

Predicting Consumer Behavior in Retail Banking¹

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A critical measure largely neglected in previous loyalty studies is the customer's share of wallet (SOW), or the percentage of their business that they assign to one bank. Since banks generate different profits from savings, investment products and loans, this study, based on 1,951 retail banking customers, develops separate models predicting SOW for deposits, debts and loans; and percentages of accounts and credit cards used from a customer's main bank. The results suggest that about 25 to 65 percent of the variance in SOW can be predicted by demographic factors such as age, income and a customer's residential location. While overall satisfaction and affective attitude have generally been found to be strong predictors of behavioral intentions in the marketing literature, they were, together with service quality, not found to be unique predictors of SOW in this study.

The retail banking market in Australia, as in many other countries, is becoming increasingly competitive. The competitive battle at the present time is said to be around share of wallet (SOW), or the proportion of a consumer's business allotted to a single bank (Keiningham, Perkins-Munn, & Evans, 2003; Perkins-Munn, Aksoy, Keiningham, & Estrin, 2005). Banks realize that they need to retain profitable customers by at least maintaining or, better still, increasing customer loyalty by encouraging customers to conduct an increased percentage, if not all, of their banking business with one institution.

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While there is no consensus on the definition and measurement of loyalty, “there is little dispute that the concept of brand loyalty is important” (Rundle-Thiele & Mackay, 2001, p. 530) and the Marketing Science Institute declared customer loyalty measurement and valuation as a top-tier priority topic of greatest interest (Anonymous, 2002). Many studies provide the context for the research discussed in this paper. Gremler and Brown (1996) conclude that the relationship between satisfaction and loyalty has produced “mixed results” (p. 174), indicating that not all studies found evidence for a convincing link between these two constructs. The bulk of studies concur, however, that satisfaction is a leading factor in customer loyalty. Another factor influencing loyalty is perceived service quality: Zeithaml, Berry, and Parasuraman (1996) found strong evidence that behavioral intentions are influenced by service quality.

In banking, the relationship between satisfaction and loyalty has been studied by several authors with largely consistent results. For example Bloemer, Ruyter and Peeters (1998) examined the relationship between service quality, satisfaction and loyalty, and concluded that service quality has an indirect effect on loyalty via satisfaction, and that satisfaction has a direct effect on loyalty. They recommended that “further research is needed to gain additional insight into the explanation of bank loyalty” (p. 283), arguing that loyalty in banking is especially difficult to define and measure. In another study in retail banking, Hallowell (1996) found that customer satisfaction could explain 37 percent of the difference in customer loyalty levels. Satisfaction is usually defined as an attitude, and Baldinger and Rubinson (1996, p. 30) examined the association between attitude and behavior and found that “the stronger the attitudinal commitment ..., the more likely consumers were to remain loyal” and that “the relationship between attitude and behavior was predictive of changes in market share” (p. 31). These findings were supported by Page and Luding (2003).

There is thus good evidence for a relationship between customers’ attitudes and intentions in banking. There is, however, less evidence of how attitudes and intentions translate into actual behavior. For example, an early study in this field conducted by Jain, Pinson, and Malhotra (1987) explored customers’ propensity to switch banks. While the study’s results provide a good basis for hypothesis development, their Bank Loyalty Index is based only on stated intentions, not on actual behavior. This type of shortcoming is not uncommon in customer loyalty studies, where there has been limited research into the predictors of actual banking behavior. Jones and Sasser argued that SOW is the most important of these behavioral measures; “The ultimate measure of loyalty, of course, is share of purchases in the category” (1995, p. 94), but there has been surprisingly little research into the predictors of SOW by retail customers. Keiningham et al. (2003) examined share of wallet in a business-to-business (B2B) setting and concluded that “currently there is very little empirical research concerning the relationship between customer satisfaction and share-of-wallet” (p. 37). Their results suggest, at least in B2B, that the relationship between customer satisfaction and SOW is nonlinear and that the greatest positive impact on SOW occurs at the upper levels of satisfaction. In retail banking, Loveman (1998) examined the relationship between employee satisfaction, customer loyalty and

financial performance of the financial institution, and found evidence suggesting that these variables are significantly associated with each other.

The literature thus shows evidence of a relationship between attitude, satisfaction and loyalty, as measured by intentions. Furthermore, there is some evidence for business customers that suggests an association between satisfaction and behavior. Based on Day's notion (1969) that loyalty has two dimensions, behavioral and attitudinal, this study extends previous research and explores the extent to which specific customer characteristics can predict actual behavior, as measured by SOW. In order to do so, a model was developed based on Ajzen and Fishbein's work (1977), incorporating customer attitudes, satisfaction, the customer's environment such as family and friends (social norms) and situational factors (competing offers). Perceived service quality was also included, based on the five SERVQUAL dimensions: tangibles, reliability, responsiveness, assurance and empathy (Parasuraman, Zeithaml, & Berry, 1988). The study develops different SOW models for savings/investments and loans in retail banking, since the magnitude and determinants of loyalty for investments and deposits may be different from those of debts and loans. In the latter case, barriers to exit are likely to be higher and create what has been called 'spurious loyalty' (Dick & Basu, 1994).

This research seeks to model and predict customer loyalty in retail banking as measured by SOW. In keeping with Kuhn's suggestions (1970) that research evolution needs to incorporate new variables that have not previously been included in testing a model thereby extending existing models and knowledge, the study models predictors of loyalty previously established in the literature (such as satisfaction and perceived service quality), but also includes customer demographics, length of relationship and current consumer behavior.

Methodology

The study is based on the results of a survey of 5,000 individuals obtained from a commercial mailing list in Australia. A total of 1,951 usable responses were received, which represents a 39 percent response rate (after returned mail). Females (61 percent) are over-weighted in the sample, reflecting the higher proportion in the sample frame (63 percent females).

Principal component analyses were used for data reduction (Johnson & Wichern, 2002), which provided a single value for the multi-item constructs, following Pritchard, Howard and Havitz's (1992) suggestion that multidimensional measurements are most appropriate for the attitudinal aspects of loyalty. Complete information on all factors resulting from the data reduction process can be obtained from the first author. As a result of the principal component analyses, factor scores for each construct were calculated and then used in subsequent analyses. The resulting variables were then used in regression analyses to model behavioral loyalty in terms of SOW for deposits and debts and loans held with the main bank. SOW was reported by respondents in quartiles, e.g. 0 to 25 percent of deposits held with the main bank. Given the ordinal nature of the dependent variables (i.e. the quartiles indicating the SOW in terms of deposits and debts and loans), ordinal logistic regressions were

performed applying the backward deletion method (Derksen & Keselman, 1992; Hair, Anderson, Tatham, & Black, 1998, p. 178) in order to develop the most parsimonious models, based on their goodness of fit and explanatory power. Four separate models were developed predicting SOW deposits; percentage of accounts from main bank; SOW debts and loans; and percentage of credit cards from the main bank.

Results

The following two sections deal with retail banking behavior in terms of depositing funds, while the two sections thereafter cover consumer behavior in terms of borrowing money from the bank.

Predicting SOW deposits

SOW deposits was measured in terms of the percentage of the total financial deposits such as savings accounts, shares and bonds a client holds with her/his bank. A descriptive analysis of the data revealed that 695 (40 percent) customers held 0 to 25 percent of their deposits with their main bank, 217 (12 percent) customers held 26 to 50 percent, 246 (14 percent) held 51 to 75 percent and another 598 (34 percent) held 76 to 100 percent of their deposits with their main bank. Therefore, nearly half of the sample has their savings distributed between at least two banks. In contrast, 34 percent of customers hold nearly all of their deposits with one bank. Table 1 shows the results of the ordinal logistic regression predicting SOW deposits.

Table 1: *Predicting SOW deposits: Ordinal logistic regression*

Independent Variables	β	SE β	P	Odds Ratio
Number of current suppliers	0.476	0.055	<0.001	1.61
Age	0.130	0.030	<0.001	1.14
Gender	0.271	0.098	0.006	1.31
Income	0.073	0.031	0.018	1.08
Education	0.189	0.102	0.063	1.21
Meet expectations	-0.006	0.028	0.842	0.99

$n = 1,756$, Chi-square = 3111.70, $df = 3069$, $p = 0.291$; Deviance test: Chi-square = 2746.03, $df = 3069$, $p = 1.000$, Log-Likelihood = -2155.020; Goodman-Kruskal Gamma = 0.25

From the total of 1924 observations in this study, 1,756 were used for this particular analysis; 168 cases contained missing values and were excluded from this test. The goodness-of-fit tests indicated that there is no evidence of lack of model fit (Pearson test: Chi-square = 3111.70, $df = 3069$, $p = 0.291$; Deviance test: Chi-square = 2746.03, $df = 3069$, $p = 1.000$). Moreover, the Log-Likelihood (-2155.020) test indicated that there was sufficient evidence to conclude that at least one of the estimated coefficients was different from zero ($G = 141.116$; $df = 6$, $p < 0.001$). A

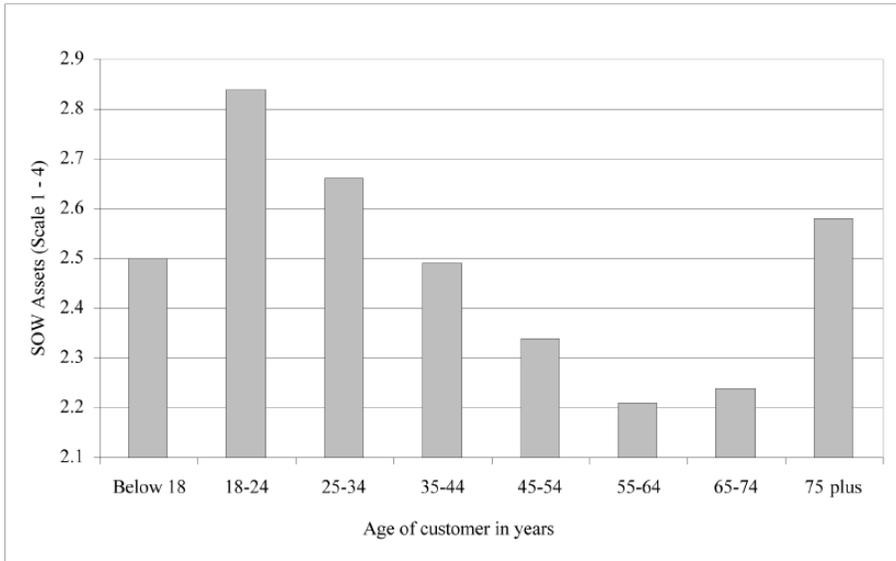
Goodman-Kruskal Gamma of 0.25 showed that 25% of the variation of SOW in terms of deposits could be explained by the model.

Table 1 gives estimated coefficients, the standard error of the coefficients, p values and probability values (odds ratio) for each of the predictor variables, indicating that the following variables together predict SOW deposits: Number of current suppliers ($p < 0.001$), Age ($p < 0.001$), Gender ($p = 0.006$) and Income ($p = 0.018$) are strong predictors. There was a trend for a significant association between education and SOW of deposits ($p = 0.063$). “Meet expectations” ($p = 0.842$) was not significantly associated with SOW deposits and a separate bivariate analysis of “meet expectations” and SOW deposits showed that the two variables are not associated ($p = 0.698$). In the more powerful multivariate analysis, however, after allowing for the effect of the other five factors, “meet expectations” was still not significantly associated with the dependent variable, yet contributed to a substantially better model fit. Without this independent variable, the goodness-of-fit test revealed a substantially weaker model fit (Pearson test: Chi-square = 1473.74, $df = 1375$, $p = 0.032$; Deviance test: Chi-square = 1371.82, $df = 1375$, $p = 0.519$).

A correlation analysis also revealed that “overall satisfaction” and “meet expectations” are very strongly correlated (Pearson correlation 0.877, $p < 0.001$), and the model was further tested including “overall satisfaction” and excluding “meet expectations”, but the model did not pass the goodness-of-fit tests. As a result, a model including only “meet expectations” was used. In the final model, the positive coefficient for number of suppliers and an odds ratio of greater than one indicated that, unsurprisingly, a higher number of suppliers tends to be associated with lower SOW. Specifically, a one-unit increase in the number of current suppliers results in a 61 percent increase in the odds that SOW is 0 to 25 percent versus 75 to 100 percent, that SOW is 25 to 50 percent versus 75 to 100 percent, and that SOW is 50 to 75 percent versus 75 to 100 percent.

Age was also positively and significantly associated with the dependent variable, but the relationship between the two variables is more complex. The odds ratio of 1.14 for this second strongest predictor ($\beta = 0.130$, $p < 0.001$) indicated that, generally, a high age would be associated with a lower SOW deposits. However, a bivariate analysis of means further specified the non-linear relationship between age and SOW deposits ($p < 0.001$). As can be seen in Figure 1, SOW rises at the very beginning (change from below 18-year category to 18 to 24-year-olds), then declines with age up until the 55 to 64 years category, then increases again.

The results for gender are more clear-cut: SOW deposits were typically higher for females than for males. The same applies to income, the next predictor, where the coefficient and odds ratio revealed that an increase of one unit in income was associated with a decrease in the odds of high SOW deposits ($\beta = 0.073$, $p = 0.018$, Odds ratio = 1.08). Similarly, customers with no university education had a significantly ($p < 0.001$) higher level of SOW deposits than customers with a university degree. With a β of 0.189 and a p value of 0.063, education was found to have a trend for an association with SOW deposits after allowing for the effect of all the other five predictors (from the Ordinal Logistic Regression). The last predictor of this model, “meet expectations”, was not significantly associated with the dependent variable and has been discussed above.

Figure 1: Relationship Between Age and SOW Deposits

Predicting percentage of accounts with main bank

The number and percentage of accounts held with the main bank is also an indication of a customer's loyalty, although not as powerful as the previous one (SOW deposits) where the actual spread of savings and investments in dollar terms was examined. Arguably, however, the percentage of products used is more precise because this is relatively easy for respondents to indicate, while SOW measures were only indicated by respondents in quartiles (as opposed to actual number of products used for the following analysis). A descriptive analysis of the data revealed that 137 (9 percent) customers held 26 to 50 percent of their accounts with their main bank, 395 (26 percent) customers held 51 to 75 percent, and another 993 (65 percent) held 76 to 100 percent of their accounts with their main bank. Furthermore, 25.8 percent of customers were found to have only one bank account, 35.4 percent have only two, 19.7 percent have three bank accounts, and 18.3 percent have four or more bank accounts. Hence, for a large majority of customers, one or two accounts with one bank can represent a significant indicator of loyalty. Table 2 shows the results of the ordinal logistic regression.

While demographic variables such as age, gender, income and education were found to be strong predictors of SOW deposits, they were not found to be significantly associated with the percentage of accounts used from a customer's main bank. The only exception was residential location, with customers in rural areas shown to have a lower percentage of accounts with their main bank.

The number of current suppliers was the strongest predictor. Not surprisingly, the more suppliers a customer has, the bigger the odds of a low percentage of accounts with the main bank. This dimension, number of suppliers, was also tested with a long-term perspective, incorporating a customer's ten-year consumer history. This

independent variable was found to have a negative association with the dependent variable, and the odds ratio of 0.76 suggested that a small number of suppliers within the last ten years is associated with a higher percentage of accounts with the main bank. Confidence in judgment, i.e. to what extent a customer feels their judgment of their main bank is correct, was the third predictor. The odds ratio of greater than one indicates that higher levels of confidence can be associated with a lower percentage of accounts held with the main bank. Customers who believe that they understand the market may be more likely to open an account with a competing financial institution and likely to spread their savings/investments. Length of relationship with the main bank was also found to be a significant predictor of the percentage of accounts held with the main bank. An odds ratio smaller than one indicates that the longer the relationship with the bank, the higher the percentage of accounts held with them. Thus, customers who have been with their main bank for a long time tend to assign them more accounts, and arguably also more money. In addition, switching benefits has a trend association with the dependent variable ($p = 0.068$); the more a customer believes that he or she could improve their situation by switching banks, the more he or she seems to hold accounts not only with the main bank, but also maintain accounts with several banks.

Table 2: Predicting Percentage of Accounts From Main Bank:
Ordinal Logistic Regression

<i>Independent Variables</i>	β	<i>SE</i> β	<i>P</i>	<i>Odds Ratio</i>
Number of current suppliers	1.658	0.101	<0.001	5.25
Number of suppliers in 10 years	-0.271	0.076	<0.001	0.76
Confidence in judgment	0.192	0.061	0.002	1.21
Length of relationship	-0.076	0.027	0.004	0.93
Residential location	0.322	0.128	0.011	1.38
Switching benefits	0.114	0.062	0.068	1.12

$n = 1924$; Chi-square = 2703.18, $df = 2844$, $p = 0.971$; Deviance test: Chi-square = 1936.94, $df = 2844$, $p = 1.000$; Log-Likelihood = -1013.270; Goodman-Kruskal Gamma = 0.65

Predicting SOW debts and loans

While the previous two models attempt to predict SOW in terms of deposits, the following three models deal with loans in retail banking. The first, and arguably most important dimension, is SOW debts and loans. This was measured in terms of the percentage of debts and loans (in monetary terms), (e.g. mortgage, personal loans and credit cards), that a client has with her or his bank. A descriptive analysis of the data revealed that 548 (41 percent) customers held 0 to 25 percent of their debts and loans with their main bank, 96 (7 percent) customers held 26 to 50 percent, 129 (10

percent) held 51 to 75 percent and another 551 (42 percent) held 76 to 100 percent of their debts and loans with their main bank. Table 3 shows the results of the ordinal logistic regression, and the predictors of SOW debts and loans.

Table 3: Predicting SOW Debts and Loans:
Ordinal Logistic Regression

Independent Variables	β	SE β	P	Odds Ratio
Number of current suppliers	0.367	0.063	<0.001	1.44
Age	0.222	0.037	<0.001	1.25
Income	-0.182	0.034	<0.001	0.83
Residential location	-0.205	0.116	0.077	0.81
Empathy	0.089	0.053	0.092	1.09

$n = 1,324$; Chi-square = 3593.77, $df = 3604$, $p = 0.545$; Deviance test: Chi-square = 2742.46, $df = 3604$, $p = 1.000$; Goodman-Kruskal Gamma = 0.25

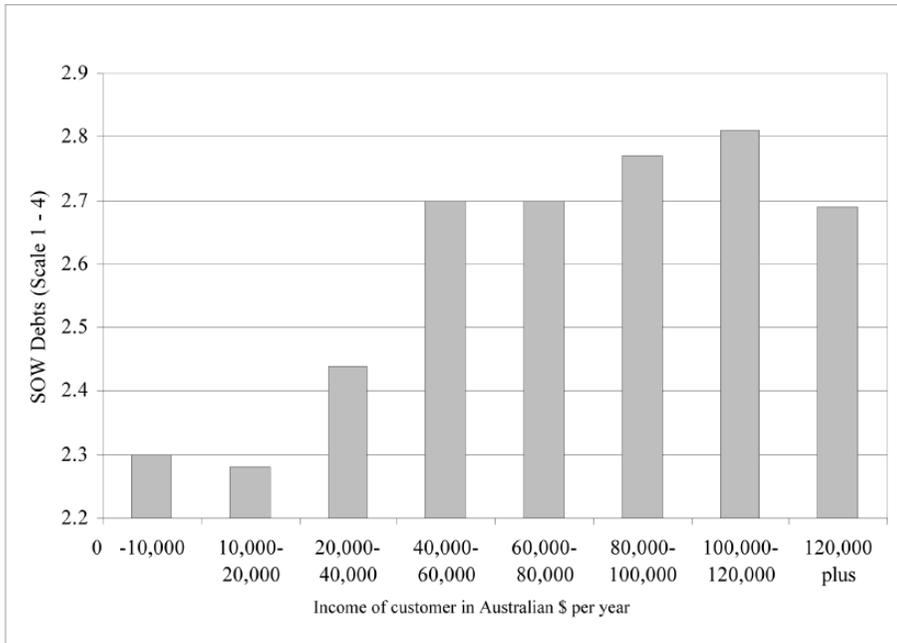
The above model was also tested without “current suppliers” since it would be more convenient for a bank to profile customers with potential solely based on demographics. While the model fit indices improved, this resulted in the substantially reduced explanatory power of the model (down to 19 percent as opposed to 25 percent). Consequently, since the goodness-of-fit indicators of the original model (presented in Table 3) exceeded acceptable levels, yet explained a substantially bigger proportion of the variance of SOW debts and loans (25 percent), “current suppliers” was kept in the model.

Table 3 gives estimated coefficients, the standard error of the coefficients, p values and probability values (odds ratio) for each of the predictor variables, indicating that there are three significant predictors of SOW debts and loans. Two independent variables showed a trend towards a significant association with the dependent variable. The single strongest predictor of SOW debts and loans was the number of current suppliers ($p < 0.001$), where, similar to SOW deposits, a higher number of suppliers were associated with a lower SOW. The second strongest predictor of SOW debts and loans was age ($p < 0.001$), where the positive coefficient ($\beta = 0.222$) and an odds ratio of greater than one (1.25) indicated that a higher age tended to be associated with lower SOW debts and loans. Income, the third strongest predictor of SOW debts and loans, had a negative association with the dependent variable, indicating that an increase in income is associated with an increase in SOW debts and loans. A graphical analysis provides further insight into the relationship between the two variables as can be seen in Figure 2.

There was a trend towards a significant association between residential location, the fourth strongest predictor, and the dependent variable, where urban customers appear to have a lower SOW with their main bank in comparison to counterparts in rural areas. Empathy also only had a trend towards a significant association with SOW

debts and loans ($p = 0.092$) with a Beta of 0.089 and an odds ratio of 1.09. Despite this, empathy, together with all the other predictors, results in strong goodness-of-fit indices, while the model without empathy did not pass the goodness-of-fit criteria (Pearson test: Chi-square = 911.338, $df = 812$, $p = 0.008$; Deviance test: Chi-square = 813.277, $df = 812$, $p = 0.481$).

Figure 2: Relationship Between Income and SOW Debts and Loans



Predicting percentage of credit cards from main bank

The number and percentage of credit cards held with the main bank is also an indication of a customer's loyalty. A descriptive analysis of the data revealed that 31 (2 percent) of customers held 0 to 25 percent and 348 (27 percent) of customers held 26 to 50 percent of their credit cards (in terms of cards used) with their main bank. 232 (18%) customers held 51 to 75 percent, and another 693 (53 percent) held 76 to 100 percent of their credit cards with their main bank. Furthermore, 46.3 percent of customers were found to have only one credit card (and 50.1 percent of customers have that card from their main bank), 22.8 percent have two and only 12.9 percent have three or more credit cards. 16.1 percent of bank customers in this sample have no credit card at all. Hence, similar to the findings with deposits, for a large majority of customers, one or two credit cards with one bank can represent a significant indicator of loyalty. Table 4 shows the results of the ordinal logistic regression predicting the percentage of credit cards used from a customer's main bank.

Table 4: Predicting Percentage of Credit Cards From Main Bank:
Ordinal Logistic Regression

Independent Variables	β	SE β	P	Odds Ratio
Number of current suppliers	1.127	0.093	<0.001	3.09
Length of relationship	-0.078	0.027	0.003	0.92
Number of suppliers in 10 years	-0.199	0.075	0.008	0.82
Income	0.097	0.037	0.008	1.10
Culture	0.307	0.136	0.024	1.36
Recently opened account with competitor	-0.205	0.146	0.162	0.82

$n = 1,304$; Chi-square = 1787.74, $df = 1773$, $p = 0.398$; Deviance test: Chi-square = 1380.23, $df = 1773$, $p = 1.000$; Log-Likelihood = -1234.226; Goodman-Kruskal Gamma = 0.50

The two strongest predictors were number of current suppliers ($p < 0.001$; odds ratio 3.09) and length of relationship ($p = 0.003$; odds ratio 0.92). In the first case, the more suppliers that a customer uses, the lower the SOW in terms of credit cards held with the main bank. In the case of the second strongest predictor, length of relationship, the association between the two variables is the opposite: the longer a client has been with their main bank, the higher the proportion of credit cards that they have from their main bank. Number of suppliers in ten years ($p = 0.008$; odds ratio 0.82) shows that the more banks a customer has banked with in the past, the lower their SOW in terms of credit cards from their main bank. The analysis of the independent variable “income” revealed that the higher a customer’s income, the lower their SOW in terms of credit cards from their main bank ($p = 0.008$; odds ratio 1.10). Interestingly, culture was also a significant predictor of SOW credit cards. Australians and New Zealanders had a higher SOW than other nationalities ($p = 0.024$; odds ratio 1.36).

Overview of key predictors of actual behavior in retail banking

Table 5 provides an overview of the previously discussed actual behavior models. The predictors are sorted in alphabetical order.

Discussion

The study’s results provide interesting insights into the relationships between demographic characteristics of a retail banking client and their SOW in terms of deposits and debts and loans with their main bank. Demographic variables such as age, income and residential location are significantly associated with SOW deposits and SOW debts and loans (Table 5). This is an important finding for two reasons. First, these predictors of behavioral loyalty are available for a bank to analyze, and hence profile and detect customers with low to medium SOW. They can then be targeted for

marketing action in order to potentially increase customers' SOW. Secondly, these findings run contrary to the prevailing marketing wisdom which suggests that attitudinal measures are better predictors of behavior than demographics. Perhaps more interesting, however, are the results for affective attitudes and service quality. While the literature generally suggests that satisfaction, attitude and service quality can be linked with loyalty, the results of this study indicate that these classic marketing constructs are not significantly associated with actual behavior such as SOW in terms of deposits or debts and loans in retail banking. For example, it was revealed that satisfaction did not have a significant relationship in a bivariate analysis with SOW deposits, (p value of 0.816 and 0.216 respectively for SOW debts and loans). A similar result was obtained for attitude, in the bivariate analysis, where the association with SOW deposits was non-significant ($p = 0.714$) and also non-significant ($p = 0.140$) in terms of SOW debts and loans. Out of the five SERVQUAL dimensions, only empathy was found to be significantly associated with SOW debts and loans, but none of the SERVQUAL variables was found to be significantly associated with actual behavior in terms of deposits.

Table 5: Overview of Key Predictors of Actual Behavior in Retail Banking

Dependent Variables (% of variation explained) ∇	Behavior (deposits)		Behavior (Loans)	
	SOW deposits 25%	% accounts 65%	SOW debts and loans 25%	% credit cards 50%
Age	*		*	
Confidence in judgment		*		
Culture				*
Education	**			
Empathy			**	
Gender	*			
Income	*		*	*
Length of relationship (LRS)		*		*
Meet expectations	1			
Number of current suppliers	*	*	*	*
Number of suppliers in 10 years		*		*
Recently opened account with competitor				1
Residential location		*	**	
Switching benefits		**		

* Significant ($p \leq 0.05$)

** Trend ($p > 0.05$ and $p \leq 0.10$)

1 Not significant, but contributes to power of overall model (i.e. explanatory power and/or model fit).

The number of current suppliers was found to be the key predictor of behavior, both for deposits and loans. While not surprising, this may still be helpful for practitioners in the field. It is relatively easy for banks to estimate a client's number of suppliers (e.g. during conversations with the client about their investments or when analyzing a client's money stream when making electronic payments), but it is more

difficult to estimate the actual SOW held with the bank. Hence, since the link between these two dimensions was empirically supported by this study, bankers can estimate the SOW based on the number of current suppliers. Beyond estimating SOW, banks could also give consideration to implementing incentives such as differential fee structures based around SOW. Another strong predictor of deposit and loan behavior was the length of relationship. This independent variable was significantly associated with percentage of accounts and percentage of credit cards used by the main bank. Confidence in judgment was a significant predictor of percentage of accounts used from the main bank (Table 5).

Demographic variables were found to be strong predictors of actual behavior. In particular, there was a strong association between age and SOW deposits (Figure 1). The results suggest that customers in their late-forties to mid-seventies spread their banking business. However, in their retirement (age bracket 75 plus), customers seem to increase their SOW. Gender, from Table 1, was also a significant predictor of SOW deposits. According to this study's results, females appear to be more loyal in terms of SOW with their main bank. Jain et al. (1987) concluded from the findings of previous studies that loyal bank customers are older and have a lower level of education and lower income. This study's findings support these conclusions (from Tables 1 and 3): the relationship between age and SOW deposits is complex, as discussed, yet is more clear-cut in terms of SOW debts and loans where SOW decreases for older customer segments. Education was significantly associated with SOW deposits (Table 1), as SOW was higher for customers without a university education. However, education was not found to be significantly associated with SOW debts and loans or any other dependent variable. In addition, income was found to be significantly associated with SOW in that SOW of deposits declines with an increase in income (Table 1), as does the percentage of credit cards held with the main bank (from Table 4). In contrast, SOW for debts and loans rises with an increase of income (from Figure 2). Another predictor of SOW is the number of banks a client has banked with in the last ten years (Tables 2 & 4) as well as a customer's residential location. Customers in rural areas have a significantly lower percentage of their accounts with their main bank, but have higher SOW in terms of debts and loans with their main bank. However, residential location was not significantly associated with SOW deposits. In most cases, customers in urban areas have a greater choice of banks available to them and hence seem to spread their debts and loans among more banks. Nonetheless, it remains unclear why customers in rural areas have a lower percentage of their accounts with their main bank. Urban customers may be more affluent and hence have a different banking behavior and different financial needs in comparison to their counterparts in rural areas. In fact, based on the data of this study, the income situation is indeed significantly different for customers in rural areas than the ones in the urban areas ($p = 0.001$).

The prediction of SOW debts and loans (Table 3) revealed two additional predictors that were not found to be significant for SOW deposits (from Table 1): residential location and empathy. For empathy, although one would expect a positive correlation (and the results showed a trend towards a significant association with the dependent variable in the ordinal logistic regression analysis), a bivariate analysis of means revealed

no significant differences ($p = 0.472$). Empathy is difficult to accurately measure over time, however, and the demographic variables that predicted SOW are much easier to collect and use in predicting SOW. The fact that empathy is important for loans, but not for deposits, is, on reflection, perhaps not surprising. Customers depositing funds are not usually in a dependent relationship with their banks and they are frequently free to move their surplus funds around in pursuit of higher returns. In contrast, customers seeking to borrow money are more likely to be in a dependent relationship with their banks and bankers, and thus, empathy is more likely to be important.

Self-stated cultural background, regardless of a customer's citizenship, is a significant predictor of the percentage of credit cards used from the main bank and is in many cases also relatively easy for a bank to determine. In order to be able to open a bank account, a new customer has to present several pieces of identification, which can sometimes reveal a client's origin to the bank. Interestingly, Australians and New Zealanders have a higher level of percentage of their credit cards from their main bank, suggesting higher levels of loyalty in this respect. Survey respondents from other countries, such as those from the more competitive Asian markets, had lower percentages of their credit cards from their main bank. Perhaps their exposure to more competitive banking environments where it may be more common to shop around in order to get the best deal led them to check the credit card market with many competing products and choose products from providers other than their main bank.

Jain et al. (1987) who measured and defined loyalty in terms of behavioral intentions, found that the relationship between socio-demographic characteristics and loyalty was statistically significant, but only explained 13 percent of the variation in behavioral intentions. In this study, where actual behavior was measured and modeled, approximately 25 percent of the variation in SOW and 27 to 65 percent in terms of percentage of products used could be explained. Compared to Jain's results, this level of predictive power is very high, especially since behavioral models typically have lower explanatory power than models of behavioral intentions. The unexplained 75 percent for SOW in this study may be influenced by external structural factors that are outside the current model, for example business connections, geographic availability or convenience. The challenge for bankers is to identify the attitudinal and non-attitudinal or structural factors and to better work with these known and measurable factors.

Implications for Bankers

The results from Table 1 indicate that, as expected, a higher number of suppliers tend to be associated with lower SOW deposits. The average SOW for customers with only one bank was 70 percent in terms of SOW deposits, compared with approximately 45 percent for customers with six banks. Since banks are able to analyze the flow of money to and from accounts held with them, they should be able to detect clients that bank with another bank, and these clients could become a target for promotional action. For example, these customers could be offered cost-neutral switching of their banking businesses and possibly a monetary incentive to consolidate accounts. It is then relatively simple for the bank to verify in the future whether the client still banks with another bank (i.e. are there still money transfers in the same name to another bank?

Age was the second strongest predictor ($\beta = 0.130$, $p < 0.001$) of SOW deposits (from Table 1) and has a non-linear relationship with the dependent variable (Figure 1). SOW rises from the youngest age group (below 18 years), then declines with age after 24 years up until the 55 to 64 years category, then increases again. It appears that customers between the ages of 55 to 64 years increasingly spread their banking business as they become older and in most cases increase their income and/or wealth. It is possible that, as customers accumulate banking experience, they begin to use several banks in order to improve their financial situation, by comparing the results (e.g. financial performance of investments) and/or using more than one bank to decrease perceived risk. At the retirement stage, however, customers seem to increase their SOW, possibly in order to simplify their financial dealings and to consolidate their banking business. This finding suggests that banks should target customers in the 25 to 54 years age bracket, especially those in their late twenties and early thirties. It appears that this is the time period when customers start spreading their deposits and decrease the SOW with their main bank, possibly because their income increases. If banks can provide good service quality and attractive products to this segment, these customers may be less inclined to spread their investments. A further possibility is that customers may spread their deposit business around as they pursue more attractive loans, especially in their formative adult years. As their loan needs decrease, they may feel less pressure or need to spread their deposits and investments and may feel better served by consolidating investments and minimizing bank charges.

The results presented in Table 1 showed that gender was significantly associated with SOW deposits. SOW deposits were significantly higher for females than for males. These findings have two implications for banks: 1) Banks might focus their strategy for female clients to maintain these relatively high SOW levels with females and 2) in contrast, they could aim to increase the SOW of their male clients. The study's findings also suggest that SOW deposits are significantly lower for clients with higher incomes. This is an important finding for bankers, as this higher-income bracket is an attractive target for cross selling such as stock trading and credit cards. The results suggest that customers with a higher income will generally only have a certain proportion of their business with their main bank, and there is thus potential to increase their SOW if these customers are offered the right products and services. While "high net worth" individuals are obviously attractive targets for banks, the evidence of this study is that they may well resist such approaches and may prefer to spread their business among several providers. Similarly, customers with no university education had a significantly higher level of SOW deposits than customers with a university degree ($p < 0.001$). There was also a trend towards a significant association between education and SOW deposits ($p = 0.063$). Meeting a client's expectations, although not significantly associated with SOW deposits, appears to also play an important role in this model as the variable was needed in order to achieve a good model fit. Again, this is not surprising in that loans are typically much more flexible and negotiable than deposits and investments which carry fixed terms and conditions.

The single strongest predictor of SOW debts and loans (from Table 3) was the number of current suppliers ($p < 0.001$), where, as with SOW deposits, a higher number of suppliers was associated with a lower SOW. The implications for bankers

are similar to those for deposits: bankers have to make themselves more attractive as the sole provider of banking services, for example through offering more attractive conditions if a customer consolidates accounts with one bank. The second strongest predictor of SOW debts and loans was age ($p < 0.001$), with customers at a higher age tending to have lower SOW debts and loans (Table 3), which echoes the celebrated 'Life Cycle' hypothesized by Modigliani (1986) for which he won the Nobel Prize in 1985. Perhaps retired clients fear that they are no longer credit-worthy and hence seek debts and loans (in smaller amounts) from more than one institution. Income, the third strongest predictor of SOW debts and loans (from Table 3), had a negative association with the dependent variable, indicating that an increase in income is associated with an increase in SOW debts and loans. Unlike the relationship between income and SOW deposits, where banks should pay more attention to the mid-twenties and thirties age bracket, the current situation is in favor of banks since customers with a higher income already have a higher SOW in terms of their borrowings. This may be because the more security they can provide as a guarantee for their debts and loans, the more attractive the conditions (such as interest rates or fees) that are offered by the bank and hence the higher the SOW. However it would still be attractive for bankers to attempt to increase the SOW of these customers and potentially receive all of the debts and loans (e.g. mortgage, personal loans and credit cards) of the high-income earning customers. This is especially true since this segment may be less prone to run into solvency problems and be unable to pay interest, fees or amortization portions.

Implications for researchers

From a researcher's perspective, the predictors of actual behavior are still an under-researched field. The results of this current study suggest that demographic variables such as age, income, residential location, gender, culture and education have been found to be significantly associated with actual behavior in retail banking (Table 5). While the literature generally suggests that satisfaction, attitude and service quality are associated with loyalty, the results of this current study suggest that these classic marketing constructs are less strongly associated with actual behavior in retail banking than demographics.

Satisfaction was not significantly associated with SOW deposits ($p = 0.816$); nor with SOW debts and loans ($p = 0.216$) in a bivariate analysis. A similar result was found with attitude that was not significantly associated with SOW deposits ($p = 0.714$) nor SOW debts and loans ($p = 0.140$) in a bivariate analysis. Out of five SERVQUAL dimensions (i.e. tangibles, reliability, responsiveness, assurance and empathy) only empathy was significantly associated with SOW debts and loans. None of the SERVQUAL variables was found to be significantly associated with the other behavioral dependent variables. Further research could investigate why these widely used marketing constructs do not predict actual behavior in retail banking.

Researchers could also investigate more closely the relationship between income and SOW. In this study, income was significantly associated with SOW deposits and debts and loans, and also with the percentage of credit cards used from the main bank. However the nature of the relationship varied; SOW for deposits and credit cards used

from the main bank was lower for clients with higher income, but SOW debts and loans was higher for clients with higher incomes. The reasons behind these varying relationships between income and SOW could be further analyzed by researchers. As a working hypothesis, it could be surmised that those on higher incomes develop closer relationship with their banks and bankers by consolidating their borrowings to maximize their negotiating power. More generally, the lack of symmetry in findings between loans and deposits, while perhaps unsurprising, suggests more complex behavioral explanations.

Conclusion

This current study finds that models predicting 25 to 65 percent of actual behavior in banking can be developed. Prediction of actual behavior, as estimated by share of wallet of dollar value and product usage, can be predicted by customer demographics. Another important finding from this study is that satisfaction, attitude and service quality do not seem to significantly predict actual behavior in retail banking.

The key conclusion of this study is that bankers may benefit from profiling customers with potential for growth in SOW possibly by targeting them specifically with tailor-made products and services. The results of this study provide valuable guidelines for segmentation criteria. For example a typical client with potential to increase share of wallet is male, aged 35 to 65 years, has a high income and a university degree.

In recent times Australian banks have been said to focus on improving their customer service by re-opening previously closed branches due to losses to mortgage brokers and training their staff in cross-selling (Anonymous, 2005a, 2005b; Hughes, 2004; Kohler, 2004). While these actions do not seem to be out of place, one could argue that, based on this study's findings, activities could be focused on targeting customers with a profile that promises growth. For example, customers in rural areas appear to already have a higher SOW for debts and loans than urban customers, but SOW deposits and residential location were not found to be significantly associated with each other. Therefore, re-opening branches in rural areas might not lead to a success in increasing SOW deposits, but it may be more justifiable in urban areas where competition is more intense and customers are more "footloose".

The results of this study provide insight into the prediction of SOW in retail banking. First, the results suggest that researchers should not only focus on satisfaction, attitude and service quality when attempting to predict actual consumer behavior, but should include socio-demographic characteristics in predictive models. Socio-demographic characteristics were found to have higher explanatory power than attitude measures, and are also measures typically known by the banks, and so relatively easily included in predictive models. This study does not suggest that satisfaction is not important in retail banking, but it does suggest that in order to predict actual behavior, researchers need to go beyond attitude measures. Given that attitude and satisfaction were not found to be significant predictors of actual behavior in this study, bankers are encouraged to think beyond the attitude-behavior explanation model and instead focus on explaining and predicting consumer behavior based on a client's life situation and environment.

A key contribution of this study is its focus on actual behavior rather than behavioral intentions. Prediction of intentions is only of relevance to practitioners if intentions lead to actual behavior, a link that has been questioned in the literature. Hence, focusing directly on actual behavior as the dependent variable should be a timely addition to the consumer behavior literature. One could conclude that customers are loyal as a result of their current life situations (e.g. age and income) rather than resulting from a positive attitude towards their bank. If the latter were the case, attitude would have been found to be significantly associated with SOW in this study, which was clearly not the finding. Researchers are encouraged to explore the unexplained proportions of variation in actual behavior, e.g. 35 percent in the variation of percentage of accounts used from the main bank.

In summary, the study finds that a model predicting actual behavior in banking with acceptable Goodman-Kruskal Gammas can be developed. Satisfaction and attitude, strongly established in the marketing literature to be predictors of behavioral intentions, were not significant predictors of actual behavior in this research. Based on the results of this study, the key measure of interest for managers and researchers, actual behavior, can be best predicted by using demographic variables.

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