

# Information Regulation in Consumer Credit Markets– Determinants of Financial Information Oversupply

Simangaliso Biza-Khupe

*Department of Accounting and Finance, Faculty of Business*

*University of Botswana, Botswana*

E-mail: biza-khu@mopipi.ub.bw

Tel: +267 3552229

## Abstract

Financial information regulation forms an integral part of consumer financial markets, while market efficiency provides a measure of the aptness of any financial regulatory architecture. There has been a noticeable shift in paradigm in financial information regulation globally. Many governments are demanding increased financial information disclosures from financial institutions to investors and borrowers. To the extent that the Global Financial Crisis (GFC) has been attributed to a lax financial regulatory regime, there has been an increased propensity for control and disclosure. This stance has gained impetus despite evidence suggesting that increased financial information disclosures breed information oversupply. Information oversupply adversely affects individuals' rationalisation and financial decision-making processes, a matter which impedes on the overall market efficiency. Despite the proliferation of financial information oversupply in consumer financial markets, this phenomenon has remained relatively unexplored. This paper contributes to the literature by conducting an empirical exploration of the determinants of financial information oversupply emanating from the prevailing information regulatory regime. A model incorporating both the psychological and cost/benefit theoretical streams is proposed and tested using data collected from Melbourne residents in Australia. The Cost of Information Search and Prior Memory Structure were found to significantly influence the dependent variable, while the dependent variable did not significantly relate to Credit Experience and Age. The implications of the study are discussed and areas for further research suggested.

**Keywords:** Information Regulation, Consumer Financial Markets, Consumer Credit, Information Oversupply

## 1. Financial Information Regulation

There is general consensus among researchers that financial markets lack absolute efficiency. With relation to consumer financial markets, this problem is compounded by observations that have indicated that consumers neither have knowledge, aptitude and skills base on financial management matters, nor have adequate access to full and comprehensible information about the costs and returns of the various financial instruments available in the market (Lee & Hogarth 1999a; Malbon 2001; Santomero 2001). The mere fact that researchers have attributed poor financial decisions and choices by individuals and households as one of the causes of the recent Global Financial Crisis through, for instance, excessive leverage (ratio of debt to asset), increased risk appetite and the global phenomenal

rise in personal bankruptcies (Begg 2009; Braucher 2004; Kay 2009), attests to the flaws of the financial regulatory architecture. With a view to combat this problem, there is a noticeable shift in paradigm and approach to regulation. In particular, momentum has gathered over the decades towards a conservatism approach that has culminated in increased regulation and information disclosure (Beder 2009; Carmassi, Gros, & Micossi 2009; Crotty 2009). Since the 1960's, many governments have intervened in consumer financial markets by imposing legislation prescribing minimum financial information disclosures from financial institutions to individuals as means of boosting market efficiency (Malbon 2001); for example:

- i. the Truth in Lending Act (TILA) of 1968, the Fair Credit and Charge Card Disclosure Act of 1988 and the Real Estate Settlement Procedure Act (RESPA) of 1974 in the United States;
- ii. the Consumer Credit Act (1974) in the United Kingdom;
- iii. the Uniform Consumer Credit Code (1996) in Australia;
- iv. and other related forms in the European Union and other regions.

However, this approach to information regulation has instigated other adverse effects within the consumer credit markets – information oversupply. Financial information regulation has increased the supply of information in consumer credit markets. Information supply has been exacerbated by the liberalisation of financial institutions. The liberalisation of the financial services market has had the effect of placing financial institutions of different classes into direct competition for customers, thereby intensifying marketing campaigns directed at consumers (Braucher 2004; Kerr & Dunn 2008).

There is anecdotal evidence to suggest that consumer financial markets, and consumer credit markets in particular, are subjected to financial information oversupply, and that information oversupply impedes on individual (or household) decision optimisation (Hiu, Siu, Wang, & Chang 2001; Walsh, Mitchell, & Hennig-Tharau 2001). The role and nature of information oversupply in the consumer credit markets is not well understood, and it is the objective of this paper to contribute towards filling this gap. In particular, the paper contributes to the literature by exploring the underlying factors attributable to the individual's perception to information oversupply in consumer credit markets. Next to be discussed is a review of the regulatory state of consumer credit markets and the definition of information oversupply. Thereafter is a discussion on methodology, data analysis and results. The paper concludes with a discussion on the findings, research limitations and a suggestion for areas for future research.

## **2. Financial Information Oversupply and Its Effects in Consumer Credit Markets**

In an ideal, perfectly efficient consumer financial market, information asymmetry does not exist. Thus, lenders compete for market share on the basis of price and other market related terms and individual borrowers and investors engage in a judicious, effective and optimal decision making process in acquiring and using financial instruments (Lee & Hogarth 1999a). In consumer credit markets, indications are that individuals are not taking actions that maximise their financial wellness (Ferretti 2007; Lee & Hogarth 1999a; Malbon 2001). This perspective has been used as a justification for governments' intervention by means of market regulation, and in particular prescribed minimum financial information disclosures as has been illustrated earlier in the paper. Ordinarily, the information required to be disclosed by lenders under the 'Truth in Lending' regime includes finance charges as an annual percentage rate (a practice which makes it more effective and easier to compare credit contracts with different time periods, finance charges, repayment schedules and amounts borrowed (Garman & Fogue 2000; Kerr & Dunn 2008)), the calculation of interest charges, the amount of repayments, other fees and charges, and other non-price information details (Lee & Hogarth 1999a; Malbon 2001). The wisdom of the approach lies in creating transparency in the operations of lenders on matters relating to service availability, price and lending terms and conditions, thereby arming individuals with information that would enable them to make informed financial decisions (Braucher 2004; Kidane & Mukherji 2004; Kilborn 2005; Malbon 2001).

Statutory financial disclosures, coupled with technological innovations that have made the production, retrieval and distribution of information easy, have led to information propagation and oversupply (Kozup, Howlett, & Pagano 2008; Waddington 1997). Thus borrowers have been observed to be barraged by an aggregate mass of financial data involving disclosures that are extensive and complex (Lee & Cho 2005; Lee & Hogarth 1999b). Also, a proliferation of credit product choices and a wide permutation of credit terms at the borrowers' disposal have been observed (Bernthal, Crockett, & Rose 2005). Overall, information disclosure and dissemination characteristic of the present-form financial regulatory architecture has been found so formidable as to breed financial information oversupply (Lee & Cho 2005).

Information oversupply has adverse effects on individual/household rationalisation and decision-making processes. There is empirical evidence indicative that consumers have a threshold to the amount of information that they can acquire and efficiently process. A study by Jacoby, Kohn, & Speller (1973) found that despite the increase in the time spent by consumers acquiring information, as the number of product brands increased, there was a threshold at which the time spent on information acquisition declined as the information on each brand increased. Further, the study found that although consumers felt happier with the provision of more information, the optimality of their decisions based on increased information regressed. The study concluded that there is an upper limit to the cognitive ability of an individual to absorb and assimilate new additional information to a given decision-making situation. Once that ceiling is exceeded, the individual becomes dysfunctional, a condition which negatively affects their rationalisation.

Other researchers supported the notion of consumer cognitive threshold and information overload by Jacoby et al. (1973). For example Payne (1976) found individuals to readily eliminate some alternatives hastily when confronted with complex decision tasks. It was reasoned that the observed behaviour was directed at reducing the complexity of the situation to a level within the individual's cognitive threshold. Congruent outcomes were found in a study by Wright (1975). In studies conducted in different countries, information oversupply was found to play an increasingly significant role in inhibiting optimal decision making in today's information cluttered marketplace (Hui et al. 2001; Walsh et al. 2001). In sum, while the supply of information is intuitively a commendable notion, information oversupply has a reversal (or negative) impact on individuals' wealth maximisation/optimisation function. In this respect, the financial information supply factor of any given regulatory regime forms a critical element to its success or failure. Ironically, the underlying factors that influence consumer perception to this important factor of financial information oversupply have not been explored a priori.

### **3. The Proposed Theoretical Model**

Information oversupply is not an easy concept to define and measure, particularly considering that there is limited available literature on the concept. For purposes of this study, individual perception of financial information oversupply is conceptualised as the individual perceived degree of proliferation of financial information and financial instruments in the consumer markets. Specifically, the individual perception to financial information oversupply is characterised by the extent to which individuals regard the consumer financial markets as congested with financial information and financial product choices, and the associated level of confusion reminiscent thereof (Hui et al. 2001; Lee & Cho 2005; Walsh et al. 2001).

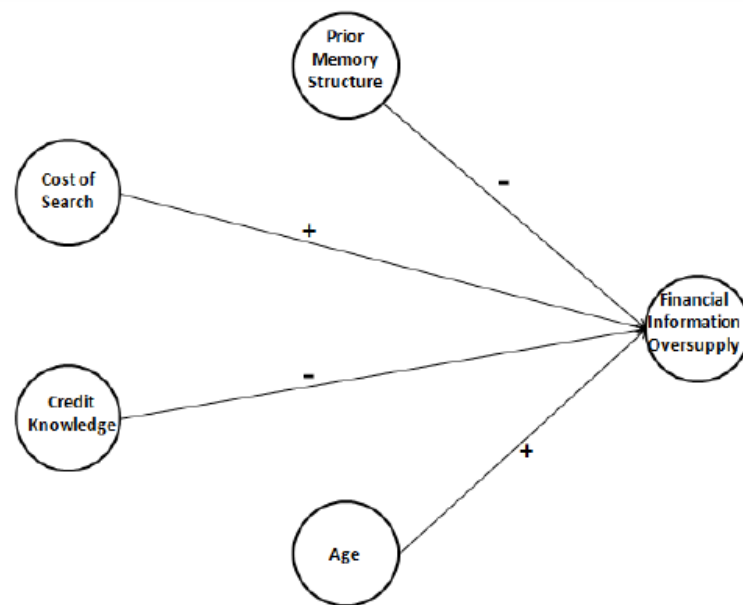
The process of developing the proposed theoretical model was guided by the principle of parsimony and comprehensiveness. It was therefore considered imperative to incorporate prominent variables from both the economic and the cost/benefit theoretical streams of consumer financial behaviour. The psychological stream is concerned with individuals' cognitive abilities and motivation to invest their time and effort into a decision-making process (Rischkowsky & Doring 2008). This theoretical perspective operates from the premise that individuals' inclination to actively engage in cognitive information processing is affected by individual constraints, threshold, aspirations and

capabilities (Thøgersen 2005; Gallagher 1997). In this respect, the psychological theoretical stream advocates that elements associated with individual's memory, cognitive strengths and motivation influence their perception, and hence behaviour (Datta & Chatterjee 2008).

An alternative stream theorises individuals to behave in a manner which maximises their net expected gains construed from estimates of the difference between expected positive and negative utility (Kulviwat, Guo, & Engchanil 2004; Peter & Tarpey 1975). From this premise, the cost/benefit stream suggests that individuals' propensity towards an active engagement will be sustained for as long as the perceived marginal benefit exceeds the associated cost of their actions (Kim & King 2009; Schmidt & Spreng 1996; Srinivasan & Ratchford 1991).

The two streams are intricately intertwined (Fodness & Murray 1999; Guo 2001) and when combined they amplify a model's explanatory strength (Gursoy & McCleary 2003; Kulviwat et al. 2004). The proposed theoretical model posits that Consumer Perception to Financial Information Oversupply is influenced by the factors of Prior Memory Structure, Cost of Information Search, Credit Experience and Age. The proposed model is shown in Figure 1.

**Figure 1:** The proposed model of consumer perception to financial information oversupply



### 3.1. Prior Memory Structure

Prior memory structure embodies individual's knowledge structure and problem-solving capabilities (Lin & Lee 2004). High prior memory structures represent an advanced cognitive analytical process that enables complex information gathering and processing capabilities (Alba & Hutchinson 1987; Urbany, Dickson, & Wilkie 1989). Therefore, to the extent that high prior memory structure proxy superior individual cognitive abilities, it is postulated that individuals with high prior memory structure are less susceptible to the perception of financial information oversupply.

Also, prior memory structure has been found to induce extended rationalisation on the part of individuals (Kiel & Layton 1981; Srinivasan & Ratchford 1991). Therefore it can be construed that individuals with a high prior memory structure spend time in financial markets and command high levels of understanding of the financial domain. In this respect, such individuals are sharply efficient in gathering and organising the plethora of available financial information and hence less predisposed to the perception to financial information oversupply. Hence prior memory structure is hypothesised to be negatively related to perceived financial information oversupply. Thus;

H1 Individual perceived financial information oversupply is negatively related to prior memory structure.

### **3.2. Cost of Information Search**

The cost of information search is defined as the sum total of all subjectively assessed monetary expense; time sacrifice; physical effort; and psychological sacrifice endured during an information acquisition exercise (Kulviwat et al. 2004; Schmidt & Spreng 1996; Srinivasan & Ratchford 1991). Search costs involve expenditure of resources, and hence dissuade the information search effort (Kim & King 2009). Studies have found a negative relationship between search cost and information gathering effort (Beatty & Smith 1987; Punj & Staelin 1983).

As already indicated, cost of search are resources, financial- and time-related, that are invested in the normal course of gathering information (Kulviwat et al. 2004). In this light, cost of information search is an investment outlay assumed to render some benefits. It therefore follows that the availability, or lack thereof, of such resources would affect the search activity, and hence rationalisation. In particular, time and financial constraints would curtail an individual's exposure to the financial markets and, hence, limit financial acumen.

Following from the same argument, the deficiency in the necessary resources to gather and absorb information is expected to exacerbate an individual's perception of financial information oversupply within the financial markets. It is therefore postulated that individuals who are either time constrained or consider the information gathering process as pricey, or both, are not predisposed to the process of sifting, gathering, organising and analysing financial information from the marketplace. It is thus hypothesised that the Cost of Information Search is positively related to perceived financial information oversupply. Thus;

H2 Individual perceived financial information oversupply is positively related to cost of information search.

### **3.3. Credit Knowledge**

Credit knowledge is defined as an individual's prior exposure to credit-specific information and credit-specific knowledge that is readily accessible to a decision-maker from memory (Beatty & Smith 1987; Srinivasan & Ratchford 1991). Credit knowledge is accrued through previous credit acquisition experiences, previous financial information gathering activities, and active and passive prior exposures to credit markets. For example, credit experience is gained by means of visual, verbal, and such sensory stimuli as advertisements, newspapers, magazines, television and the internet (Gursoy & McCleary 2003). Studies indicate that prior knowledge and experience boosts confidence in the adequacy of an individual's abilities to understand and be analytical (Kulviwat et al. 2004). In this regard, high levels of experience have been associated with an effortful rationalisation process because of the high ability and/or confidence to manage challenging situations and environments, such as increased information. From the same vein, it is posited that credit knowledge equips consumers with the necessary skill and aptitude to be able to readily separate relevant information from the irrelevant (Srinivasan & Ratchford 1991). Thus, it is suggested that higher levels of credit knowledge increase one's ability to identify, locate, process and assimilate relevant information (Klein & Ford 2003; Schmidt & Spreng 1996), hence postulated to be negatively related with perceived financial information oversupply. Thus:

H3 Individuals perceived financial information oversupply is negatively related to credit knowledge.

### **3.4. Age**

The age of an individual is another factor that is suggested to influence consumer perception of financial information oversupply. It is postulated that age, from psychological and neurological perspectives, increases the hardship of information gathering, comprehension and analysis, and thus

diminishes individuals' rationalisation processes (Klein & Ford 2003; Lin & Lee 2004). Previous studies have found older individuals to readily rely more on internal memory information than younger individuals (Beatty & Smith 1987). Thus older individuals have a propensity to disengage from the complexities of the consumer financial markets due to the increased susceptibility to information overload. Older individuals are probably likely to find credit markets particularly psychological and neurological taxing due to the complexity of financial information and the language or jargon lenders use (Chang & Hanna 1992). It is therefore postulated that individual perception of financial information oversupply is positively related to the age of the consumer. Thus:

H4 Individuals perceived financial information oversupply is positively related to the age of consumer.

Next discussed are the research methods used in the study and the results.

#### **4. Research Methods**

The process of drafting a sampling plan for this research was guided by principles of population representation and research generalisability. To achieve this objective, a quasi-random sampling method was adopted in gathering primary data from the general members of the public (Hair et al. 2003). Also, the study strived to achieve representation across the demographics divide of the targeted population by:

- i. conducting the research in the city of Melbourne, Australia. The city offered a population demographic distribution that is diverse and comparable to other Australian major cities (Australian Bureau of Statistics 2006);
- ii. conducting the research over a reasonably large geographic area, covering twelve postal codes;
- iii. covering a variety of community centres, including schools, social clubs and a mall.

The targeted population were individuals who had acquired credit for personal use in the past 12 months. A timeframe was imposed on the period after the acquired credit with a purpose to enhance data validity by, for example, minimising on the effect of selective memory and memory decay on the reliability of measures (Guo 2001). Other practical measures taken to enhance data validity included adopting measures oriented toward capturing particular credit search behaviour, as opposed to passive behaviour. Also, the questionnaire placed emphasis on the credit generally considered important by borrowers. Schmidt & Spreng (1996) argued that such measures enhance data validity.

Potential respondents were randomly intercepted in various locations and requested to complete a questionnaire. In consideration of the nature of the subject matter being investigated and the advantages of the personally-administered questionnaire technique, this survey technique was found most appropriate and thus adopted. A total of 600 questionnaires were distributed and completed by respondents, with 245 cases found usable for this research. The questions used were part of a larger survey.

The sample constituted of 56% females and 44% males, with most of the respondents (34.4%) falling in the age-group of 31-40 years. In this regard, there was a reasonable demographic spread of respondents in the sample. The amount of credit acquired ranged between \$50 and \$5,000, with a mean amount of \$1,351. Respondents that had acquired a credit amount above AU\$500 accounted for 82.6%. Overall, the credit amount acquired was considered substantial to warrant a fairly reasonable degree of financial rationalisation on the part of the respondents. Also, given the substantiality of the amount of credit sourced, coupled with the relatively short time lapse between credit acquisition and participation in the survey, it was reasoned that the potential effect of 'memory decay' on the collected data had been minimised.

#### 4.1. Measures

To the extent possible, existing measures were adopted and adapted to the study. Also, most of the factors were measured using multi-item measures in order to increase scale reliability and validity, and to capture the multiple dimensions associated with a factor (Schumacker & Lomax 2004). The recommended 7-point semantic differential scale was used to measure most variables (Wong & Merrilees 2007). The details of variable operationalisation and scale reliability are shown in Table 1.

Perceived Financial Information Oversupply was operationalised by adapting Sproles and Kendalls, (1986) measure for 'Confusion from Overchoice'. Confusion from Overchoice measured the extent to which a consumer was overwhelmed/confused by information and product choice, and the scale validity was confirmed by other studies (Hui et al. 2001; Walsh et al. 2001). In this respect, perceived Financial Information Oversupply was operationalised as a measure of the degree to which an individual perceived the proliferation of credit information and products, and the associated degree of confusion and was represented by three items.

Cost of Information Search was operationalised using the two well established dimensions of perceived out-of-the-pocket expenses incurred (monetary) (Gursoy & McCleary 2003) and the perceived time constraint experienced (temporal) (Klein & Ford 2003) in the normal course of rationalising a credit decision. The time cost dimension was represented by a three-item scale which captured time constraint attributable to the urgency of the decision and the general unavailability of time during the credit search process. The monetary cost dimension was represented by a two-item scale which captured the perceived costliness of gathering the required amount of information on credit facilities (Srinivasan & Ratchford 1991).

Prior Memory Structure was conceptualised as the individual's knowledge levels in a general sense and the perceived adequacy of the knowledge of credit facilities and has in previous studies been operationalised in a myriad of ways, to include: experience with the product domain; level of education; and confidence in the adequacy of own knowledge levels (Kulviwat et al. 2004; Lin & Lee 2004; Punj & Staelin, 1983; Schmidt & Spreng 1996; Srinivasan & Ratchford 1991). In this study, prior memory structure was operationalised to capture the multiple-dimensions of self-assessed adequacy of an individual's knowledge of credit facilities and the highest level of education as a measure of the consumer's ability to learn, develop skills and assimilate relevant information.

Cognisant of the importance of cost of credit on individual's credit decisions (Lee & Hogarth 2000b), and by adapting an approach similar to that used by Lee & Hogarth (1999a) in a study of individuals' credit knowledge, Credit Knowledge was conceptualised as the level of individuals' understanding of the cost of credit. Credit Knowledge was conceptualised as the individual's knowledge of the cost of credit across a range of credit instruments and was measured using a question that required respondents to rank four common instruments of personal credit in the order of usury (interest rate charge). A set of binary variables was created to indicate whether each of the instruments were ranked appropriately (0 = incorrect, 1 = correct) and an aggregate measure was obtained by summing the assigned scores (Lee & Hogarth 2000a).

The respective factors were thereafter computed from their respective items. Finally, the factor of respondent's age was measured using a six-point ordinal scale which required the respondent to indicate the age bracket in which they belonged.

#### 4.2. Reliability

The Cronbach's coefficient alpha was used to measure for inter-item stability and consistency (Pallant 2001). As a guide, Cronbach's alpha values greater than or equal to 0.6 were considered acceptable (Robinson, Shaver, & Wrightsman 1991), with values greater than 0.7 preferred (Hair, Black, Babin, Anderson, & Tatham 2006). The Cronbach's coefficient alpha for the multiple-measured factors ranged 0.64 - 0.86, and thus scale reliability was confirmed. Other practical measures were taken to enhance scale reliability. In particular, the recommended strategies of clarity of instructions and matching the grammar to the reading abilities of the targeted sample were taken into account in



drafting and presenting the questionnaire (Pallant 2001). The operationalisation of factors and scale reliability are shown in Table 1. With the validity of measures ascertained and scale reliability confirmed, the hypothesised relationships were tested using the SPSS (version 16) programme.

**Table 1:** Operationalisation of factors and scale reliability

Factor	Cronbach's Alpha	Question (abridged version)
Perceived Financial Information Oversupply <sup>a</sup>	0.86 (3)*	I find comparing credit facilities a confusing task. The more I try to learn about credit facilities, the more confused I seem to get. There are too many different types of credit facilities to choose from. I felt it took a lot of time to search for information on credit facilities.
Cost of Search <sup>b</sup>	0.78 (5)	I had to make a quick purchase decision. I had little time to search for information on credit facilities. It is costly to obtain information about credit facilities.
Prior Memory Structure <sup>c</sup>	0.64 (3)	I need to spend some money in order to obtain adequate information on credit. I know a lot about credit facilities compared to most of the people I know. If I had to get a loan today, I would need to gather very little information in order to make a wise decision.
Age	- (1)	Highest level of education attained. Respondent's age (six-point ordinal scale).
Credit Knowledge <sup>d</sup>	- (1)	Correctly ranking four instruments of consumer credit in the order of cost using the interest rate charge and summing the scores.

<sup>a</sup>(Hui et al., 2001; Sproles & Kendall, 1986; Walsh et al., 2001)

<sup>b</sup>(Heaney & Goldsmith, 1999; Srinivasan & Ratchford, 1991)

<sup>c</sup>(Bruner & Hensel, 1996; Chang & Hanna, 1992; Lin & Lee, 2004; Smith & Park, 1992)

<sup>d</sup>(J. Lee & Hogarth, 1999a)

(#)\* is the number of items representing a factor

### 4.3. Analysis of Data

The influence of Cost of Information Search, Prior Memory Structure, Credit Knowledge and Age on individual's perception of Financial Information Oversupply in the consumer financial markets was tested by performing the standard multiple regression analysis, wherein Financial Information Oversupply was the dependent variable and the other four factors were the independent variables. The standard multiple regression method was used due to lack of both a priori theoretical knowledge and statistical criteria for weighting or ranking the four independent variables (Ho 2006). In this regard, the independent variables were entered simultaneously into the equation.

The collinearity statistics of tolerance (range: 0.85 – 0.93) and 'VIF' (range: 1.07 – 1.18) indicated values that were within the recommended ranges of greater than 0.10 and less than 10.0 (Ho 2006), respectively. Further, the 'condition index' indicated values that were within the recommended range of less than 15 (Ho 2006). It was thus concluded that the multicollinearity assumption of regression was satisfied (Pallant 2001).

The linear combination of Cost of Information Search, Prior Memory Structure, Credit Knowledge and Age was found to be significantly related to Financial Information Oversupply,  $F(4, 240) = 32.13, p < .001$ . The sample yielded a multiple correlation coefficient of 0.59, resulting in an adjusted R square of 34%. Table 2 presents the standardised regression coefficients with their respective t-values for each of the predictor factors.

**Table 2:** Standard regression analysis results

Predictor Factors	Standardized Regression Coefficients	t-values	Sig.
Cost of Search	0.61	11.17	.00
Prior Memory Structure	-0.12	-2.03	.04
Credit Knowledge	0.01	0.09	.93
Age	-0.04	-0.64	.52



The results of the standard regression analysis indicated that Cost of Information Search ( $B = 0.61$ ,  $t = 11.17$ ,  $p < .01$ ) and Prior Memory Structure ( $B = -0.12$ ,  $t = -2.03$ ,  $p < .05$ ) were the only predictor factors with a statistically significant relationship with Financial Information Oversupply. Credit Knowledge and Age were found not to be statistically related to the dependent variable.

#### **4.4. Hypothesis Test Results**

*Hypothesis 1* postulated that individual's perceived financial information oversupply was negatively related to prior memory structure. The results indicated a standardised regression path coefficient of  $-0.12$  with a  $t$ -value of  $-2.03$  that was statistically significant at  $p < 0.05$ . The hypothesis was therefore supported.

*Hypothesis 2* postulated that individual's perceived financial information oversupply was positively related to cost of information search. The results indicated a standardised regression path coefficient of  $0.61$  with a  $t$ -value of  $11.17$  that was statistically significant at  $p < 0.01$ . The hypothesis was therefore supported.

*Hypothesis 3* postulated that individual's perceived financial information oversupply was negatively related to credit knowledge. The results indicated a standardised regression path coefficient of  $0.01$  with a  $t$ -value of  $0.09$  that was non-statistically significant at  $p > 0.05$ . The hypothesis was therefore not supported.

*Hypothesis 4* postulated that individual's perceived financial information oversupply was negatively related to the age of consumer. The results indicated a standardised regression path coefficient of  $-0.04$  with a  $t$ -value of  $-0.64$  that was non-statistically significant at  $p > 0.05$ . The hypothesis was therefore not supported.

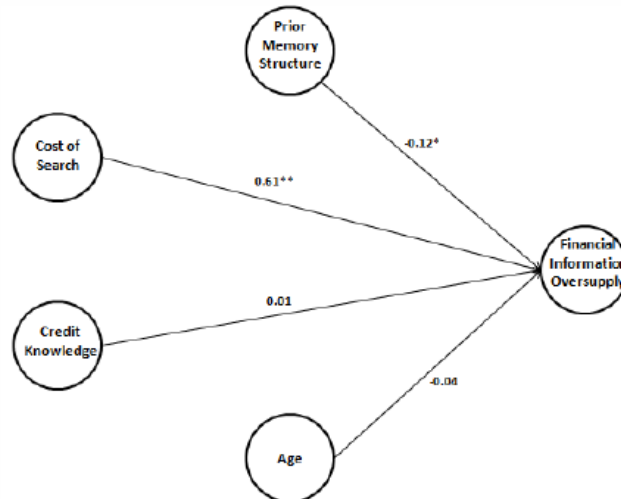
Next is a discussion on the research findings and the conclusions.

## **5. Discussion**

There is anecdotal evidence that consumers are not optimising their financial wellbeing partly due to the uncondusive information regulatory climate. In particular, the excessive supply of statutory financial information from lenders to borrowers has been suggested to impede on consumer financial decision-making processes and choices (Bernthal et al. 2005). It was the objective of this paper to explore the underlying determinants of individuals' perception to financial information oversupply to better understanding the plight of individuals and hence the aptness of the prevailing financial regulatory architecture. To this end, a theoretical model positing four predictor variables of individuals' perceived financial information oversupply was proposed and tested.

The proposed model was run using the standard regression analysis yielding an adjusted R square value of 34%. A summary of the hypothesis test results is shown in Figure 2.

Figure 2: Hypothesis test results summary



**Note:**

\*\* Standardised regression coefficient statistically significant at  $p < .01$

\* Standardised regression coefficient statistically significant at  $p < .05$

Adjusted R Square 34%

Hypothesis 1 stated that individuals' perceived financial information oversupply was negatively related to prior memory structure and empirical data supported this relationship. The findings suggested that individuals with increasingly advanced knowledge structure and cognitive analytical processes perceived the consumer financial markets as less information congested and overwhelming. These findings are consistent with the consumer information processing theory which suggests that increased prior memory structure facilitates processing of complex information and efficient information processing (Urbany et al. 1989).

Hypothesis 2 stated that individuals' perceived financial information oversupply was positively related to cost of information search and the data supported this relationship. The findings indicated that the cost of gathering information constrained the respondents' predisposition to financial information (Beatty & Smith 1987; Heaney & Goldsmith 1999; Punj & Staelin 1983). Thus, a resource-constrained individual forced by the circumstances to limit their information gathering activity would therefore have had limited prior exposure to financial market intricacies and hence the increased perception to financial information oversupply.

Hypothesis 3 stated that individuals' perceived financial information oversupply was negatively related to credit knowledge and the data did not support this relationship. Evidence from previous studies suggested that prior knowledge increased individual's ability to search, locate and assimilate relevant information, and thereby boosted confidence in the adequacy of one's abilities to comprehend complex and challenging situations or environments (Kulviwat et al. 2004). Considering that financial information oversupply is a fairly challenging situation, it was within reason to expect consumer knowledge of credit to be negatively related to perceived oversupply of information. The reasons for these non-significant results are not quite obvious, although the role/effect of other factors not incorporated into the model cannot be ruled out.

Hypothesis 4 stated that individuals' perceived financial information oversupply was positively related to the age of an individual and the data did not support this relationship. Previous research findings had suggested that demographic factors, among them the age of an individual, play a role in the manner in which consumers operate in a given environment, for instance the way in which they gather and process information. In particular, age has been found to increase the hardship of gathering and processing information (Chang & Hanna 1992; Guo 2001; Klein & Ford 2003; Lin & Lee 2004). It

was in this regard that a positive relationship was posited between age and perceived information oversupply, especially considering that information oversupply poses particularly vexing cognitive challenges (Curzon, Wilson & Whitney 2005). There has, however, been an alternative argument which advances an indirect association between age and aptitude, mediated by knowledge or prior memory structure. In particular, the age of consumers is suggested to be positively correlated with knowledge, experience and/or prior memory structure, such that older individuals could readily rely more on internal (memory) information than younger individuals (Beatty & Smith 1987). In sum, the role played by age on consumer decision-making processes is equivocal and further research is required.

## **6. Conclusions and Implications**

This study advances the literature on consumer financial behaviour by proposing and testing a model which posited that individuals' perceived financial information oversupply in the financial markets is directly influenced by the four factors of Cost of Information Search, Prior Memory Structure, Credit Knowledge and Age. The Cost of Search and Prior Memory Structure were factors confirmed as antecedents of consumer perceived Financial Information Oversupply. Previous studies indicated that information oversupply led individuals to 'allocate their cognitive capacity to processing irrelevant, unclear and inaccurate data in order to find the needed information' (Lee & Cho, 2005, p. 95), a position which seems to be affirmed by findings in this paper. Thus, it could be concluded from the research findings that the Cost of Search exacerbates Perceived Information Oversupply in consumer financial markets, while Prior Memory Structure has the reverse effect. Prior Memory Structure increases the threshold of data absorption, organisation and processing (Urbany et al. 1989), and thereby reduces the perception of data smog. Resource constraint, conversely, limits an individual's exposure to the market and the disposition to market/product information (Beatty & Smith 1987; Heaney & Goldsmith 1999; Punj & Staelin 1983) and hence diminishes their financial aptitude.

The research findings from the study have implications to policy and practice. To the extent that information oversupply, perceived or otherwise, is more detrimental than helpful in a decision-making process (Kozup & Hogarth 2008), and hence a liability, efforts should be directed at reducing its impact if consumers are to optimise their financial decisions and choices.

Drawing from the findings of the paper, the financial regulatory architecture driven by the notion of increased financial information has an unintended derivative that requires management – information oversupply. Drawing from previous research, financial information oversupply has the potential to reverse the provisional benefits of the informational content. It therefore becomes imperative that measures are put in place to limit the impact of information oversupply if any semblance of market efficiency is to be achieved.

Empirical results of the paper suggest that efforts should be directed at cutting down on the time and effort required by the consumer to browse, locate, sort and amalgamate decision-relevant information from the masses of available data, and thus reducing the cost, financial and temporal, of information gathering. In consideration of the positive relationship between the cost of search and information oversupply, reduced information costs will alleviate the perception of information oversupply within the consumer financial markets. One of the strategies that have been suggested is the provision of summary financial information (Kozup et al. 2008). By repackaging and delivering information in a form and manner such that it minimises the out-of-pocket expenses, the opportunity cost of time and the psychological effort expended in gathering and processing the information (Fodness & Murray 1999; Gursoy & McCleary 2003; Lin & Lee 2004), the supply of information would be better managed and consumer's receptivity of the message carried in promotional campaigns enhanced. This strategy is particularly relevant to consumer financial markets considering that financial information disclosures have been observed to be quite extensive and complex (Lee & Hogarth 1999b) and most likely to demand increased psychological effort and other costs to gather and process the presented information (Lee & Cho 2005). Also, individuals are becoming more time- and budgetary-

constrained (Thøgersen 2005), and therefore precise and easy to reach information on credit products, lending terms and conditions could aid in creating a better informed-consumer credit market.

Second, the study findings indicate that the perception of information oversupply diminishes with increased levels of prior memory structure. It therefore follows that by improving on individuals' prior memory structure, their cognitive and information processing capacity would be extended, and thereby reducing their susceptibility to information overload and thus optimise their financial decisions (Jacoby, Speller, & Kohn 1974; Payne 1976). By investing in human capital through improving national levels of educational attainment in general and financial education in particular, individuals' ability to identify, locate, understand, evaluate and use information effectively in solving their problems would increase (Lee & Cho 2005). This will, in turn, improve consumer financial decisions and choices (Fox, Bartholomae, & Lee 2005; Kozup & Hogarth 2008), and ultimately contribute towards overall market efficiency. To be included in the educational campaign are facts on the benefits, risks and charges on consumer financial instruments.

Overall, the study findings show some evidence that information oversupply is an integral component of consumer financial behaviour and hence should be further investigated to better understand consumer debt and bankruptcy problems, among others. That way, market efficiency would be advanced by means promoting a rational-borrower/investor-driven market (Lee & Hogarth 1999a).

The study had shortcomings. First, the data collection method adopted in the study did not use probability sampling and also the respondents may have been geographically localised to an area in Melbourne. These limitations may affect the generalisability of the research findings, and hence the study findings should be interpreted with caution. Second, some of the hypothesised relationships were not supported by data, despite the supporting literature. It is possible that there are other factors other than those captured in the model that were at play. The paper is exploratory and the results are encouraging. Considering the importance of this subject matter and the significance of its role in the global economy, further research is warranted towards addressing the shortcomings of this paper, improving on the measures used (particularly in conceptualising Information Oversupply) and developing and testing more comprehensive models.

## References

- [1] Alba, J. W., & Hutchinson, J. W., 1987. "Dimensions of Consumer Expertise", *Journal of Consumer Research*, 13, pp. 411-453.
- [2] Australian Bureau of Statistics. 2006. *Australian Bureau of Statistics*
- [3] Beatty, S. E., & Smith, S. M., 1987. "External Search Effort: An Investigation Across Several Product Categories", *Journal of Consumer Research*, 14, pp. 83-95.
- [4] Beder, S., 2009. "Neoliberalism and the Global Financial Crisis", *Social Alternatives*, 28, pp. 17-21.
- [5] Begg, I. 2009. "Regulation and Supervision of Financial Intermediaries in the EU: The Aftermath of the Financial Crisis", *Journal of Common Market Studies*, 47, pp. 1107-1128.
- [6] Bernthal, M. J., Crockett, D., & Rose, R. L., 2005. "Credit Cards as Lifestyle Facilitators". *Journal of Consumer Research*, 32, pp. 130-145.
- [7] Braucher, J., 2004. "Consumer Bankruptcy as Part of the Social Safety Net: Fresh Start or Treadmill", *Santa Clara Law Review*, 44, pp. 1065.
- [8] Bruner, G. C., & Hensel, P. J., 1996. "Marketing Scales Handbook - A Compilation of Multiple-Item Measures", *American Marketing Association*, Chicago.
- [9] Carmassi, J., Gros, D., & Micossi, S., 2009. "The Global Financial Crisis: Causes and Cures". *Journal of Common Market Studies*, 47, pp. 977-1003.
- [10] Chang, R. Y., & Hanna, S., 1992. "Consumer Credit Search Behaviour". *Journal of Consumer Studies and Home Economics*, 16, pp. 207-227.
- [11] Crotty, J., 2009. "Structural Causes of the Global Financial Crisis: A Critical Assessment of the 'New Financial Architecture'". *Cambridge Journal of Economics*, 33, pp. 563-580.

- [12] Curzon, P., Wilson, J., & Whitney, G, 2005. "Successful Strategies of Older People for Finding Information", *Interacting with Computers*, 17, pp. 660-671.
- [13] Datta, P., & Chatterjee, S, 2008. "The Economics and Psychology of Consumer Trust in Intermediaries in Electronic Markets: The EM-Trust Framework". *European Journal of Information Systems*, 17, pp. 12-28.
- [14] Ferretti, F, 2007. "Consumer Credit Information Systems: A Critical Review of the Literature. Too Little Attention Paid by Lawyers?" *European Journal of Law and Economics*, 23, pp. 71-88.
- [15] Fodness, D., & Murray, B, 1999. "A Model of Tourist Information Search Behavior". *Journal of Travel Research*, 37, pp. 220-230.
- [16] Fox, J., Bartholomae, S., & Lee, J, 2005. "Building the Case for Financial Education". *The Journal of Consumer Affairs*, 39, pp. 195-214.
- [17] Gallagher, K. (1997), "Globalisation and Consumer Culture. Overview Essay". In N. R. Goodwin, F. Ackerman & D. Kiron (Eds.), *The Consumer Society*, Washington, DC: Island, pp. 301-308.
- [18] Garman, E. T., & Forgue, R. E, 2000. "Personal Finance" (6 ed.). *Houghton Mifflin Company*, Boston.
- [19] Guo, C, 2001. "A Review on Consumer External Search: Amount and Determinants". *Journal of Business Psychology*, 15, pp. 505-519.
- [20] Gursoy, D., & McCleary, K. W, 2003. "An Integrative Model of Tourists' Information Search Behavior". *Annals of Tourism Research*, 31, pp. 353-373.
- [21] Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L, 2006. "Multivariate Data Analysis" (6 ed.). *Pearson Prentice Hall*, New Jersey.
- [22] Heaney, J., & Goldsmith, R. E, 1999. "External Information Search for Banking Services". *International Journal of Bank Marketing*, 17, pp. 305-323.
- [23] Hiu, A. S. Y., Siu, N. Y. M., Wang, C. C. L., & Chang, L. M. K, 2001. "An Investigation of Decision-Making Styles of Consumers in China", *The Journal of Consumer Affairs*, 35, pp. 326-345.
- [24] Ho, R, 2006. "Handbook of Univariate and Multivariate Data Analysis and Interpretation with SPSS". *Chapman and Hall*, Florida.
- [25] Jacoby, J., Kohn, C. A., & Speller, D. E, 1973. "Time Spent Acquiring Product Information as a Function of Information Overload and Organisation". *Paper presented at the American Psychology Association's 81st Annual Convention*.
- [26] Jacoby, J., Speller, D. E., & Kohn, C. A, 1974. "Brand Choice Behavior as a Function of Information Load". *Journal of Marketing Research*, 11, pp. 63-69.
- [27] Kay, J, 2009. "The Long and the Short of it: A Guide to Finance and Investment for Normally Intelligent People Who Aren't in the Industry". *Erasmus Press*, London.
- [28] Kerr, S., & Dunn, L, 2008. "Consumer Search Behavior in the Changing Credit Card Market". *Journal of Business and Economic Statistics*, 26, pp. 345-353.
- [29] Kidane, A., & Mukherji, S, 2004, "Characteristics of Consumers Targeted and Neglected by Credit Card Companies". *Financial Services Review*, 13, pp. 185-198.
- [30] Kiel, G. C., & Layton, R. A, 1981. "Dimensions of Consumer Information Seeking Behaviour". *Journal of Marketing Research*, 18, pp. 233-239.
- [31] Kilborn, J. J, 2005. "Behavioural Economics, Over-Indebtedness and Comparative Consumer Bankruptcy: Searching for Causes and Evaluating Solutions". *Emory Bankruptcy Developments Journal*, 22, pp. 13-45.
- [32] Kim, W. J., & King, K. W, 2009. "Product Category Effects on External Search for Prescription and Nonprescription Drugs". *Journal of Advertising*, 38, pp. 5-19.
- [33] Klein, L. R., & Ford, G. T, 2003, "Consumer Search for Information in the Digital Age: An Empirical Study of Prepurchase Search for Automobiles". *Journal of Interactive Marketing*, 17, pp. 29-49.

- [34] Kozup, J., & Hogarth, J. M, 2008, "Financial Literacy, Public Policy, and Consumers' Self-Protection - More Questions, Fewer Answers". *The Journal of Consumer Affairs*, 42, pp. 127-136.
- [35] Kozup, J., Howlett, E., & Pagano, M, 2008. "The Effects of Summary Information on Consumer Perceptions of Mutual Fund Characteristics" *The Journal of Consumer Affairs*, 42, pp. 37-59.
- [36] Kulviwat, S., Guo, C., & Engchanil, N, 2004. "Determinants of Online Information Search: A Critical Review and Assessment. *Internet Research*", 14, pp. 245-253.
- [37] Lee, C. S. K, 1986. "A Market Segmentation Analysis of A Retail Financial Service Market: Application of Attribute Importance and Financial Lifestyle as Segmentation Basis". *Unpublished PhD Thesis, University of Texas at Austin, Austin*.
- [38] Lee, J., & Cho, J. (2005). Consumers' Use of Information Intermediaries and the Impact on their Information Search Behavior in the Financial Market. *The Journal of Consumer Affairs*, 39(1), 95-120.
- [39] Lee, J., & Hogarth, J. M, 1999a. "The Price of Money: Consumers' Understanding of APRs and Contract Interest Rates". *Journal of Public Policy and Marketing*, 18, pp. 66-76.
- [40] Lee, J., & Hogarth, J. M, 1999b. "Returns to Information Search: Consumer Mortgage Shopping Decisions". *Financial Counseling and Planning*, 10, pp. 49-66.
- [41] Lee, J., & Hogarth, J. M, 2000a. "Consumer Information Search for Home Mortgages: who, what, how much, and what else?" *Financial Services Review*, 9, pp. 277-293.
- [42] Lee, J., & Hogarth, J. M, 2000b. "Relationships Among Information Search Activities When Shopping for a Credit Card". *The Journal of Consumer Affairs*, 34, pp. 330-360.
- [43] Lin, Q. C., & Lee, J, 2004. "Consumer Information Search When Making Investment Decisions". *Financial Services Review*, 13, pp. 319-332.
- [44] Malbon, J, 2001. "Shopping for Credit: An Empirical Study of Consumer Decision-Making". *Australian Business Law Review*, 29, pp. 44-64.
- [45] Pallant, J, 2001. "SPSS Survival Manual". *Allen and Unwin, Canberra*.
- [46] Payne, J, 1976). "Task Complexity and Contingent Processing in Decision-Making: An Information Search and Protocol Analysis". *Organizational Behavior and Human Performance*, 16, pp. 366-387.
- [47] Peter, J. P., & Tarpey, L. X, 1975. "A Comparative Analysis of Three Consumer Decision Strategies" *Journal of Consumer Research*, 2, pp. 29-37
- [48] Punj, G. N., & Staelin, R, 1983. "A Model of Consumer Information Search Behavior for New Automobiles". *Journal of Consumer Research*, 9, pp. 366-380.
- [49] Rischkowsky, F., & Doring, T, 2008. "Consumer Policy in a Market Economy: Considerations from the Perspective of the Economics of Information, the New Institutional Economics as well as Behavioural Economics". *Journal of Consumer Policy*, 31, pp. 285-313.
- [50] Robinson, J. P., Shaver, P. R., & Wrightsman, L. S, 1991. "Criteria for Scale Selection and Evaluation". In J. P. Robinson, P. R. Shaver & L. S. Wrightsman (Eds.), "Measures of Personality and Social Psychological Attitudes". *Academic Press, San Diego, CA*.
- [51] Santomero, A. M, 2001. "Perspectives on Research Issues in Consumer Behaviour". *Business Review - Federal Reserve Bank of Philadelphia*, Third Quarter, pp. 1-4.
- [52] Schmidt, J. B., & Spreng, R. A, 1996. "A Proposed Model of External Consumer Information Search". *Journal of the Academy of Marketing Science*, 24, pp. 246-256.
- [53] Schumacker, R. E., & Lomax, R. G, 2004. "The Beginner's Guide to Structural Equation Modeling" (2nd ed.). *Lawrence Erlbaum Associates Inc, New Jersey*.
- [54] Smith, D. C., & Park, W. C, 1992. "The Effects of Brand Extensions on Market Share and Advertising Efficiency". *Journal of Marketing Research*, 29, pp. 296-313.
- [55] Sproles, G., & Kendall, E. L, 1986). "A Methodology for Profiling Consumers' Decision-Making Styles". *The Journal of Consumer Affairs*, 20, pp. 267-279.

- [56] Srinivasan, N., & Ratchford, B. T, 1991. "An Empirical Test of a Model of External Search for Automobiles". *Journal of Consumer Research*, 18, pp. 233-242.
- [57] Thøgersen, J, 2005. "How May Consumer Policy Empower Consumers for Sustainable Lifestyles?" *Journal of Consumer Policy*, 28, pp. 143-178.
- [58] Urbany, J. E., Dickson, P. R., & Wilkie, W. L, 1989. "Buyer Uncertainty and Information Search". *Journal of Consumer Research*, 16, pp. 208-214.
- [59] Waddington, P. 1997. "Dying for Information? A Report on the Effects of Information Overload in the UK and Worldwide". *Beyond the Beginning: The Global Digital Library* Retrieved 23/05/2006, 2006, from <http://www.cni.org/regconfs/1997/ukoln-content/repor~13.html>
- [60] Walsh, G., Mitchell, V.-W., & Hennig-Tharau, T, 2001. "German Consumer Decision-Making Styles". *The Journal of Consumer Affairs*, 35, pp. 73-95.
- [61] Wong, H. Y., & Merrilees, B, 2007. "Closing the Marketing Strategy to Performance Gap: The Role of Brand Orientation". *Journal of Strategic Marketing*, 15, pp. 387-402.
- [62] Wright, P, 1975. "Consumer Choice Strategies: Simplifying vs. Optimising" *Journal of Marketing Research*, 12, pp. 60-67.