluate the usefulness of the primary *MoneySmart* website, with the most-recent results indicating that 78 per cent of visitors found the site useful with another 90 per cent responding that they had taken some form of positive financial action because of visiting the site (ASIC, 2012).

A secondary *MoneySmart Teaching* website provides professional learning resources to help both teachers and teacher educators to integrate financial literacy into secondary and further education teaching and learning programmes. In addition, MoneySmart Teaching (2013) outlines an additional dimension into the government's role in financial literacy through its input in the *Australian Curriculum* and its on-going development by the Australian Curriculum, Assessment, and Reporting Authority (ACARA) (2013). ASIC's input into the new *Australian Curriculum* for Kindergarten to Year has professedly obtained the key result that in the new national mathematics curriculum there will be a Money and Financial Mathematics sub-strand aimed at providing students with the mathematical knowledge and skills that underpin consumer and financial literacy. The supposed influence of ASIC is also apparent in the three current core learning areas (English, science and history) (ACARA, 2013a) and in the draft economics and business curriculum (ACARA, 2013b, p. 6).

Apart from ASIC, a number of other Australian government departments and agencies also provide financial literacy-related programmes. For example, the Department of Human Services' (2013) *Financial Information Service* provides free education and information through seminars, by telephone or in person to enable informed decisions about investment and financial issues. Several other financial literacy programmes are targeted specifically at the Indigenous. Elsewhere, the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) (2013c) *Indigenous Home Ownership* programme is aimed at developing financial skills in conjunction with a programme concerned with encouraging home ownership for those able to obtain a long-term transferable lease on indigenous land and that can service a home loan. Finally, FaHCSIA's (2013a,b) *Family Income Management*

and *Financial Management Programme* respectively provide information and ongoing support to help the Indigenous manage money, the latter concerned exclusively with those currently experiencing personal financial difficulties.

Industry programmes

We define 'industry' financial literacy programmes as those principally financed and provided by businesses, business foundations and business associations to customers and other persons. Of these, perhaps the most known is *Saver Plus*, an initiative of the ANZ and Brotherhood of St. Laurence, funded by ANZ and FaHCSIA and delivered in partnership with The Smith Family, The Benevolent Society and Berry Street. In essence, *Saver Plus* is a combined matched savings and financial education programme, established for assisting individuals on low incomes to develop a long-term savings habit (for the purpose of education expenses) and reach a savings goal.

One reason *Saver Plus* is so well known is that it is one of the few programmes subject to rigorous evaluation. For the most part, these reports on programme outcomes, including Fry *et al* (2008), Brotherhood of St. Laurence (2011), Russell *et al* (2011), reported not only positive improvements in saving behaviour, but also in terms of accessing information on superannuation and investments, debt management and personal well-being and social connectedness. One of its chief funders, the ANZ, is also involved in conjunction with FacHSIA with *MoneyBusiness*, a kit and course used to deliver money management education in remote Indigenous communities, and some regional and urban areas (ANZ, 2013).

Two other banks are involved in general financial literacy programmes: the Commonwealth Bank through *StartSmart* (2013) and Westpac through the Davidson Institute (2013) in *Financial First Steps*. Launched in 2007, *StartSmart* initially was aimed towards teaching secondary students about financial literacy through experiences relevant to their daily lives, including skills in earning, saving, spending and investing. This was extended to primary schools in 2010, employing a number of characters such as Captain SuperCents, Coach Cash and Gobbles the Wallet Monster, to educate young children about good spending habits. Finally, in February 2012, *StartSmart* launched *Pathways*, a workshop-based programme aimed at the enhancing financial awareness among 18–25 year olds. In contrast, *Financial First Steps* includes short face-to-face courses, accredited training courses, free online learning and free local seminars aimed at a variety of groups,

most notably Westpac employees, but also other employees and high-January 2013, two anonymous reviewers, school students. Most other Australian financial institutions also host and provide information relating to financial education, literacy and inclusion, including the Bendigo Bank, the Bank of Queensland, Citibank Australia, HSBC and NAB. Finally, the ABA's (2013) *Broadening Financial Understanding* programme ostensibly works alongside and complements the programmes of its member banks.

Community programmes

In this article, we define 'community' financial literacy programmes as those including the participation of a community group, sometimes in a funding or delivery partnership with a government department and/or business. These include the Good Shepherd and Family Service (2013) *Dollars n' Sense* programme and the provision of financial counselling alongside it and its co-partner NAB's *No Interest Loans* (NILS) and *StepUp* community-based programmes aimed at providing interest-free and low interest loans to individuals or families on low incomes. It also includes *Makingcents* (2013), a joint initiative by Citigroup Australia and YWCA NSW aimed at educating parents and teachers about developing good financial literacy skills in themselves and in their children.

Another community-based initiative includes the Financial Basics Foundation, a body established to help educate secondary students about responsible financial management practices launched in February 2002 in cooperation with the Bank of Queensland and Big Sky Credit Union. To date, Financial Basics has two programmes relevant to financial literacy education. The first of these, *Operation Financial Literacy*, is a free 10-module teaching resource offered to schools. Introduced following a pilot programme in 2002, and written by Australian business teachers, the modules include topics on financial planning, budgeting, credit and borrowing, financial protection and insurance, and saving and investing. A second initiative is *ESSI Money*, an online financial literacy game that enables participants to achieve an understanding of the basic concepts surrounding financial management, in the areas of Earning, Saving, Spending, and Investing (ESSI) (Financial Basics Foundation, 2013).

A final example of a community-based financial literacy programme is that promoted by 10thousandgirl (2013), a not-for-profit initiative of a group of young Sydney women that addresses the importance and long-term benefit of women having a financial plan and understanding finance basics through its *Personal Finance Program*. This is an interactive

programme aimed at delivering the principles of personal finance and investing through a 12-module course delivered through peer-run GIGs (*Girl Investment Groups*).

Workplace programmes

We define 'workplace' financial literacy programmes as those principally provided by businesses and other workplaces for their employees. Of these, we identify three upon which to elaborate: the Australian Defence Force's (ADF) *Financial Services Consumer Council* (2013), the WA Department of Education's *Into Your Comfort Zone* and Flight Centre's *Moneywise Global*. First, the Financial Services Consumer Council is an independent body concerned with developing good financial practices in ADF employees and their families both during and after their military career through a series of seminars, online guides and calculators. Of particular note is that this programme earned a Highly Commended Award in the Workplaces category in the 2012 ASIC *MoneySmart Week*.

A second example of a workplace financial literacy programme is *Into Your Comfort Zone* designed by the WA Department of Education in partnership with the WA Government Employees Superannuation Board. This programme concerns educating teachers on complex financial concepts with the aims of retaining experienced teachers by introducing them to transition-to-retirement strategies and reinforcing flexible working policies, increasing employee understanding of wealth creation strategies to improve their retirement outcome, and empowering staff to make better financial decisions. A final example of a workplace financial literacy programme is Moneywise Global (2013), a 1994 initiative of travel agency Flight Centre aimed at providing financial planning services for its employees, but also providing information on investing, superannuation, insurance, debt management, social security and retirement.

Critical analysis

It is first notable that many of the financial literacy programmes in Australia appear at least notionally consistent with the National Financial Literacy Strategy. Second, many of these programmes represent collaborative arrangements, often comprising one or more community groups working in association with a financial institution as a funding provider, along with input from a government or other body in terms of educational content and delivery. This is clearly an attractive model, but only time will tell if these programmes continue or are able to survive the withdrawal of one or more of the partner organisations. Third,

while many government and industry programmes target the general population, many others are concerned exclusively with groups commonly identified as having relatively low levels of financial literacy. Finally, it is common to see financial literacy programmes delivered in conjunction with financial assistance and other programmes aimed at enhancing financial independence in these target groups.

Even so, it is clear that the implementation of these financial literacy programmes, although well meaning, seldom include very clearly defined objectives. It is also often unclear about who is demanding outcomes and against which criteria these will be assessed. Only a few appear to have been subject to rigorous post-programme review and evaluation. This is especially the case for the large web-based financial information and training sites where much information is available, but there is apparently little attempt to track the use of this information and the outcomes in terms of enhanced financial literacy. The question also presents itself whether the provision of, for example, fact sheets, and calculators actually represents a financial literacy programme. Finally, it is also clear that many of the financial literacy programmes supplement other social welfare initiatives, and it is not apparent which part is responsible for the improvement if any in financial literacy.

Overall, the research has repeatedly shown us that efforts to improve financial literacy have proven elusive. However, unfortunately, the diversity of 'financial literacy programmes' in place do little to reassure us that they have any sort of consistency of purpose and meet appropriate educational standards and are not merely a different sort of marketing or promotional exercise in the private sector or in the government sector as a means of improving political standing. Is the information in these programmes accurate and independent? What is the appropriate training for financial education providers? Should there be quality standards and codes of conduct for providers of freely accessible financial education programmes? Further, what new if any solutions are on the horizon for improving financial education and literacy? Likewise, should we regulate financial education and literacy programmes? Finally, is it feasible at all to evaluate universal changes in school curricula aimed at improving financial literacy where the outcomes will only be realised over very long periods, even if this did matter to government stakeholders? Clearly, much remains unknown.

As to the implications for financial services marketing, it is clear that financial literacy programmes are useful for financial institutions dealing with their stakeholders, including current and potential customers.

These need to consider whether they target specific groups (children, retirees and the elderly, the Indigenous and so on) or the population, address particular themes (budgeting, investment, savings and so on) or a combination of themes. They also need to decide whether they team with a community and/or government body for this purpose, and whether they deliver education as a self-paced or structured programme, and whether they deliver in person, in hardcopy or through the web.

Conclusion

Scarcely a decade ago, almost nothing was known about financial literacy in Australia. Now more than half a dozen major reports and a score of smaller research projects have been completed, all of which have identified the pressing need for improvements in financial literacy for the Australian population as whole and for several population subgroups, particularly women, the Indigenous, those from non-English speaking backgrounds, low-income workers, the unemployed and the young. In response, a large number of government departments and agencies, businesses and business associations, community groups and workplaces have designed and funded financial literacy programmes, many targeted at these financially less literate groups. At the same time, a National Financial Literacy Strategy has been created with a single financial regulator given responsibility for its implementation. Feedback on the National Financial Literacy Strategy coordinated by ASIC (2013) will certainly provide insight into this area.

With the many and varied financial literacy stakeholders in mind, this article reviewed the existing findings on financial literacy in Australia, along with its purported determinants and the potential impact on consumers and the marketing of financial services. The article also sampled many of the financial literacy programmes set in place by government, industry, community and workplace initiatives. Clearly, there is much work required of the many and diverse financial literacy stakeholders in both areas. In terms of the measurement of financial literacy, there is a need for on-going research, especially in terms of attempting to agree upon a suitable framework and method for its assessment. As for financial literacy programmes, these continue to grow and expand and a periodic review would help stakeholders understand what is being done and not being done in this important area. However, once again, there are some limitations in this area, and they likewise indicate future opportunities for research, particularly as they relate to optimal programme design and evaluation.

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Assessment of Behavioural Outcomes of Financial Education Workshops on Financial Behaviour of the Participants: An Experimental Study

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Introduction

Today's financial markets seek the attention of governments to address two key issues: financial inclusion and financial literacy. Financial inclusion focuses on supply aspects, that is, serving the unserved and/or the underserved, whereas financial literacy deals with the demand aspect of empowering people on the subject of personal finance. Enhancing financial literacy may play a critical role in equipping consumers with relevant information, fundamental knowledge and adequate skills to

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evaluate their savings and investment options, which, in turn, enable them to understand the implications of alternative decisions that may greatly improve their financial behaviour.

Beal and Delpachitra (2003) observed that the need for financial skills has grown rapidly over the last decade because financial markets have been deregulated and credit has become easier to obtain as financial institutions compete with others for market share, leading to an increase in spending and a rapid rise in both personal and household debt levels. The growing complexity of financial products, coupled with financial innovations, and the increasing transfer of financial risks to households have put enormous pressure and responsibilities on households for their future financial security. The result is a myriad of products often with incomprehensible features and services, leaving many people ill-equipped to cope with the sophisticated financial needs.

Consequently, economies around the world increasingly consider financial literacy as a key pillar for the development of financial systems. In the last decade, financial literacy has gained the attention of policymakers, regulators, governments and several other organizations. Substantial efforts have been made and resources have been developed by the financial education providers to promote financial literacy through a multitude of financial education programmes. The crucial challenge faced by financial education providers is how to ensure that knowledge transferred through financial education programmes translates into increased financial literacy and subsequent financial behaviour.

In India, policymakers have recognized financial literacy as an essential life skill. Developing and promoting financial literacy through financial education has become an important policy priority to complement financial consumer protection, inclusion and prudential regulation. The national financial education efforts vary according to set-up, audience and subject matter. Several organizations jointly work to deliver financial education including regulatory authorities, banks, NGOs, financial planners, financial services institutions, self-regulatory organizations, employers and so on. In India, the government has set up the Investors Education and Protection Fund (IEPF) with the objective to support activities relating to investor education, awareness and protection. The role of IEPF is to educate, empower and protect investors by equipping them with information, fundamental knowledge and skills to evaluate their saving/investment/credit options and enabling them to understand the implications of alternative financial decisions.

The efforts made in designing and delivering the financial education programmes often take place without giving due consideration to the

effectiveness of these efforts or the integration of the evaluation component as part of the design and delivery of programmes, and research into effectiveness is lacking. This point has also been noted by Lusardi (2011), who maintains that the effect of financial education programmes has not yet been studied specifically. She argues that the evaluation of such programmes is important to assess the extent to which the programme objectives are fulfilled, that is, whether the subject content has improved the information-processing skill, financial knowledge, financial literacy and ultimate financial behaviour of participants, and assess where existing programmes are failing to capture the attention of a community, and how to make it more effective in terms of subject content and delivery method. Potentially important implications of programme evaluation have not been examined fully in financial and economic behavioural studies (Loix *et al*, 2005). Hence, there is an opportunity to study the effect of financial education programmes on the financial behaviour of programme participants.

Set against this context, the present study makes an attempt to assess the behavioural outcomes of financial education workshops on financial behaviour of participants. Financial behaviour can be defined as any human behaviour that is relevant to money management; common financial behaviour include cash, credit, saving and investment behaviours (Xiao, 2008). The financial behaviours included in this study are cash flow management, saving behaviour, investment behaviour and credit behaviour. Measuring these different domains of financial behaviour is important because each domain can have a serious impact on family life (Dew and Xiao, 2010).

The article continues with a review of the literature, presentation of research questions, outline of methodology and presentation and discussion of results of the empirical study. The article concludes with a discussion of the academic and practical implications of the study, and also provides directions for further research.

Review of literature

The Financial Literacy and Education Commission (2006) identified that the lack of personal financial knowledge is a major barrier to an individual's sound financial practices. According to Sharma and Jariwala (2011), 'financial illiteracy or low levels of financial literacy results in a lack of healthy financial ways of thinking, lack of necessary financial knowledge and difficulties in applying financial knowledge … which results in the misallocation of private wealth, that may cause social

decline and increase in public expenditure in the form of social security. Absence of this knowledge and skill pose a variety of risks to individuals, society and economy as a whole' (p. 2).

Collins (2007) and Carswell (2009) note that developed financial skills are necessary for effective money management. The objective of financial education should be to raise financial literacy levels by imparting new knowledge, skills and attitudes that can bring about changes in financial behaviour. It is also a tool for financial inclusion, enabling people to take greater advantage of the financial services available to them. The financial literacy education is more important especially with the current economic hard times, as research has reported that ability to manage money effectively is the main determinant of financial behaviour (Joo, 2008) and this financial behaviour reflects a person's economic well-being (Jeries and Allen, 1986).

Although Mandell (2009) acknowledges that financial behaviour seems to be positively affected by financial literacy, he argues that the long-term effects of financial education on financial behaviour are less certain. Studies in behavioural economics suggest that financial behaviour is significantly related to level of education. Moreover, in order to bring about the desired changes in behaviour, education depends on collection of information, skill building and motivation at the right time. Several studies suggest that financial literacy education not only enhances financial literacy but also financial behaviour.

Hogarth *et al* (2003) explored patterns of financial behaviours (such as cash flow management, saving and investing) and the characteristics and learning preferences of households exhibiting these patterns. The study confirmed positive and significant correlations between knowledge and behaviour across the range of personal finance activities and concluded that increase in knowledge and experience leads to improvements in financial behaviours, in particular self-beneficial financial behaviour (Hilgert *et al*, 2003). Lyons *et al* (2006) investigated the impact of financial education on behaviour change among low-income populations and concluded that participants' prior level of financial experience is more important than the amount of education received, and that financial management education has the greatest impact on those behaviours that can be readily influenced in the short term.

Lusardi (2004) found that retirement seminars do affect wealth holdings. Estimated effects were sizable for the least wealthy, for whom attending seminars appears to increase financial wealth. Furthermore, seminars affect not only private wealth but also pensions and social security wealth. Clark and D'Ambrosio (2003) found that financial education

seminars resulted in participants changing their retirement age goals and revising their desired level of retirement income.

DeVaney *et al* (1996) examined changes in the pattern of cash flow and credit use 3 months after participants completed a series of women's financial information workshops. The results found that participants limited the number or use of the credit cards after the workshop and the participants began to save regularly or increased regular saving. Moore (2003) found that less financially literate consumers tended to make less intelligent mortgage product choices.

Garman *et al* (1999) found that the individuals who participated in financial education programmes not only made 'better financial decisions since attending the workshops' but also they were overall more 'confident in making investment decisions' (p. 82). Bernheim *et al* (2001) concluded that mandates of financial education curriculum have increased the exposure to financial education, and the financial education was associated with higher savings rates and higher net worth. They concluded that education may be a powerful tool for stimulating personal saving.

Lusardi and Mitchell (2007) showed that households with higher levels of financial literacy are more likely to plan for retirement, and that the planners arrive at retirement with substantially more assets than non-planners. Other research links higher levels of financial literacy to more responsible financial behaviour, such as writing fewer bounced cheques, and paying lower interest rates on mortgages, among others (Mandell, 2007). Lusardi (2008) noted that low literacy and lack of financial information affect the ability to save and to secure a comfortable retirement; ignorance about basic financial concepts can be linked to lack of retirement planning and lack of wealth. van Rooij *et al* (2007) and Kimball and Shumway (2007) found that financially sophisticated households are more likely to participate in the stock market.

A theory based on family management systems provides theoretical support for this study. The important components of this systems theory are inputs, throughputs and outputs (Deacon and Firebaugh, 1988). In family systems, the demands and resources are entered into the managerial subsystem as inputs. The activities, through which families clarify their demands and assess their resources to attain their goals, are known as throughputs. Then a particular sequence of actions to achieve the goals is developed and a plan is implemented, known as an outputs. Managerial subsystems comprise the system's throughput or transformation process. Consumer economists conventionally define managerial subsystems as money management practices. For this

study, a managerial system is defined as a set of behaviours performed – specifically the planning, implementation and evaluation involved – in the areas of cash, credit, saving and investments. Researchers suggest that inputs (that is, financial education) can directly affect the managerial subsystem (management of money) by bypassing the personal subsystem, or can affect management through its relationship with the personal subsystem (financial behaviour).

The above discussion suggests that financial education enhances the financial knowledge and financial literacy of an individual, which may play a critical role in equipping consumers with the information, fundamental knowledge, and skills to evaluate their savings and investment options and enables them to understand the implications of alternative financial decisions and hence leads to a positive financial behaviour. Accordingly, the key research question of this research is: Do financial education workshops have a positive behavioural effect on financial behaviour, specifically in relation to cash flow management, savings behaviour, investment behaviour and credit behaviour?

Methodology

The present study was conducted in the state of Gujarat, which is one of the progressive states of India. According to the population census of India (Government of India, 2011), the literacy rate in Gujarat shows an upward trend and is 79.31 per cent. Of that, male literacy stands at 87.23 per cent, whereas female literacy is at 70.73 per cent. In 2001, the literacy rate in Gujarat stood at 69.14 per cent of which males and females were 78.49 per cent and 57.80 per cent literate, respectively (Government of Gujarat, 2011, p.30).

The women from this region are basically homemakers, who are engaged in the daily family duties. The males take care of all the household personal finances. Due to the prevalence of a male-dominated tradition in the region, women voluntarily exclude themselves from actively participating in the household financial management.

There is evidence that women are less financially literate (Beal and Delpachtra, 2003; Lusardi and Mitchell, 2009), less confident (Clark-Murphy and Gerrans, 2002; Taylor, 2003) and less knowledgeable (Chen and Volpe, 1998) than men on the topics of personal finance. Males generally exhibit more confidence in dealing with financial affairs (Taylor, 2003), whereas 'women are more conservative in their investment practices' (Bajtelsmit and Bernasek, 1996). Thus, what women may be lacking is a firm financial education that may give them the

tools and the confidence to continue to build the wealth they need to adequately support themselves, their families and their community.

Thus, the objective of the workshop series was to improve financial behaviour of homemakers that is normally associated with general economic affairs, that includes cash flow management, credit, saving and investment behaviours. The financial education workshop series was designed to help homemakers obtain financial education that may help them improve their financial behaviour by identifying their financial opportunities and consequences.

The population of the study was households with the sample comprising homemakers. The NGOs operational in the Mehsana district in the state of Gujarat were contacted to carry out this research. Shree Swastik Mahila Vikas Foundation, one of the active NGOs in this region gave the researchers permission to carry out the research. This foundation works for the social and economic upliftment of women in the district of Mehsana.

To overcome the potential bias of overestimation in the behavioural outcome of financial education workshops incurred due to self-selection of participants who chose to attend the programme, the participants (homemakers) were selected randomly and were invited to attend a financial education workshop series. Out of the total members of this foundation, a representative sample of 300 homemakers was randomly selected for this study and individuals were invited to attend a financial education workshop series that ran from November 2012 to December 2012, in the rural and urban areas of Mehsana District in the state of Gujarat.

The objective of the workshop series was to educate homemakers to improve financial literacy by providing them with the knowledge, aptitude and skills, which are necessary to become enlightened and informed consumers of financial services and manage their finances effectively. The workshop series consisted of three workshops that cover a number of topics on personal finance, including: (i) prioritization of financial needs and spending choices; (ii) basics of budgeting and its implementation; (iii) planning expenditures; (iv) S.M.A.R.T. goal setting; (v) saving and investing; (vi) the concept of inflation and its effect on investment; (vii) risk and return trade-off; (viii) power of compounding; (ix) choosing the right investment avenue; (x) diversification and asset-allocation strategy; (xi) savings and investment-related products; (xii) need for risk cover and types of insurance; (xiii) understanding of credit, handling of credit problems; (xiv) managing a bank account; (xv) retirement planning; (xvi) identification of ponzi

schemes; (xvii) investor protection and grievances redressal mechanism and taking consumer action.

Each workshop was held for the duration of approximately 90 min. The language of delivery was Gujarati, which is a regional language of this region and a principal language prevalent in the state of Gujarat. The financial education material developed by the Securities and Exchange Board of India and Reserve Bank of India was distributed to the participants as an incentive. The training was provided by a certified trainer for financial education as certified by the national authority who works as a resource person for promoting financial literacy for the authority.

The data reported in this article was collected as a part of the larger study designed to investigate the impact of financial education workshops recognized at the national level on the financial behaviour of workshop participants. To evaluate the financial education programmes, O'Connell (2009) proposes a new version of a five-tier framework. He suggests that while evaluating the financial education programmes, the programme needs, accountability, fine-tuning, micro- and macro impacts of the programmes are to be assessed. Measuring the behavioural outcome of the programme comes under the micro impact as suggested by O'Connell (2009). He further adds that this behavioural outcome is measured by follow-up survey, alternative assessment, focus-group interview and administrative records.

The scope of this study is limited to evaluating the behavioural outcomes of the financial education workshop series. The behavioural outcomes are defined as changes in the behaviour normally associated with general economic affairs. These common financial behaviours include cash-flow management, credit, saving and investment behaviours. With regard to impact evaluation of financial education programmes, Lusardi (2011) notes that these behaviour changes can be measured in months or even in years after a programme. She also adds that one way to assess the impact of the programme on behaviour is follow-up surveys that are conducted at a determinate amount of time after a programme.

An informal experimental research design was used. Kothari (2009) defines informal experimental research design as 'before-and-after without control design' noting that 'in such a design a single test group or area is selected and the dependent variable is measured before the introduction of the treatment. The treatment is then introduced and the dependent variable is measured again after the treatment has been introduced. The effect of the treatment would be equal to the level of the phenomenon after the treatment minus the level of phenomenon

before the treatment' (p. 41). A pre- and follow-up survey method was used. Before the workshop started, the participants filled out pre-surveys. The post-survey data collection was conducted 3 months after completion of the workshops with the same data-collection tool.

The survey instrument gathered data on geographical area of the participant, age, education, stage of family life cycle and household monthly income. The financial behavioural scale, developed by Hogarth *et al* (2002), was used to measure financial behaviour. The financial behaviour index consisted of a 22-item scale on a 5-point scale: Never = 1, Seldom = 2, Sometimes = 3, Often = 4 and Always = 5. The scale was translated into Gujarati. The translated version of the scale was sent to reviewers who are subject experts in the field of Gujarati language. As per their suggestions, some of the basic words and sentences were modified, keeping in mind that the ultimate crux of the financial behaviour variable (to be studied) would not be changed. The financial behaviour variables are divided into cash flow management, saving, investment and credit behaviour.

In the pre-survey, participants were asked to fill out the questionnaire when they were invited to attend the financial education workshop series for the very first time. The follow-up survey was administrated after 3 months of the completion of the workshop series. For the follow-up survey, participants were contacted and were given a physical copy of the questionnaire to complete. After a week, the completed questionnaires were collected by the researcher.

The final sample size consisted of 300 respondents. Approximately, 63.3 per cent of respondents were from urban areas ($n = 190$) and 36.7 per cent from rural area ($n = 110$). Thirty-six per cent were in age group 18–25 years ($n = 108$) compared with 30.7 per cent in age group 26–35 years ($n = 92$) and 26.3 per cent and 7 per cent, respectively, in age groups 36–45 years ($n = 79$) and 46–55 years ($n = 21$). In terms of education levels of respondents, 20 per cent have not received education ($n = 60$), 20.7 per cent have received primary education ($n = 62$), 27.7 per cent secondary education ($n = 83$), 20.3 per cent higher secondary education ($n = 61$), 3.3 per cent have completed a diploma course ($n = 10$) and 8.0 per cent were graduates ($n = 24$). In terms of income, 62.3 per cent ($n = 187$) participants have a household monthly income of less than Rs. 5000; 21.3 per cent ($n = 64$) have monthly incomes ranging between Rs. 5001 and Rs. 10 000; 12.3 per cent ($n = 37$) have monthly incomes ranging between Rs. 10 001 and Rs. 15 000; 2.7 per cent ($n = 8$) have monthly incomes ranging between Rs. 15 000 and Rs. 20 000; and only 1.3 per cent ($n = 4$) have a household monthly income of more than Rs. 25 000. With regard to stage of family life cycle, 27.3 per cent ($n = 82$) are young

Table 14.1 Respondents' profile

Variables	Categories	Frequency	Percentage
Area	Urban	190	63.3
	Rural	110	36.7
Age group	18–25 years	108	36.0
	26–35 years	92	30.7
	36–45 years	79	26.3
	46–55 years	21	7.0
Education	No education	60	20
	Primary	62	20.7
	Secondary	83	27.7
	Higher secondary	61	20.3
	Diploma	10	3.3
	Graduation	24	8.0
Household monthly income (in Rs.)	Rs. 5000 and less	187	62.3
	Rs. 5001–Rs. 10 000	64	21.3
	Rs. 10 001–Rs. 15 000	37	12.3
	Rs. 15 001–Rs. 20 000	8	2.7
	Rs. 20 001 and above	4	1.3
Stage of family life cycle	Young single	82	27.3
	Young married without children	30	10.0
	Married with children	168	56.0
	Older married	20	6.7
Total respondents		300	100

and single, 10.0 per cent ($n = 30$) are young and married without children, 56.0 per cent ($n = 168$) are married with children and 6.7 per cent ($n = 20$) are older. The sample profile is shown in Table 14.1.

Data analysis and interpretation

Descriptive statistics, reliability analysis and paired *t*-tests were conducted to assess the behavioural outcomes of financial education workshops on financial behaviour of the participants.

Data reliability and normality

Cronbach's coefficient (α) was used to assess scale reliability. Cronbach's α was calculated at two stages: (i) Pre-survey and (ii) Post-survey. The Cronbach's α coefficient value for the overall financial behaviour scale for the pre-survey was 0.883 and 0.721 for the survey conducted 3 months after the workshop. Separate reliability of the different financial behaviours was also calculated. For the pre-survey, the values of Cronbach's α coefficient for cash flow management, saving behaviour,

investment behaviour and credit behaviour were 0.800, 0.753, 0.745 and 0.689, respectively. For the data collected after the workshop, as for cash flow management, saving behaviour, investment behaviour and credit behaviour were 0.707, 0.704, 0.721 and 0.679, respectively. Thus, the α values for all the financial behaviour variables indicate an acceptable level of internal consistency in the scale, confirming that the scale is reliable enough to use. Data quality was examined by using Skewness, Kurtosis and *t*-test values, which showed that the data are normal, and can be used in further statistical analysis.

Data analysis

Table 14.2 displays means, standard deviations and standard error of means for all the 22 pairs in the study. The effect of the financial education workshop can be seen by analysing the mean values of pre-survey and post-survey. From the mean value column, it is evident that for all the variables mean values in the pre-survey and post-survey show significant differences.

To assess the behavioural outcomes of financial education workshops on financial behaviour of the participants, paired *t*-tests were conducted on the pairs of 22 items of financial behaviour variables.

Table 14.3 shows the *t*-test values. The last column of Table 14.3 shows the significance values for the two-tailed test at the 0.05 per cent level of significance.

From the column of mean differences presented in Table 14.3, it can be seen that there is a difference between the pre- and post-surveys, in particular financial behaviour appears to be improved significantly 3 months after the workshop series. Cash flow management behaviour is significantly improved among participants after attending the financial education workshop series. The mean value for cash flow management in the pre-survey is 2.76 (SD = 0.92) and in the post-survey is 4.08 (SD = 0.41) ($t(299) = 26.95$, $P<0.05$). Hence, it can be concluded that the financial education workshop series has had a positive effect on the cash flow management behaviour of the participants.

A statistically significant difference ($t(299) = 23.06$, $P<0.05$) was also found between the means in saving behaviour of the participants before the workshop series (M = 3.04, SD = 0.76) and the means reported 3 months after the workshop series (M = 4.03, SD = 0.43). Hence, it can be concluded that the financial education workshop series has had a positive effect on the saving behaviour of the participants.

Similarly, Table 14.3 also shows that the participants' investment behaviour has also positively improved following the financial education

Table 14.2 Paired samples statistics

Pairs	Variables		Mean	N	SD	Standard error mean	Cohen's *d*
	Cash flow management	**E_{CF}**	**2.76**	**300**	**0.923**	**0.053**	**1.847**
		P_{CF}	**4.08**	**300**	**0.411**	**0.023**	
Pair 1	I keep written/electronic records of monthly expenses and/or saving of my money	E1	2.45	300	1.329	0.077	1.486
		P1	4.07	300	0.781	0.045	
Pair 2	I use a regular spending plan or budget	E2	2.73	300	1.333	0.077	1.425
		P2	4.13	300	0.803	0.046	
Pair 3	I stayed within my budget or spending plan	E3	2.76	300	1.379	0.080	0.989
		P3	3.92	300	0.920	0.053	
Pair 4	I keep financial records in an organized manner and can find important documents easily	E4	2.88	300	1.376	0.079	1.136
		P4	4.12	300	0.729	0.042	
Pair 5	I calculate my net worth	E5	2.83	300	1.382	0.080	1.067
		P5	4.05	300	0.840	0.049	
Pair 6	I use coupons/discount cards in my next shopping	E6	2.78	300	1.353	0.078	1.196
		P6	4.12	300	0.825	0.048	
Pair 7	I use a shopping list while shopping for groceries	E7	2.89	300	1.435	0.083	1.066
		P7	4.15	300	0.858	0.050	
	Saving behaviour	**E_{SB}**	**3.04**	**300**	**0.763**	**0.044**	**1.602**
		P_{SB}	**4.03**	**300**	**0.426**	**0.024**	
Pair 8	I began/maintain an emergency saving fund	E8	3.05	300	1.209	0.070	1.028
		P8	4.11	300	0.815	0.047	
Pair 9	I save/invest the money out of every pay check (income)	E9	3.15	300	1.217	0.070	0.980
		P9	4.14	300	0.747	0.043	
Pair 10	I increase my savings when I receive a salary increase	E10	3.33	300	1.128	0.065	0.874
		P10	4.18	300	0.788	0.045	
Pair 11	I save regularly for long-term financial goals	E11	3.14	300	1.261	0.073	0.933
		P11	4.12	300	0.784	0.045	
Pair 12	I plan and set goals for the future	E12	3.04	300	1.255	0.072	0.837
		P12	3.93	300	0.829	0.048	

(*continued*)

Table 14.2 Continued

Pairs	Variables		Mean	N	SD	Standard error mean	Cohen's *d*
Pair 13	I avoid impulse purchases and do not use shopping as a form of recreation	E13	2.58	300	1.132	0.065	1.063
		P13	3.70	300	0.969	0.056	
	Investment behaviour	**E_{IB}**	**2.86**	**300**	**0.829**	**0.047**	**1.719**
		P_{IB}	**4.03**	**300**	**0.489**	**0.028**	
Pair 14	I consult with friends and family members on ways to save and invest	E14	3.33	300	1.076	0.062	0.729
		P14	4.01	300	0.763	0.044	
Pair 15	I have money spread across more than one type of investment	E15	2.89	300	1.274	0.074	1.052
		P15	4.02	300	0.828	0.048	
Pair 16	I read informative materials while investing my savings	E16	2.69	300	1.373	0.079	1.232
		P16	4.08	300	0.814	0.047	
Pair 17	I have/plan to have insurance to cover 'big' unexpected expenditures	E17	2.56	300	1.358	0.078	1.313
		P17	4.04	300	0.835	0.048	
	Credit behaviour	**E_{CB}**	**2.70**	**300**	**0.846**	**0.048**	**1.902**
		P_{CB}	**3.97**	**300**	**0.419**	**0.024**	
Pair 18	I pay instalments on time, for any loan taken	E18	3.31	300	1.493	0.086	0.873
		P18	4.33	300	0.708	0.041	
Pair 19	I review my loan schedule regularly	E19	2.49	300	1.340	0.077	1.363
		P19	4.02	300	0.852	0.049	
Pair 20	I compare things while shopping	E20	2.90	300	1.455	0.084	1.018
		P20	4.09	300	0.784	0.045	
Pair 21	I spend unexpected money on fun things	E21	1.46	300	0.700	0.040	1.940
		P21	2.92	300	0.802	0.046	
Pair 22	I closely watch the amount I spend	E22	3.33	300	1.355	0.078	1.119
		P22	4.51	300	0.609	0.035	
	Financial behaviour	E_{FB}	11.37	300	2.743	0.158	2.225
		P_{FB}	16.11	300	1.245	0.071	

E = Pre-test, P = Post-test.

Table 14.3 Paired samples statistics for financial behaviour

	Variables of financial behaviours	Pairs	Mean difference	Standard deviation	Standard error mean	*t*-value	Df	Significance
	Cash flow management	P_{CF}–E_{CF}	**1.321**	**0.849**	**0.049**	**26.951**	**200**	**0.000***
Pair 1	Keeping of written/electronic record of monthly expenses and/or saving my money	P1–E1	1.623	1.450	0.084	19.394	299	0.000*
Pair 2	I use regular spending plan or budget	P2–E2	1.407	1.322	0.076	18.433	299	0.000*
Pair 3	I stayed within my budget or spending plan	P3–E3	1.153	1.420	0.082	14.067	299	0.000*
Pair 4	I keep financial records in an organized manner and can find important documents easily	P4–E4	1.240	1.357	0.078	15.825	299	0.000*
Pair 5	I calculate my net worth	P5–E5	1.227	1.357	0.078	15.657	299	0.000*
Pair 6	I use coupons/discount cards in my next shopping	P6–E6	1.340	1.510	0.087	15.375	299	0.000*
Pair 7	I use a shopping list while shopping for groceries	P7–E7	1.260	1.547	0.089	14.106	299	0.000*
	Saving behaviour	P_{SB}–E_{SB}	**0.981**	**0.737**	**0.042**	**23.065**	**299**	**0.000***
Pair 8	I began/maintain an emergency saving fund	P8–E8	1.053	1.313	0.076	13.899	299	0.000*
Pair 9	I save/invest the money out of every pay check (income)	P9–E9	0.990	1.201	0.069	14.283	299	0.000*
Pair 10	I increase my savings when I receive a salary increase	P10–E10	0.843	1.130	0.065	12.929	299	0.000*
Pair 11	I save regularly for long-term financial goals	P11–E11	0.983	1.345	0.078	12.663	299	0.000*
Pair 12	I plan and set goals for the future	P12–E12	0.893	1.273	0.074	12.154	299	0.000*

(*continued*)

Table 14.3 Continued

	Variables of financial behaviours	Pairs	Mean difference	Standard deviation	Standard error mean	*t*-value	Df	Significance
Pair 13	I avoid impulse purchases and do not use shopping as a form of recreation	P13–E13	1.127	1.269	0.073	15.383	299	0.000*
	Investment behaviour	**P_{IB}–E_{IB}**	**1.166**	**0.753**	**0.643**	**26.825**	**299**	**0.000***
Pair 14	I consult with friends and family members on ways to save and invest	P14–E14	0.680	1.158	0.067	10.167	299	0.000*
Pair 15	I have money spread across more than one type of investment	P15–E15	1.127	1.375	0.079	14.194	299	0.000*
Pair 16	I read informative materials while investing my saving	P16–E16	1.387	1.375	0.079	17.470	299	0.000*
Pair 17	I have/plan to have insurance to cover 'big' unexpected expenditures	P17–E17	1.473	1.403	0.081	18.185	299	0.000*
	Credit behaviour	**P_{CB}–E_{CB}**	**1.274**	**0.889**	**0.051**	**24.814**	**299**	**0.000***
Pair 18	I pay instalments on time, for any loan taken	P18–E18	1.013	1.676	0.097	10.472	299	0.000*
Pair 19	I review my loan schedule regularly	P19–E19	1.530	1.561	0.090	16.975	299	0.000*
Pair 20	I compare things while shopping	P20–E20	1.187	1.553	0.090	13.231	299	0.000*
Pair 21	I spend unexpected money on fun things	P21–E21	1.463	1.039	0.060	24.401	299	0.000*
Pair 22	I closely watch the amount I spend	P22–E22	1.177	1.409	0.081	14.464	299	0.000*
	Financial behaviour	**P_{FB}–E_{FB}**	**4.743**	**3.454**	**0.141**	**33.48**	**299**	**0.000***

*shows significance at $P < 0.05$.

workshop series. The mean value for investment behaviour before attending the workshop series was 2.86 (SD = 0.83) compared with 4.03 (SD = 0.49) ($t(299) = 28.83$, $P<0.05$) after the workshop. Hence, it can be concluded that the financial education workshop series has had a positive effect on investment behaviour of the participants.

The paired samples *t*-test also revealed a statistically significant difference ($t(299) = 24.81$, $P<0.05$) between the means of credit behaviour of the participants before the workshop series (M = 2.70, SD = 0.85) and the mean 3 months after the workshop series (M = 3.97, SD = 0.41). Hence, it can be concluded that the financial education workshop series has had a positive effect on the credit behaviour of participants. The mean value of overall financial behaviour (reflected by the total of 22 financial behaviour variables) in the pre-survey is 11.37 (SD = 2.74) and in the post-survey is 16.11 (SD = 1.25) ($t(299) = 33.48$, $P<0.05$). Hence, it can be concluded that the financial education workshop has had a positive effect on the overall financial behaviour of participants.

In order to assess the extent of financial behaviour change 3 months after completion of the financial education workshop series, Cohen's *d* effect sizes were calculated for each dependent measure by dividing the mean pre- to post-differences between groups by their pooled standard deviation. The formula for calculating Cohen's *d* from the means and standard deviations for the two measurement occasions is:

$$d = \mathrm{M1} - \mathrm{M2}/\sqrt{(\mathrm{SD1}^2 + \mathrm{SD2}^2)/2}$$

Where,

M2 is the mean post-survey score or mean score of the measure that is expected to be positively related to the independent variable, M1 is the pre-survey or comparison group mean score. A positive effect size indicates that the financial education workshop series leads to positive improvements in the financial behaviour of the participants. Cohen's *d* was calculated for all the financial behaviour variables and is presented in Table 14.2. From the last column of Table 14.2, it can be seen that for all 22 pairs of financial behaviour the values of Cohen's *d* is positive, indicating that the financial education workshop series leads to positive improvements in the financial behaviour of the participants.

Discussion

The results of this study have valuable implications for financial education providers, who are evaluating their financial education programmes.

The overall result of this study provides evidence that financial education leads to a positive improvement in the financial behaviour of the participant. It is observed that the financial behaviour of homemakers is significantly improved after attending the financial education workshop series, suggesting that the workshop series was effective in reaching the participants who were in need of the financial education. However, the effect of the financial education workshop series on various financial behaviours is diverse, which can be seen from the Cohen's *d* value presented in Table 14.2.

The value of Cohen's *d* calculated for the 22 financial behaviours suggests that the effect of the workshop series has brought the largest positive behavioural change on 'I spend unexpected money on fun things' (Cohen's $d = 1.940$); 'I keep written or electronic records of my monthly expenses and/or my money saving' (Cohen's $d = 1.486$); 'I use a regular savings plan or budget' (Cohen's $d = 1.425$); 'I review my loan schedule regularly' (Cohen's $d = 1.363$); 'I plan to have insurance to cover "big" unexpected expenditures' (Cohen's $d = 1.313$); 'I read informative materials while investing my savings' (Cohen's $d = 1.232$); 'I use coupons/discount cards in my next shopping' (Cohen's $d = 1.196$); 'I keep financial records in an organized manner and can find important documents easily' (Cohen's $d = 1.136$); and 'I closely watch the amount that I spend' (Cohen's $d = 1.119$).

The above values of Cohen's *d* suggest that the financial education workshop series had the largest positive effect on those financial behaviours that could easily and most readily be altered in the short run and mostly related to the participants' daily household financial management practices. It can also be concluded that the participants have started to employ a more planned set of financial practices to enhance their financial well-being.

The close observation of the values of Cohen's *d* presented in Table 14.2 also shows that the financial education workshop series has brought a small positive behavioural outcome on 'I consult with friends and family members on various ways to save and invest' (Cohen's $d = 0.729$); 'I plan and set goals for future' (Cohen's $d = 0.837$); 'I pay instalments on time, for a loan taken, if any'(Cohen's $d = 0.873$); 'I increase my saving, when I receive increases in (household) salary' (Cohen's $d = 0.874$); 'I save regularly for long-term financial goals' (Cohen's $d = 0.933$); 'I save/invest the money out of every pay check (income)' (Cohen's $d = 0.980$). The above values of Cohen's *d* suggest that the financial education workshop series had a smaller positive effect on those financial behaviours that are dependent on either the participants' financial situation or personal financial circumstances.

The analysis of four financial behaviours shows that the effect of the financial education workshop series on cash flow management was larger, which is reflected by Cohen's $d = 1.847$, than for saving behaviour (Cohen's $d = 1.602$), investment behaviour (Cohen's $d = 1.719$) and credit behaviour (Cohen's $d = 1.802$).

The overall findings of this study suggest that the financial education workshop series has positively changed the 22 financial behaviours of the participants, although its effect on different financial behaviours is varied. It is found that the workshop series had a more positive effect on those financial behaviours that the participants could relate most readily to and alter in the short run (for instance, cash flow management), instead of those behaviours that were dependent on the participant's financial position or personal circumstances (saving, investment and credit behaviour). These findings are similar to the findings of Lyons *et al* (2006).

Conclusion

Analysis of data collected from the 300 homemakers shows that financial education workshops do have a positive behavioural effect on the financial behaviour of the participants, which was reflected in 22 variables of financial behaviour and divided into cash flow management, saving, investment and credit behaviour. The research also finds that financial education enhances the financial information and knowledge of the participants, which leads to the best financial management practices and improved financial behaviour. The findings of the study are similar to previous studies by DeVaney *et al* (1996), O'Neill *et al* (2000) and Hogarth *et al* (2003).

The self-reported measures, shown by the participants in the follow-up survey, demonstrated the positive behaviour change in participants with respect to financial behaviour after attending the financial education workshop series. These positive changes in financial behaviour enhanced the knowledge and confidence in their skills and their ability for building more responsible future financial behaviour. The present study provides evidence that the participants' ability to improve their financial behaviour can be enhanced through financial education that synergizes the tools and learning approaches which may enhance the financial knowledge, financial behaviour and ultimately the financial well-being of an individual, as the study provides a noticeable finding that there is a positive effect of financial education on 22 variables of financial behaviour.

Currently, financial education programmes often neglect evaluation as an integrated component of their programme design. Meaningful programme evaluation is an essential and integrated element of successful programmes. Well-designed evaluations may 'document individual program implementation and effectiveness, but also address collectively and cumulatively which programs work for whom, how, when, where, and why' (Weiss, 1988, p. 4). With a more systematic, consistent and collaborative approach to programme evaluation, stronger evidence of any link between financial education and targeted outcomes may emerge. The information can be used to improve the programme as well as to provide evidence for accountability and effectiveness.

The scope of the present study is limited to summative evaluation, that is, the study collected information on whether a programme is making a difference in previously identified and desired outcome measures (Scriven, 1981). The findings of the present study may be helpful to financial education providers to design and implement more effective financial education programmes that would provide the participants with the knowledge and skills to better manage their finances and improve their financial behaviour and well-being. For policymakers, the findings help to understand the benefits of programme evaluation as a means of distinguishing between the behaviours that can be more easily changed in the short run and behaviours that require more fundamental changes in a specific aspect of financial behaviour, such as credit, investment and so on.

Limitations and suggestions for further research

The present study has a number of limitations. First, formative evaluation was not adopted in this study. Hence, the feedback for programme organizers and educators was not collected. Second, a small sample size restricted to one organization limits the generalizability of findings. Samples from different organizations could be useful to further investigate the effect of financial education workshops on various groups of the citizens. Third, in this experimental study, there is an absence of control group in the research design. There is scope for the research to carry out a more rigorous experimental research design by employing a control group and a larger sample size. It is also recommended that the future studies should employ longer-term follow-up surveys of one or more years to ascertain the sustained effect of such financial education programmes on the long-term financial behaviour of the participants. The understanding of how changes in long-term financial behaviour take place over a period of time would be very helpful for designing financial education programmes in future.

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Appendix

Table 14.A1 Codebook for 22 financial behaviour statements

Pre-survey code	Post-survey code	Financial behaviour variables
		Cash flow management
E1	P1	I keep written or electronic records of my monthly expenses and/or my money savings
E2	P2	I use a regular spending plan or budget
E3	P3	I stayed within my budget or spending plan
E4	P4	I keep financial records in an organized manner and can find important documents easily
E5	P5	On a regular basis, I calculate my net worth
E6	P6	I use coupons/discount cards in my next shopping
E7	P7	I use a shopping list while shopping for groceries
		Saving behaviour
E8	P8	I began/maintained an emergency saving fund
E9	P9	I save/invest money out of every pay check (income)
E10	P10	I increase my savings when I receive a salary increase
E11	P11	I save regularly for long-term financial goals, such as education for my children, a house or retirement

(*continued*)

Table 14.A1 Continued

Pre-survey code	Post-survey code	Financial behaviour variables
E12	P12	I plan and set goals for the future
E13	P13	I avoid impulse purchases and do not use shopping as a form of recreation
		Investment behaviour
E14	P14	I consult with friends and family members on ways to save
E15	P15	I have money spread across more than one type of investment (for example, stocks, bonds, mutual funds)
E16	P16	I read informative materials while investing my savings
E17	P17	I have/plan to have insurance to cover 'big' unexpected expenditures
		Credit behaviour
E18	P18	I pay instalments on time, for a loan taken, if any
E19	P19	I review my loan schedule regularly
E20	P20	I compare things while shopping
E21	P21	I spend unexpected money on fun things
E22	P22	I closely watch the amount I spend

15

Fraud and its PREY: Conceptualising Social Engineering Tactics and its Impact on Financial Literacy Outcomes

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Introduction

An unexpected finding within the financial literacy debate centres on the relationship between financial literacy levels and fraud victimisation. It has often been assumed that increasing financial literacy levels would also act as a protective factor for individuals falling victim to

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financial and investment fraud. While some support for this assumption has been found (for example, Gamble *et al*, 2012; Lusardi, 2012), a number of researchers have in fact reported that financial literacy is associated with higher levels of victimisation (NASD, 2006; American Association of Retired Persons (AARP), 2007, 2008, 2011; Australian Crime Commission (ACC) and Australian Institute of Criminology (AIC), 2012). The NASD Investor Education Foundation (now FINRA Investor Education Foundation), concluded that 'financial literacy programs are necessary but probably not sufficient to prevent fraud' (NASD, 2006, p. 6). This represents a major challenge for the financial literacy agenda.

This article makes a positive contribution to the financial literacy field through its examination of an approach that not only strives to more effectively address the challenge of financial fraud but can also be used as a proactive, fraud prevention framework. This article uses investment fraud, which involves the selling of (usually) fraudulent investment products at inflated prices (also referred to as boiler room fraud) as an illustrative case study. The article explores how victimisation could be better understood through analysing the application of social engineering theory and persuasion tactics used by offenders in perpetrating fraudulent investment schemes. The PREY (Profiled, Relational, Exploitable, and Yielding) model, developed in this article based on a review of the literature, captures and summarises those psychological tactics used by fraud perpetrators to influence the thoughts and decision-making processes of individuals. Relevant to financial fraud, the model seeks to move financial literacy education towards an expanded curriculum, going beyond knowledge and application of financial matters and generic warnings about financial fraud. It is concluded that the curriculum needs to explicitly include education on social engineering and persuasion techniques. This approach is likely to be relevant across all offerings of financial literacy education. However, education focused on social engineering and persuasion techniques may be more relevant to groups with particular characteristics. For example, as will be discussed later in this article, research has demonstrated a strong correlation between age, levels of financial literacy knowledge and investment fraud victimisation (NASD, 2006; AARP, 2011).

Definition and prevalence of investment fraud

To begin, it is important to define investment fraud and to consider its prevalence. Prevalence rates of investment fraud provide some basis on which to assess the need and urgency for fraud education to be prioritised within the financial literacy curriculum.

Investment fraud through the use of cold calling (or boiler room fraud) can be seen to operate through four distinct phases. While these may be unique to individual situations, there is a general pattern that can be characterised by the stages below:

(1) Initial approach by the offender to the potential investor, outlining the opportunity and seeking approval to send documentation about the potential investment.
(2) Follow up by the offender to confirm the receipt of the marketing materials and solicit a financial commitment to the investment opportunity.
(3) Continued contact by the offender to reassure the victim of their investment, and to offer additional investment opportunities.
(4) A crisis point, where the victim (for whatever reason) wants to exit their investment but is informed that they cannot do this. The victim may then be convinced to reinvest in another opportunity or alternatively may begin to suspect that they have been defrauded.

Turning to the issue of prevalence, investment fraud represents a significant threat to financial security. In 2011, the ACC established Taskforce Galilee to examine the issue of serious and organised investment fraud in Australia. This taskforce estimated that between January 2007 and April 2012 more than A$113 million was lost by over 2600 victims (ACC and AIC, 2012). Serious and organised investment fraud was defined as:

(a) Any unsolicited contact, by telephone or Internet, of persons in Australia (potential investors) by persons (callers) usually located overseas, where such callers engage in conduct that is fraudulent, false, misleading or deceptive with the purpose of inducing potential investors to buy, sell or retain securities or other investments and where such callers do not have the licence or authority to engage in a securities business, or investment advice business in Australia; and
(b) May include superannuation and investment fraud' (ACC and AIC, 2012, p. 5).

Earlier research by the Australian Securities and Investment Commission (ASIC), reported that between 1999 and 2002 more than 7300 people across Australia had contacted them in relation to a cold calling experience (ASIC, 2002a). Approximately, 80 per cent of these people had lost money (ASIC, 2002a). At this time, ASIC conservatively estimated that victims may have been defrauded in excess of A$400 million (ASIC, 2002a).

These Australian findings are echoed across the United Kingdom and the United States. In the United Kingdom, it is estimated that 3.5 billion pounds each year is lost by victims of mass marketing fraud (which includes investment fraud) (National Fraud Authority (NFA), 2012), and in the United States the comparable annual fraud cost has been calculated to be in excess of $50 billion (Deevy *et al*, 2012).

Given the prevalence of fraud and the generally accepted assumption that these statistics are likely to grossly underestimate its true impact, this type of fraud has serious implications for the financial well-being of those victimised. In this article, financial well-being is defined as 'a state of being financially healthy, happy, and free from worry' (Joo, 2008, cited in Malone *et al*, 2010, p. 63). Financial literacy certainly has a role to play in working towards minimising and preventing investors being defrauded. However, as the following discussion will explore, the answer does not necessarily lie with simply increasing financial literacy levels. The relationship between financial literacy and fraud prevention is more complex.

Relationship between financial literacy and fraud outcomes

As discussed earlier, financial literacy may not be as effective as previously thought in protecting against fraud victimisation. The ACC and AIC's (2012) report on the outcomes of Taskforce Galilee found that victims of investment fraud were more financially literate, had previously invested in other companies and appeared on shareholder registers. Research conducted with older persons has been particularly consistent in this finding. Research conducted by NASD (2006) found that older victims of financial fraud compared with non-victims actually scored higher on tests of financial literacy knowledge. This was similar to conclusions drawn in earlier research published by the AARP (2007, 2008, 2011).

The financial literacy and fraud victimisation relationship creates a significant challenge to those involved in financial literacy as an often-stated goal of financial literacy involves fraud education (Taskforce on Financial Literacy, 2010). A rudimentary analysis of the research could lead to the conclusion that financial literacy education, particularly in respect to fraud victimisation, is simply counterproductive. As a specific example, the argument is logical when reflecting on data that suggests that higher rates of financial literacy is generally correlated with age (ANZ, 2011), and in turn age is often correlated with higher levels of

financial fraud victimisation (NASD, 2006; AARP, 2011). However, the implication of this research is not of course to discontinue efforts to improve financial literacy levels. What is needed is a reexamination and deeper consideration of the relationship between financial literacy, fraud, current approaches used in the financial literacy curriculum and identifying and focusing education efforts on those most at risk of victimisation. The essential issue is how the financial literacy curriculum can be improved to address and ultimately prevent this spurious outcome.

A large research study conducted by NASD (2006) provides some useful insights into why financial literacy may be correlated with higher levels of victimisation. In turn, the research allows important conclusions to be drawn in respect to how the financial literacy curriculum could be redesigned in order to more effectively tackle financial fraud.

The NASD (2006) report, in seeking to account for their findings correlating financial literacy with increased victimisation rates, proposes three possible explanations. The researchers propose that one reason that those who are more financial literate are vulnerable to fraud is that even though they theoretically know how to avoid fraud they fail to apply fraud protection and avoidance measures to their own situation. This is called the 'knowing-doing gap' (NASD, 2006). A further explanation is the 'expert snare' whereby individuals who are more financially literate have an overconfidence in their investment abilities and decisions (NASD, 2006). Other researchers have also discussed the overconfidence trap (Gamble *et al*, 2012). It has been calculated that 'one standard deviation increase in overconfidence in financial knowledge increases the odds of falling victim to fraud by 38 per cent' (Gamble *et al*, 2012, p. 3). Although these two explanations are useful, they provide less direction as to how the financial literacy curriculum could be redesigned to more effectively minimise fraud victimisation. It is argued in this article that the third explanation provided by NASD (2006), 'low persuasion literacy' is the key to redesigning the financial literacy curriculum. It has the potential to address the 'expert snare' and make inroads into the 'knowing-doing gap'.

NASD (2006) state that 'low persuasion literacy' exposes investors to fraud, despite their comparatively higher levels of financial literacy, because financial literacy does not inoculate investors from the psychological persuasion tactics used by fraud perpetrators. The effectiveness of financial literacy as it is related to financial fraud may be much more about awareness of fraud tactics than about financial knowledge. Although both are important, it is persuasion tactics that have perhaps

been the least directly acknowledged and addressed in the financial literacy curriculum.

On the basis of this premise, the following discussion begins by illustrating how victimisation can be understood through applying social engineering theory and the use of persuasion tactics by offenders in perpetrating fraudulent investment schemes. This analysis leads to the formulation of the PREY model. The PREY model is examined in the light of its proposed contribution to financial literacy education through its direct articulation of social persuasion and social engineering tactics, moving financial literacy curriculum beyond generic warnings about financial fraud. This article is focused on improving the content base and curricula of financial literacy education. The following discussion presents the key crime prevention messages that derive from this approach. In turn, the discussion highlights the target groups and types of educational contexts that would most benefit from this addition to financial literacy educational content.

Introduction to persuasion tactics and social engineering

The key tenets of social engineering have been built from an understanding of the psychology of persuasion tactics primarily from the social psychology literature (Rusch, 1999). While there are a number of definitions of social engineering, perhaps the most fundamental is that provided by Manske (2000). Manske (2000, p. 53) defines social engineering as 'the practice of acquiring information through technical and non-technical means'. Some definitions focus on the ways in which social engineers seek to gain unauthorised access to corporate computer systems and networks (Abraham and Chengular-Smith, 2010), or deceive people into sharing sensitive information (Power and Forte, 2006). Consistent across most definitions is reference to the primary goal of social engineering, being the capture of information or 'the use of trickery, persuasion, impersonation, emotional manipulation and abuse of trust to gain information or computer access through the human interface' (Thompson, 2006, p. 222).

The process of social engineering as discussed in this article draws on the key elements of social engineering as defined by Thompson (2006) to explain how offenders perpetrate investment fraud. However, in this article, the social engineering process defines the end goal of social engineering not just as personal information or the ability to gain computer/account access (although these may be an important part of the whole

victimisation experience), rather the end goal involves directly obtaining money or financial rewards from the victim. In other words, social engineering is a general act of deception. Similarly, Beaver (2009, p. 35) concludes 'social engineering is nothing more than exploiting human being for malicious purposes', and as such can easily be understood in terms of illegitimate financial gain.

The PREY model

Given the foundational premise of this article, that is, financial literacy education needs to be expanded to include a focus on techniques of social engineering and persuasion, the PREY model is presented. The PREY model is an acronym for: Profiled, Relational, Exploitable and Yielding. It has been formulated to articulate the skills and techniques used by offenders in perpetrating investment (boiler room) fraud and can be used to assist investors to better identify and protect themselves against such approaches. The PREY model challenges investors to cast themselves in a predator versus prey scenario. The actors are investors who are viewed as potential 'prey' and fraud offenders who are the 'predators'. The concept of PREY is able to illustrate the nature of interaction between the offender and potential investor, where the ultimate goal of an offender perpetrating boiler room fraud is to obtain money from victims, and they will do whatever is necessary to achieve the highest amount of financial gain possible.

The PREY model is graphically represented in Figure 15.1 to capture the stages in the cycle of victimisation. The outer arrows feeding into the PREY model articulate the social engineering phases, as defined by Mitnick and Simon (2002), which are relevant to each stage of the PREY model.

Profiled

Investors need to be aware that offenders will typically profile them before any contact. This correlates with the first phase of social engineering, the research phase (Mitnick and Simon, 2002; Bakhshi *et al*, 2009). In the profiled stage, the offender attempts to identify the weaknesses and vulnerabilities of a potential target before initiating the first phone call. Specifically, in the case of boiler room fraud, offenders garner details of potential investors or victims from a number of legitimate and illegitimate sources. Although there may be a number of methods by which the offender obtains information about the potential victim, the crucial step relates to what the offender does with that information.

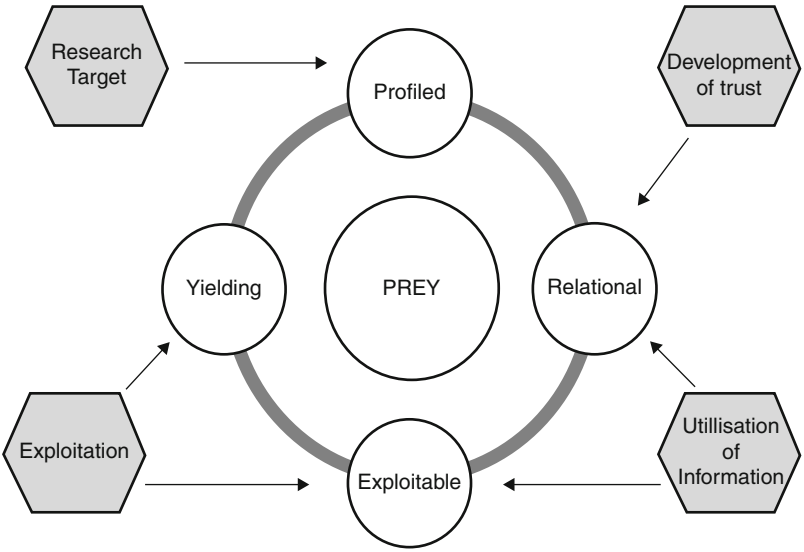

Figure 15.1 PREY framework

The offender is likely to already know key characteristics about the potential investor, including demographics, occupation and previous investment history (Workman, 2007a). This information is then used to specifically pitch the fraudulent investment opportunity to the victim in a way that is most favourable to the potential investor. Achievement of the profiled stage, operationalised in the research phase of social engineering, is essential to the overall success in gaining investment from the victim (Workman, 2007a).

Understanding this stage of victimisation and the tactics employed has direct relevance to formulating fraud prevention measures. Individuals need to recognise that when they receive a cold call regarding investment opportunities that those contacting them have already researched them to determine points of vulnerability. The offender has researched the potential investor to determine the most effective way of developing trust and rapport and then uses this to maximise the likelihood that they will solicit a positive response to the investment offer. At this stage, the best fraud prevention measure that potential victims can enact is to discontinue the call immediately before the offender can manipulate the potential victim into becoming involved or interested in the offer.

Relational

The relational stage correlates with the second phase of social engineering, the development of trust and rapport (Mitnick and Simon, 2002; Bakhshi *et al*, 2009), and is enacted in the first stage of boiler room fraud, being the initial cold call. At this stage, potential victims need to be aware that offenders will do whatever is necessary to develop a relationship with them. Offenders will employ a variety of psychological tactics and persuasion techniques to establish trust from the victim. Trust is one of the most prominent factors behind successful social engineering attacks (Peltier, 2006; Okenyi and Owens, 2007; Applegate, 2009). Thompson (2006, p. 222) argues that 'social engineering succeeds because most people work under the assumption that others are essentially honest. As a pure matter of probability, this is true: the vast majority of communications we receive during the day are completely innocent in character'.

In applying this to boiler room fraud, the offender seeks to build rapport and gain the trust of the potential investor. Having already researched the potential investor, the offender will have determined how to expedite the establishment of trust and rapport required (Workman, 2007a). It is unlikely that the offender will try to persuade the potential investor into making a financial decision at this initial stage. Instead, the offender will seek approval to send information to the victim about the potential investment opportunity. This approach is effective because the sending of information may seem harmless given that there is no implied monetary commitment at this stage. However, this is a deliberate and effective ploy that facilitates further contact.

This stage also seeks to build trust and credibility in respect to the investment opportunity itself. This is likely to include (but is not limited to) the production of marketing materials and prospectuses, the creation of false Websites and the provision of referees who will attest to the reputation of the offender and the fraudulent company (ASIC, 2002a, b; ACC and AIC, 2012). Each of these will contribute to the perceived legitimacy of the investment opportunity offered and encourage the potential investor to financially commit. Many potential investors will conduct their own research and due diligence without realising that they are relying on false information created by the offender.

Relevant to fraud prevention, it is essential to educate potential victims of the levers that offenders are using during this stage. At this stage, offenders are seeking to capitalise on the trust that the potential investor has in the legitimacy of the caller and the investment opportunity they are promoting. Potential victims should be aware that once

the relationship is established between the offender and themselves it becomes more difficult to be objective about the process. Further, as the relationship develops, the offender uses each interaction to actively seek out information that allows them to further build the profile of the potential victim. This has relevance to the final social engineering phase, utilisation of information (Mitnick and Simon, 2002; Bakhshi *et al*, 2009), whereby information garnered from the victim is actively used in the victimisation process. Personal information collated by the offender maximises the likelihood that the offender is able to counter any suspicions that the victim may have about the investments and ensure that the specific persuasion techniques they employ will be optimally effective.

Exploitable

Potential victims require an understanding that offenders view them as commodities that are open to exploitation. The exploitable stage is correlated with the third stage of social engineering, the exploitation of trust (Mitnick and Simon, 2002; Bakhshi *et al*, 2009) and the second and third stages of boiler room fraud involving the initial follow-up call as well as continued phone calls. Offenders employ a number of persuasion techniques and psychological tactics to take advantage of the trust established between victim and offender. Many social engineers employ tactics of fear, authority and reprisal to gain compliance (Workman, 2007b, 2008; Applegate, 2009; Abraham and Chengular-Smith, 2010). Fear can operate through the threat of suspension or security breach of an account, or through the promise of a limited offer (known as scarcity) (Workman, 2008). The use of authority is usually coupled with fear tactics, and exploits the inherent nature of persons to submit to authority figures. Social engineers can also appeal to the curiosity, empathy or excitement of an individual about a presented opportunity (Abraham and Chengular-Smith, 2010).

In the case of boiler room fraud, offenders will use a combination of these tactics and techniques to obtain a financial commitment from the victim. Research conducted on transcripts of offenders and their fraud pitches found that across 128 transcripts 1103 influence tactics were identified, with an average of 8.6 tactics used per script (NASD, 2006). Thirteen common tactics used by offenders pitching investment opportunities were identified (NASD, 2006). This analysis reveals that offenders will attempt to overwhelm their potential victim with multiple persuasion techniques (Thompson, 2006) and the choice of approach will be tailored to the specific vulnerabilities and weaknesses of the targeted victim. The effect of using multiple persuasion

techniques is to 'put the victim in a kind of psychological haze that somehow changes what might otherwise be a normal ability to spot and resist persuasion' (NASD, 2006, p. 11).

The final social engineering phase labelled utilisation of information (Mitnick and Simon, 2002; Bakhshi *et al*, 2009) typically involves offenders using personal information to gain unauthorised access to victim bank accounts, computer accounts or computer systems but it also has relevance to the exploitation phase as described here. Its application to boiler room fraud relates to a wider conceptualisation of social engineering tactics, in that the use of personal information facilitates a successful financial commitment from the victim to invest in a fraudulent opportunity. The information leads to a monetary output, rather than simply gaining access to an account or computer system. Therefore, the utilisation of information can be applied across several stages of boiler room fraud, including the initial follow-up call, continued calls and the crisis point.

It is proposed that a clear articulation and understanding of the role and operation of the exploitation phase is crucial in fraud prevention. Its application to the financial literacy curriculum would involve educating investors on the range of tactics and techniques used by offenders. Essentially, education would be clearly focused on expanding the approach of investors beyond the application of their financial knowledge and skills in assessing investments. Investors who seek to proactively protect themselves from financial fraud victimisation also need to actively apply their knowledge of persuasion and social engineering tactics as part of their investment repertoire. It is argued that increasing 'traditional' financial literacy knowledge, defined as knowledge of basic economic and investment principles, simple knowledge of risk and skills in management and accessing financial resources (Malone *et al*, 2010), is not sufficient to effectively protect against the approach of fraud offenders.

Yielding

The yielding stage of the PREY model correlates with the third identified stage of the social engineering framework, exploitation of trust (Mitnick and Simon, 2002; Bakhshi *et al*, 2009), and although it applies to all stages of boiler room fraud it is most notable at the final stage, the crisis point. At this stage, the offender will pressure the victim to continue to invest increasing amounts of money in the investment scheme and will refuse to accept any reasons provided by the victim to stop investing. Further, the offender will typically refuse to accept any request by the victim, for example, the selling of shares, that would lead to the cessation of their involvement in the investment.

This stage is usually initiated as a result of the victim wanting to terminate their involvement in the investment. Once the victim requests liquidation of their investment, whether that be because they simply want to realise their investment returns or because they suspect it is a fraud, the fraud begins to unravel. Offenders will use whatever persuasion techniques are necessary to convince the victim to reinvest their money (likely to be with an additional financial commitment) (ASIC, 2002b). Even if the victim has not yet recognised this as a fraudulent scheme, most victims will at this point become suspicious. However, given the trust and effectiveness of persuasion techniques used by the offenders, some victims will be unable to resist further financial investment, despite their suspicions (ACC and AIC, 2012). The skill of the offender and the strength persuasion being used on the victim throughout the boiler room fraud process maximises the likelihood that many victims will continually yield to the demands and requests of the offender. The skills and targeted tactics used make it incredibly difficult for the victim to cease involvement in the fraud and acknowledge their financial losses (ACC and AIC, 2012).

The relevance of this stage to making positive impacts on achieving better fraud prevention outcomes is difficult as this stage occurs following victimisation. However, what can be drawn from this stage is the importance of reporting financial fraud. Investors who do fall victim to financial fraud should be encouraged to report their experiences to the relevant regulatory bodies and police organisations. Not only does this provide the opportunity to pursue offenders and prosecute them, it is through a better understanding of how the financial fraud process is operationalised by offenders that better preventative mechanisms can be designed and implemented.

Conclusions

In conclusion, the PREY model presented in this article was used to summarise the skills and techniques used by offenders in perpetrating investment (boiler room) fraud. Given research to suggest that financial literacy may not be as effective as previously thought in protecting against fraud victimisation (NASD, 2006; AARP, 2007, 2008; ACC and AIC, 2012), this model seeks to expand the financial literacy curriculum beyond attainment and application of financial knowledge and generic warnings about financial fraud. In order for better fraud prevention outcomes to be achieved, the curriculum needs to explicitly include education on social engineering and persuasion techniques.

The preceding discussion focused on examining the stages of the PREY model and derived specific proactive fraud prevention measures that could be integrated into the content of financial literacy curriculum. It was concluded that investors need to recognise, when they receive a cold call regarding an investment opportunity, that the caller (or offender) has typically already conducted research to determine the particular points of vulnerability for that victim (*Profiled*). Further, once the relationship between the potential victim and offender has been established, it is more difficult for the potential victim to be objective about the interaction and offers being made (*Relational* and *Exploitable*). Continued interactions allow the offender to gather more information about the victim further reinforcing and extending the levers that can be used by them to engage the investor in the fraudulent scheme (*Exploitable* and *Yielding*). Investors who seek to protect themselves against financial fraud need to actively apply their knowledge of persuasion and social engineering tactics beyond the application of their financial knowledge and skills.

Extrapolating from these specific fraud prevention messages, it is also important to acknowledge two key general conclusions about fraud prevention in this context. First, many individuals do not realise the value of their personal information and how this can be used by offenders. An increased awareness of the worth of personal details may deter some individuals from providing this type of information without due consideration and assist in preventing them being as exposed to profiling and targeting by offenders. Second, greater awareness is needed in respect to the transfer to monies overseas, a tactic often used in financial fraud (ACC and AIC, 2012). Once money is sent offshore as part of an investment (or in this case boiler room fraud), the ability of financial institutions, police and/or regulators to recover such monies is extremely difficult; recovery of money is 'not only difficult but unlikely' (Button *et al*, 2009, p. 31). These general conclusions clearly indicate and reinforce that prevention is better than reaction, and that investors need to take steps to prevent or at least minimise the risk of being targeted and experiencing financial loss.

It is important to consider how the proposed fraud prevention educational content proposed here, based on the PREY model, could be integrated into the financial literacy curriculum. Unfortunately, others have concluded that empirical validation of the effectiveness of programmes designed to teach individuals to identify or resist persuasive, particularly deceptive or dishonest, techniques and tactics is limited (Sagarin *et al*, 2002). Despite these difficulties, it is possible to identify a number

of general conclusions that may be useful in guiding how investors can be taught to identify and resist fraudulent, persuasive tactics. Drawing on the empirical work of Sagarin *et al* (2002, p. 528), it is suggested that one effective strategy is heightening investors' awareness of 'undue manipulative intent'. In this case, investors are taught that fraud perpetrators use highly sophisticated persuasion tactics that are designed to exploit even those with high levels of financial knowledge and skill. This approach may be effective as it explicitly and directly challenges those who may be overconfident in their ability to accurately identify fraud due to their level of financial knowledge.

Further, the above discussion that identified potential fraud prevention intervention points for each stage of the PREY model can be taught as decision points for investors. This approach provides investors with general decision points that allow them to have a base or starting point on which to evaluate whether the identified and known tactics of social persuasion and engineering are being used. It allows investors a general framework on which to discriminate between legitimate and fraudulent investment-related approaches (Sagarin *et al*, 2002). Application of rules should be taught experientially within the financial literacy curriculum to enhance the ability of investors to understand the evolving nature of identifying investment fraud, building up not a discrete set of rules but an adaptive approach that can be used dynamically across situations and contexts.

At a broad implementation level, it is suggested that the integration of education on social persuasion and social engineering tactics should, at least as a first step, be focused on specific target groups. As discussed earlier, existing research evidence finds that higher rates of financial literacy is generally correlated with age (ANZ, 2011), and in turn age and financial literacy knowledge is often correlated with higher levels of financial fraud victimisation (NASD, 2006; AARP, 2011). It is proposed that the type of educational content proposed in this article would be highly relevant to a target group with these characteristics and it is hypothesised that it would be positively related to better fraud prevention outcomes. It is likely that the target group described could be effectively engaged via a community education context or alternatively, through their financial advisor. This would require upskilling of community educators and financial advisors on the nature and scope of social persuasion and social engineering tactics in this context.

The concept of PREY provides a framework that operationalises social engineering and persuasion tactics. The PREY model challenges investors to see themselves in the same way that offenders perceive them. Offenders

perceive targets or prey as victims that can be profiled (*Profiled*), manipulated through the development of false trust and rapport (*Relational*), exploited (*Exploitable*) and pressured into yielding to offender demands (*Yielding*). In this article, it has been argued that individuals can be empowered to identify, resist and re-engineer the techniques of persuasion used against them by offenders. In this way, the financial literacy curriculum can actively contribute to a proactive, fraud prevention framework, and in turn assist investors to protect their current and future financial well-being.

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