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Modelling customer loyalty in financial services

A hybrid of formative and reflective constructs

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Abstract

Purpose – Customer loyalty is a focal concern for marketers who seek to identify its antecedents and causal structure with the aim of better understanding, predicting and managing loyalty. The purpose of this paper is to model both current behaviour (measured as share of wallet) and future intentions as measures of customer loyalty, to quantify the link between current and future behaviour.

Design/methodology/approach – A hybrid model, combining reflective and formative constructs, was developed, moving away from the traditional "reflective only" approach to explain customer loyalty. New predictors such as variety seeking, "resistance to change" and risk taking behaviour were tested to explain loyalty.

Findings – While "risk" is traditionally viewed as a key variable in financial services, this study finds that variety seeking and "resistance to change" predicted current behaviour and future behavioural intentions better than risk. Higher explanatory power and better model fit was found for a hybrid model combining formative and reflective constructs; in contrast to the more common fully reflective approach.

Research limitations/implications – This study adds to the emerging debate on whether concepts such as loyalty should be treated as reflective and/or formative. The implications from this study suggest that future research can usefully model current behaviour as formative and future intentions as reflective. Future research should test the extent that these findings apply across products and services beyond banking.

Originality/value – This study establishes that variety seeking and "resistance to change" can usefully explain and predict loyalty. The examination of "formative" and "reflective" concepts in explaining loyalty is also novel.

Keywords Banking, Customer loyalty, Risk management, Change management, Linear structure equation modelling, Modelling

Paper type Research paper

Introduction

The topic of customer loyalty is a focal concern for marketers who seek to identify its antecedents and causal structure with the aim of better understanding, predicting and managing loyalty. Previous loyalty research has heavily focused on the "satisfaction leads to loyalty" paradigm (e.g. Hallowell, 1996; Lee *et al.*, 2001), and has largely modelled loyalty as either future intentions or some form of current or past behaviour (Ewing, 2000; Johnson *et al.*, 2006). This study, however, moves away from the satisfaction-loyalty approach since the association has been shown to be relatively

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weak in the financial services context (Barnes, 1997; Krishnan *et al.*, 1999), and instead tests three new predictors to explain loyalty:

(1) variety seeking;

(2) resistance to change; and

(3) risk taking.

Also, this study models both current behaviour (measured as share of wallet) and future intentions as measures of customer loyalty, to quantify the link between current and future behaviour. Focusing on a customer's share of wallet (SOW) is important for bankers since it allows profiling of current customers who should be "protected" if they devote all their business to their bank, and those that hold the potential for growth because a significant proportion of their business is with another bank. By further examining and explaining a customer's future intentions, it offers the prospect of proactive management of relationships where customers are likely to defect.

In terms of methodology, this study also takes a new approach to modelling loyalty by testing and comparing "reflective" and "formative" constructs in structural equation modelling (SEM). The traditional approach to SEM is "reflective" modelling, but it has been suggested (Jarvis *et al.*, 2003; Petter *et al.*, 2007) that this approach is not suitable for all models, and this study sheds light on this complex discussion that is still in its infancy.

Antecedents of customer loyalty

While customer loyalty is a centrally important concept in marketing financial services, there is, as yet, little consensus as to the common predictors of loyalty and their potential interrelationships. Previous research in the field of customer loyalty has typically employed customer satisfaction, affective attitudes and service quality as predictors (Bloemer and De Ruyter, 1998; Bloemer *et al.*, 1998; Caruana, 2002; Zins, 2001). While there is little debate that customer satisfaction is logically and typically associated with customer loyalty, there is evidence suggesting that the association is not always strong. Jones and Sasser's (1995) landmark study establishes that satisfied customers do, on occasions, defect, for example if they find a better offer or want variety. Similarly, some satisfied customers switch banks when their personal circumstances change. Conversely, some loyal customers may not be particularly happy or satisfied, but remain loyal out of inertia. In an endeavour to shed further light on this question, this study explores several new factors not previously tested for their association with loyalty; namely, risk taking, variety seeking, and resistance to change. These variables were identified as potentially influential "behavioural predispositions", in contrast to the usual array of demographic and situational variables, and individual differences.

Consumer risk taking behaviour reflects the customer's attitude to the level of uncertainty and its impact on the consumer's buying decision (Gounaris and Stathakopoulos, 2004; Mitchell, 1999). In this sense, a consumer perceives risk as the weighted value of uncertainty concerning the unanticipated and undesirable consequences of a buying situation that might be avoided (Dholakia, 2001). The issue of "risk", also more specifically conceptualised as "risk taking behaviour" or its antonym "risk aversion", has not traditionally been a key focus in the marketing literature. However, risk has been investigated in economics (e.g. Bowman *et al.*, 1999;

Kahneman and Tversky, 1979; Rabin, 2000), international business (e.g. Fitzpatrick, 1983; Miller, 1992) and science (e.g. Atkinson, 1957; Tversky and Kahneman, 1974; Tversky and Kahneman, 1992). Risk has also been investigated in the area of finance (e.g. Jacoby and Skoufias, 1997; Jarrow and Turnbull, 1995; Long *et al.*, 1990; Sharpe, 1964) where risk is a major factor in investment decisions. In marketing, risk has been researched in relation to consumer behaviour (Taylor, 1974), branding (Peter and Ryan, 1976) and, more generically, to the entire marketing discipline (Stone and Gronhaug, 1993). Specifically, previous research has examined the correlation between risk behaviour or risk perception and the degree of consumer involvement in a product category (Dholakia, 2001; Howcroft *et al.*, 2007). It has been found that the level of risk aversion is positively associated with the level of product involvement. Logically, higher levels of risk taking are also expected to be inversely related to loyalty. With the frequently large sums of money tied up in a banking relationship and in periods of economic uncertainty, punctuated by incidents of bank failures, it is expected that risk aversion could be an influential factor in bank loyalty.

Gounaris and Stathakopoulos (2004) found that, not only the consideration of risk is associated with brand loyalty, but also variety seeking. Variety seeking has been researched in the field of marketing in various ways, namely among goods and services (Kahn, 1995), among enjoyable products (Kahn and Isen, 1993), in relation to purchase quantity and timing (Simonson, 1990), brand switching (Givon, 1984), inexplicable and explicable behaviour (McAlister and Pessemier, 1982), private versus public consumption (Ratner and Kahn, 2002) and more general marketing models (Maimaran and Wheeler, 2008; McAlister, 1982). Variety seeking is one of the essential consumer characteristics driving consumers to break with routinisation of their buying behaviour (Choi *et al.*, 2006; Foxall, 1993; Goukens *et al.*, 2007; Kahn and Isen, 1993; Kahn *et al.*, 1986; Menon and Kahn, 1995; Roehm and Roehm, 2005; Trivedi and Morgan, 2003). Consumers tend to seek variety in their buying behaviour when there is an intrinsic need or a level of consumer involvement in a product category (Roehm and Roehm, 2005; Trijp *et al.*, 1996). Variety seeking will potentially lead to increases in customer satisfaction and to decreases in levels of loyalty (Gounaris and Stathakopoulos, 2004; Homburg and Giering, 2001). Most past studies have looked at the effects of "variety seeking" on customer loyalty in the purchase of enjoyable or consumer products (Trivedi and Morgan, 2003). This study extends the investigation of the association between variety seeking and loyalty to the more prosaic category of retail banking, although it is expected that variety seeking may still prove a significant influence on loyalty – at least for certain groups of bank customers.

In contrast to the concept of variety seeking, the study of "resistance to change" (N'goala, 2007; Nevin and Grace, 2000; Panerai, 1998; Stauss *et al.*, 2005) in customer loyalty is more limited. Resistance to change has been investigated generically in behavioural science (Dent and Goldberg, 1999), sociology (Kelley and Volkart, 1952), management (Diamond, 1986; Val *et al.*, 2003; Waddell and Sohal, 1998) and organisational change (Aladwani, 2001; Coch and French, 1948; Lawrence, 1986; Piderit, 2000). In marketing, resistance to change has been researched in terms of internal marketing (Varey, 1995), international marketing (Darling and Taylor, 1989) and internet banking (Sathye, 1999). This study deliberately examined "resistance to change", and not "switching barriers", as a predictor of customer loyalty. Resistance

to change can be defined as a customer's willingness to stay with an organisation regardless of pleasant or unpleasant experience (Pritchard *et al.*, 1999). Taylor *et al.* (2004, p. 219) stated that "resistance to change is the root tendency of commitment as well as the primary evidence of commitment" (Taylor *et al.*, 2004). Resistance to change is a key antecedent of, and is positively related to, loyalty (Pritchard *et al.*, 1999; Taylor *et al.*, 2004). In this sense, resistance to change, like variety seeking and risk taking, can be regarded as an internal behavioural predisposition. This contrasts with "switching barriers" which have been identified in the loyalty literature, but which can be more strictly regarded as an external, structural influence on loyalty.

Construct and measurement of loyalty in financial services

Customer loyalty can be expressed in a variety of terms, although fundamentally it can be measured by either (or both) behavioural and attitudinal elements (Day, 1969; Grisaffe, 2001; Russell-Bennett *et al.*, 2007). These two elements of loyalty are arguably constructed in the model development of this study as current behaviour and future intentions (in the sense that behavioural intentions are commonly conceived as a component of attitudes). Current behaviour is conceptualised as "share of wallet" (SOW), and future intentions as the likelihood of switching. Share of wallet has previously been identified as an important measurement of (behavioural) loyalty in services (Bank Systems + Technology, 1996; Baumann *et al.*, 2005; Baumann, Burton and Elliott, 2007a; Cooil *et al.*, 2007; Foscht *et al.*, 2009; Keiningham *et al.*, 2003; Perkins-Munn *et al.*, 2005; Rust *et al.*, 2000; Wirtz *et al.*, 2007). SOW captures the percentage of overall business a customer assigns to one service provider such as their main bank and naturally higher levels of SOW reflect higher levels of customer loyalty. In this study the SOW dimension is constructed in terms of a customer's assets held with the bank in combination with their borrowings from the main bank.

Future intentions have also been the focus of previous loyalty research (Baumann, Burton, Elliott and Kehr, 2007b; Ewing, 2000; Murray and Howat, 2002; Newberry *et al.*, 2003). A customer's future intentions measure whether they plan to remain a customer in the future, in contrast to SOW that captures a customer's current (loyalty) behaviour. In this study future intentions are constructed as a customer's intentions to seek a new bank, or at least a new product from a competing bank, within the next half year; and whether they plan to close an account in the short- or long-term (i.e. half-year or next five years respectively). Reichheld (2003) argued that a customer's intentions are equally important for a company to investigate as current behaviour, and this study measures both, although the measurements, based on the nature of the variables, differ. For current behaviour, SOW was measured in percentages of a customer's overall business, whereas for future intentions a classic seven-point Likert-scale was applied.

The predictors of customer loyalty tested in this study were risk (i.e. willingness to take risks), resistance to change and variety seeking. Risk was measured by whether a customer would stay with their main bank, even against competing forces, or when the bank itself makes a major mistake, while variety seeking was described as a function of the extent to which a respondent seeks thrills, variety, enjoying "new things" and enjoys meeting new people. Traditionally, all variables explained above would be modelled as "reflective", but in this study, variety seeking and also current behaviour

were tested as formative constructs since these decisions are impacted by one's environment rather than based on one's reflection.

Modelling loyalty using structural equation modelling

The use of structural equation modelling (SEM) in studies of loyalty is, by now, not uncommon (Chiou, 2004; Chiu *et al.*, 2005; Grapentine, 2000; Johnson *et al.*, 2008; Ping, 1993; Sanchez-Perez and Iniesta-Bonillo, 2004b; Yoon and Uysal, 2005). Structural equation modelling (SEM) can assume two contrasting types of measurements: reflective or formative constructs. Traditionally, reflective measurement has been applied in causal models in which the observed variables are chosen and measured as they are assumed to be reflective of the prior theoretical latent construct (a process of deductive reasoning). Recently however, formative measurements, in which the meaning of latent constructs is inferred from the configuration of the observed variables (a process of inductive reasoning) have been advocated for SEM.

Jarvis *et al.* (2003) show the distinguishing characteristics of the contrasting approaches. In simple terms, the issue revolves around the primacy of theory or data. If the focus of the model is in empirically verifying an a priori theoretical variable or model, then a reflective model or variable is appropriate. Conversely, if the research objective is to identify a theoretical model or variable which best fits the empirical data or observations, then a formative approach is warranted.

Formative SEM research is still in its early stage, and the focus of this current study is to compare the process and outcomes of purely reflective structural equation modelling and combined reflective and formative equation modelling. Table I provides an overview of the distinctions that have been drawn between reflective and formative constructs in the literature. Theoretical arguments have been advanced to shift the focus and approach from reflective to formative SEM (Diamantopoulos, 1999; Diamantopoulos *et al.*, 2008; Diamantopoulos and Winklhofer, 2001; Edwards and Bagozzi, 2000; Howell *et al.*, 2007) because not all constructs in SEM are "forward oriented" (i.e. reflective), but in many cases "backward oriented" and thus formative (Wilcox *et al.*, 2008). Formative models and variables or constructs are generally based

Reflective	Formative	References
Effect indicator (Effect indicators are the more typical type of indicators that depend on the latent variable)	Causal indicator (Cause indicators are ones in which the indicator affects the latent variable)	Howell *et al.* (2007), Bollen (2007)
Indicators are manifestations of the construct	Indicators are defining characteristics of the construct	Jarvis *et al.* (2003)
Instructions forward oriented (judgment based on hypothetical actions)	Instructions backward oriented (judgment based on actual actions)	Wilcox *et al.* (2008)
Latent construct exists independent of the measures used	Latent constructs is a combination of its indicators	Borsboom *et al.* (2003, 2004) cited in Coltman *et al.* (2008)
A process of deductive reasoning	A process of inductive reasoning	Baumann, Elliott, and Hamin

Table I.
Natures of reflective and formative constructs

on "actual actions" (observations), while reflective modelling is based on hypothetical (theoretical) actions (Wilcox *et al.*, 2008).

To date, the vast majority of published SEM studies are based on reflective models. In contrast, only a few empirical studies in SEM using formative measurement have been conducted in marketing (Jarvis *et al.*, 2003); including in the field of relationship value (Ulaga and Eggert, 2006), retailer equity (Arnett *et al.*, 2003) and service orientation (Homburg *et al.*, 2002). Several authors have advocated applying formative measurement when reflective indicators do not provide adequate results (Diamantopoulos, 2008; Diamantopoulos *et al.*, 2008; Diamantopoulos and Winklhofer, 2001; Rossiter, 2002; Wilcox *et al.*, 2008). Diamantopoulos (2010), Jarvis *et al.* (2003) and Podsakoff *et al.* (2006), for example, showed that misspecification of measurement models often occurs when reflective measurement is employed instead of formative measurement.

In loyalty research, where some dimensions are of a psychometric nature (e.g. satisfaction, attitude, perception of service quality), it has been argued that SEM should be formative or reflective (Marakas *et al.*, 2007; Marakas *et al.*, 2008) or solely reflective (Diamantopoulos and Winklhofer, 2001; Hardin *et al.*, 2007; Hardin *et al.*, 2008). Previous marketing and business research has overwhelmingly employed traditional reflective measurement practice (Edwards and Bagozzi, 2000) in SEM's. According to Jarvis *et al.* (2003), some 96 per cent of SEM studies published in leading journals used reflective measures; while only 4 per cent used formative measures. Perhaps more alarmingly, they claim that 28 per cent of the reflective models should more correctly have used formative measures.

Theoretical and empirical considerations in identifying SEM constructs

Generally, determining whether structural equation modelling should assume reflective or formative measurement depends on four considerations, (Bollen and Lennox, 1991; Coltman *et al.*, 2008; Edwards and Bagozzi, 2000; Jarvis *et al.*, 2003) namely:

(1) the nature of the construct;

(2) the relationships among the observed indicators;

(3) the direction of causality between the construct and indicators; and

(4) a theoretical judgment (Jarvis *et al.*, 2003; Wilcox *et al.*, 2008).

Similar to Wilcox *et al.* and Jarvis *et al*'s. suggestion, Coltman *et al.* (2008) proposed a two-step justification to define measurement constructs; namely, theoretical and empirical justification.

Theoretical justification is needed to define the nature of the construct, the direction of causality, and the items used to measure constructs. As a generalisation, for current behaviour, measured as share of wallet, formative measurements appear better suited, and for future intentions, reflective measurements have been applied in this study. In the current study, two constructs "variety seeking" and "current behaviour" can be appropriately considered as formative constructs. In this way, observed indicators forming the constructs of variety seeking and current behaviour are considered to reflect past, and thus observable, behaviour. For example, variety seeking is manifested by observed indicators of "seeking out thrills and excitement", "liking

variety", "trying new things", and "meeting people who have new ideas". These observed indicators demonstrate bank customers' propensity to seek various experiences during their shopping (and banking) activities. The latent construct of current behaviour is similarly structured around indicators with the same rationale as that of variety seeking (i.e. share of wallet in terms of assets and debts). In other words, the observed indicators of both latent constructs show "actual actions" (Wilcox *et al.*, 2008) of bank customers. In contrast, future intentions cannot be observed, but only hypothesised. Therefore, "forward looking" variables such as future intentions to remain a customer, risk taking behaviour and resistance to change were treated as reflective constructs.

Coltman *et al.* (2008) also suggested assessing empirical justification as a second step, following theoretical justification, to assess the suitability of using reflective or formative constructs. Empirical justification involves testing for indicator intercorrelation, the relationships of indicators with their antecedents and consequences, measurement error and collinearity in order to detect the causal direction between constructs and their indicators (Coltman *et al.*, 2008). Testing for indicator interrelation of all constructs has been conducted in this study. The results show the intercorrelation for all indicators have similar positive signs and significance levels of relationships. The Cronbach alphas, testing the indicator relationships, revealed weak to moderate positive intercorrelation for variety seeking and current behaviour, and strong and positive intercorrelation for resistance to change and future intentions. The third set of testing, as part of the empirical determination of the nature of the constructs in SEM, is the measurement error and collinearity test. The vanishing tetrad test with fewer than four indicators per latent variable was conducted for each construct following Ting (1998); Bollen and Ting (2000) and Hipp *et al.* (2005). The results are presented in Table II.

Table II shows clear results for current behaviour (formative since $p < 0.05$) and future intentions, risk and resistance to change (reflective since $p > 0.05$). For variety seeking, a trend towards formative was found ($p = 0.079$), and the later structural equation model testing revealed better model fit for variety seeking as formative, supporting the conceptual view that the construct is of a formative nature. A Confirmatory Tetrad Analysis applying CTA-SAS developed by Ting (1998) was conducted for all variables, offering further support for the above decisions. The Tetrad test results shown in Table II, in combination with the indicator intercorrelation and indicator relationship testing, reject the reflective model for two of the five constructs. In particular, current behaviour and variety seeking were determined to be formative based on the Tetrad test, whereas for future intentions, risk and resistance to

Constructs	Number of indicators	χ^2/df	df	*p*-value	Implication
Current behaviour (SOW)	2[a]	18.44	2	< 0.001	Formative
Variety seeking	4	2.656	2	0.079	Formative
Future intentions	4	2.010	2	0.134	Reflective
Risk	1[a]	0.741	2	0.477	Reflective
Resistance to change	2[a]	0.017	1	0.897	Reflective

Note: [a]Following Ting (1998) as well as Bollen and Ting (2000) these tests include additional unrelated indictors since there are less than four predictors

Table II.
Tetrad test results for SEM constructs

change source sharing, the test did not reject the reflective model. The Confirmatory Tetrad Analysis for "variety seeking" is presented in Appendix 1 as an example.

The current study

Consumer behaviour and attitudes to banks and banking relationships were examined in a postal survey of Australian banking customers, the final usable sample size of which comprises 1,025 responses. For the purposes of this paper, the aim of the study was to explore the attitudinal predictors of bank loyalty. In this context, respondents provided their views on risk taking behaviour, variety seeking, their resistance to change and future banking intentions, typically in seven-point Likert scales. For their actual banking behaviour, respondents disclosed their allocation of savings/investments and debts/loans towards their main bank in percentages, i.e. share of wallet (SOW). SOW was measured separately for assets such as savings accounts, shares and bonds, as well for debts/loans such as car and home loans. "Future intentions" was measured by a factor score of a customer's intention to remain with their main bank, both short (six months) – and long-term (five years). In this context, SOW reflects a customer's current behaviour, while "future intentions" reflects their intentions to remain loyal. Both dimensions are commonly used in loyalty research with a strong focus on intentions rather than actual current behaviour, but rarely are they combined in one model, as is the case in this research.

Testing reflective and formative models of customer loyalty

The same data were used to test, first, two alternative models based on the constructs all treated as reflective, and, subsequently, the combined "hybrid" models that contain both reflective and formative constructs. This traditional structural model, using exclusively reflective constructs, is presented in Figure 1.

The full reflective approach, Figure 1, resulted in mis-specification of the model with unacceptable goodness of fit. In particular, estimation of this model revealed a high chi-square value, $\chi^2 = 1034.829$, p-value < 0.001 and value of ratio χ^2 to degree-of-freedom (χ^2/df) of 8.482. The value of ratio χ^2 to degree of freedom falls

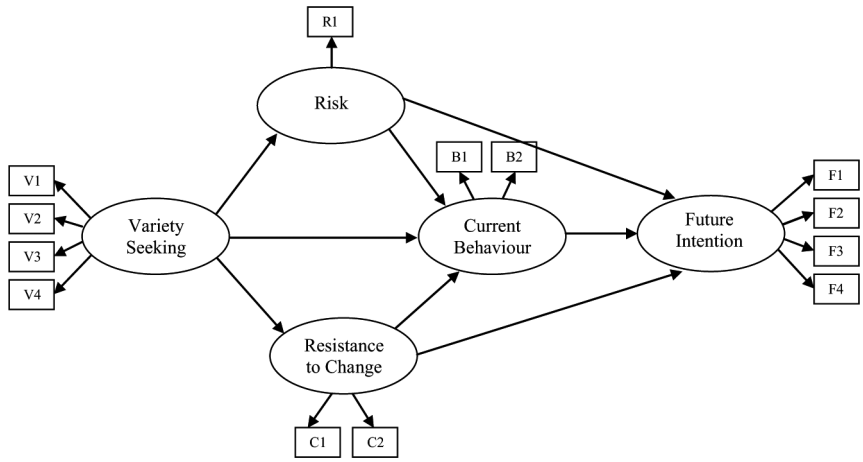

Figure 1.
Full reflective model

outside the acceptable range of less than 5.0 (Bollen, 1989), or less than 3.0 which is preferred (Byrne, 1998). Although the goodness of fit indices are more than 0.90, the value for the root mean square error of approximation (RMSEA = 0.073) falls slightly outside the acceptable range of 0.05 or less. In addition, NFI and CFI are also lower than the acceptable range of 0.95 or better (Hair *et al.*, 1998; Jarvis *et al.*, 2003). Based on the results of the estimation of fit indices, the full reflective model did not provide acceptable fit between the data and the theoretical model. Following Jarvis *et al.*'s (2003) and Petter *et al.*'s (2007) call to more critically assess SEM's based on reflective and formative constructs, a combined hybrid model was proposed and tested. The hybrid model is illustrated in Figure 2.

In this paper, the term "hybrid model" is introduced to signify a model that contains both reflective and formative measurements. Others have used the term "multiple indicator multiple cause" (MIMIC) (Sanchez-Perez and Iniesta-Bonillo, 2004a; Wilcox *et al.*, 2008), but MIMIC has been used for combined reflective and formative indicators in one single latent construct as well as for structural models with both reflective and formative measurements. The introduction of the new "hybrid" model term allows a clearer distinction between reflective and formative models (the hybrid model); as opposed to reflective and formative constructs (MIMIC).

Development of the most parsimonious hybrid model

Based on the finding that the full reflective model (presented in Figure 1) did not reveal acceptable model fit, hybrid models of reflective and formative constructs were tested. Table III provides an overview of the model fit indices and explanatory powers, starting with the initial "full reflective model", followed by the "hybrid" models A to C with gradually improving model fits. Therefore, the full reflective model (Figure 1) has neither theoretical nor empirical merits for further empirical testing by SEM. In the succeeding development of measurement scales the constructs "variety seeking" and "current behaviour" were both operationalised using formative measures/indicators. The tetrad test (Table II) empirically supports these formative measures. However, the purpose of the model evolution approach in this study is designed to show the evolution model quality, and thus started with the full reflective model nonetheless. The evolution of successively better fitting models is shown in Table III.

For the first hybrid model A, compared with the initial fully reflective model, variety seeking and current behaviour were changed to formative constructs, whereas risk, resistance to change and future intentions remained reflective constructs. The fit

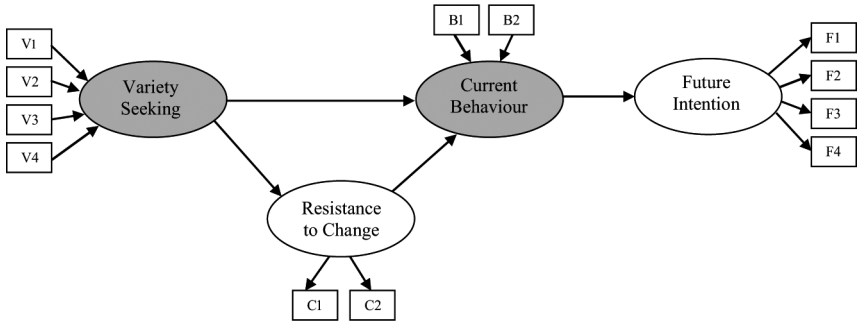

Figure 2.
Hybrid model

Table III.
Evolution of model fit indices and explanatory power

	Full reflective model		Hybrid model A		Hybrid model B		Hybrid model C	
	n	*p*	*n*	*p*	*n*	*p*	*n*	*p*
Fit indices								
Chi-squared χ^2	730.69		214.82		69.16		61.06	
Degrees of freedom (df)	61		56		45		35	
χ^2/df	11.98		3.836		1.54		1.75	
p value	0.000		0.000		0.012		0.004	
Comparative fit index (CFI)	0.849		0.964		0.994		0.993	
Bentler-Bonett normed fit index (NFI)	0.838		0.952		0.982		0.983	
Goodness of fit index (GFI)	0.912		0.969		0.989		0.989	
Root mean squared error of approximation (RMSEA)	0.104		0.053		0.023		0.027	
R-squared current behaviour	0.029		0.997		0.997		0.997	
R-squared future intention	0.328		0.574		0.499		0.500	
Coefficients								
Variety seeking → risk	0.687	< 0.001	0.784	< 0.001	0.784	< 0.001		
Risk → current behaviour	−0.155	0.154	−0.037	0.720	−0.020	0.860		
Variety seeking → resistance to change	−0.030	0.298	−0.067	0.084	−0.067	0.077	−0.075	0.069
Resistance to change → current behaviour	0.122	< 0.001	0.994	0.009	0.994	0.018	0.994	0.018
Variety seeking → current behaviour	0.076	0.381	0.080	0.427	0.072	0.518	0.092	0.129
Current behaviour → future intention	0.081	0.021	0.758	0.009	0.706	0.017	0.707	0.017
Risk → future intention	0.014	0.701						
Resistance to change → future intention	0.558	< 0.001						

indices for hybrid model A were substantially improved over those of the full reflective model, although the value of $\chi^2 = 214.818$ is considered high since p-value is less than 0.001, but the values of other important fit indices such $\chi^2/df = 3.836$, GFI = 0.969, NFI = 0.952, CFI = 0.964, and RMSEA = 0.053 fall inside the recommended threshold values. The relatively high chi-square is likely a result of the large sample size, although this is typically viewed favourably for representative empirical studies.

In order to improve the model's fit to the data, for hybrid model B, future intentions were modified to solely measure a customer's short-term intentions, i.e. within the next six months, and excluding their long-term view (five years). Conceptually, it seems logical that the two different timelines should not necessarily be reflected in one single variable. Further, and arguably more importantly, from a practitioner's perspective, short-term intentions supersede long-term intentions since the former are more likely to reliably predict actual behaviour, whereas the latter is arguably less likely to result in actual switching. In reviewing the goodness-of-fit statistics for hybrid model B (shown in Table III), the various fit indices for the model include $\chi^2 = 69.157$, which is considered low, and thus acceptable. A p-value of 0.012 also suggests a good model fit, in line with other important fit indices such $\chi^2/df = 1.537$, GFI = 0.989, NFI = 0.982, CFI = 0.994, and RMSEA = 0.023. In conclusion, the model fit for hybrid model B falls well inside the recommended threshold values. However, while fit measures were satisfactory, it was found that the association between a customer's risk taking behaviour and their current and future banking behaviour is not significant, and thus, in order to arrive at a more parsimonious model, the variable "risk" was removed for the final hybrid model C.

The model fit indices for hybrid model C are all very acceptable values, although slightly lower than for hybrid model B. As shown in Table III, the Chi-Squared is $\chi^2 = 61.058$ with a p-value of 0.004, $\chi^2/df = 1.745$, GFI = 0.989, NFI = 0.983, CFI = 0.993, and RMSEA = 0.027. While the model fit for hybrid model C is thus marginally lower than for hybrid model B, it is the most parsimonious of all models developed in this study and, as such, of most value to practitioners who aim to explain loyalty with as few variables as possible.

While the model fit indices during the model evolution improved from the full reflective model to the hybrid models A and B (model C was no longer an improvement of model fit, but was the most parsimonious model), the explanatory power for current behaviour (i.e. SOW) and for future intention also dramatically improved from the full reflective model to the hybrid models. The full reflective model explained only 3 per cent (R-squared 0.029) of current behaviour, while the hybrid models A to C each explained a remarkable, and admittedly somewhat unrealistic, 99.7 per cent (R-squared 0.997). In terms of future intentions, the full reflective model explained 33 per cent (R-squared 0.328), hybrid model A explained 57 per cent (R-squared 0.574) and hybrid models B and C each 50 per cent (R-squared 0.499 for model B; 0.500 for model C).

An examination of the coefficients in Table III; starting with model B given its superior model fit compared to model A) shows that variety seeking explains both risk taking behaviour ($\beta = 0.784$; $p < 0.001$) and resistance to change ($\beta = -0.067$; $p = 0.077$), but risk taking behaviour itself was not significantly associated with current behaviour ($\beta = -0.020$; $p = 0.860$). Consequently, "risk" was excluded from the model in order to obtain the most parsimonious model, resulting in hybrid model C. In hybrid model C, variety seeking explains resistance to change ($\beta = 0.075$; $p = 0.069$),

and in turn resistance to change explains current behaviour ($\beta = 0.994$; $p = 0.018$). Future intentions are predicted by current behaviour ($\beta = 0.707$; $p = 0.017$).

The above coefficient of 0.994 (which is approaching 1.00) for the path from resistance to change to current behaviour is exceptionally high, and is also in line with an adjusted R-squared of 0.997, suggesting that 99.7 per cent of current behaviour is explained by variety seeking and resistance to change. Such a constellation appears problematic from both empirical and theoretical perspectives.

Empirically, if these two constructs are highly correlated, discriminant validity should be proven. Appendix 2 shows that the four measures of variety seeking and the two measures of resistance to change are not related. The discriminant validity test revealed that the measures between the measures of the two construct are very low and that the two sets of measures each are related to different constructs, and as such discriminated from each other.

Theoretically, if resistance to change (i.e. a personality-related construct) has such an extremely high explanatory power, then what is the role of a service provider's marketing effort to satisfy the customer? Retail banking customers typically have their debts/loans arranged with their bank with a long-term perspective, e.g. their mortgages are often "locked in" for a number of years. In addition, customers have arrangements to have salary income directly transferred into a bank account and often have regular savings plans, and this scenario also conceptually supports the finding of this study that "resistance to change" therefore is strongly associated with a customer's loyalty level such as share of wallet. Variety seeking is often a factor in consumer choice for fast moving consumer goods (FMCG) and is also potentially a factor in financial services where banks and products may have been positioned in similar ways to FMCG. In contrast, this study finds that besides these repositioning attempts by banks, consumer behaviour is only marginally influenced by variety seeking in banking. In line with the empirical findings of this study of an insignificant link ($\beta = 0.092$; $p = 0.129$) between variety seeking and current behaviour, but a strong and statistically significant link ($\beta = 0.994$; $p = 0.018$) between resistance to change and current behaviour, this study lends support to the debate in the literature questioning the classic satisfaction to loyalty link. The high coefficients in this study (0.994 and 0.707) reflect the key associations in the tested model and suggest, in conclusion, that customer loyalty is explained by variety seeking, mediated by resistance to change. This study provides empirical support for a paradigm shift away from testing satisfaction as the key predictor of loyalty. Results of this study point to the importance of "inertia" as a key driver of loyalty in that this study establishes resistance to change as a strong explanator of customer loyalty.

Discussion and conclusion

The objectives of this study were to explore the concept of customer loyalty and its causal antecedents using both formative and reflective measurements in SEM. This study adds to the customer loyalty literature since new predictors have been tested: namely, variety seeking, resistance to change and risk taking behaviour (details of the estimates and p values are shown in Table III). Variety seeking is significantly associated with current behaviour, measured as share of wallet, via resistance to change, and current behaviour was significantly associated with future intentions (as measured in intentions to remain a customer). High explanatory power was found in

this study in explaining, and thus predicting, loyalty. Adjusted *R*-squares suggest that 99.7 per cent of current behaviour, and 50 per cent of future intentions can be explained (see hybrid model C).

A further notable finding is that, contrary to expectations, risk-taking, while statistically only significantly associated with variety seeking, was not an important predictor of loyalty in financial services and thus a more parsimonious model of loyalty could be generated excluding "risk". This may be a surprising result to bankers who may believe that risk is always a fundamental consideration in banking and investment decisions. On reflection, however, two possible explanations are worthy of mention. First, banking is often oligopolistic in Western markets, in Australia, dominated, for example, by four major banks. Customers have long conducted their banking believing that there are few, if any, significant differences between these banks and certainly nothing between them as regards risk and security. Consequently, risk, while theoretically important, is not salient in their choice of banks, as all are equally secure. Thus, considerations of risk will not figure prominently in banking customers' choice processes. Second, it should be noted that these data were collected before the onset of the global financial crisis (GFC) in which even major global banks were shown to have questionable balance sheets, which almost certainly would have changed banking customers' views of risk and security. Notwithstanding the GFC, the Australian banks have displayed remarkable resiliency, due in part to their conservative balance sheets, close regulatory oversight, and their modest exposure to the US sub-prime markets. At the same time, the Australian Government subsequently guaranteed the deposits of the major banks, which has arguably given the banks a substantial "free kick" at the expense of their smaller, non-guaranteed competitors.

A secondary outcome of this research has been to examine the utility of the two typical approaches to constructing SEMs. Several models, based on these competing approaches, are compared based on the identical sample, thus, allowing for an investigation of the effects of the different modelling approaches. It was found that for customer loyalty, a combined SEM model employing both reflective and formative measurements was superior to a purely reflective model. This finding is in line with a call (Coltman *et al.*, 2008; Diamantopoulos and Siguaw, 2006; Diamantopoulos *et al.*, 2008), thus far predominantly on theoretical rather than empirical grounds, to deviate from the standard reflective modelling practice, and to more carefully examine the true nature of observed and latent constructs. This study provides empirical evidence in support of previous conceptual papers, which propose the use of formative measurement models as an alternative to mis-specification in structural models employing reflective constructs (Diamantopoulos, 1999; Diamantopoulos *et al.*, 2008; Rossiter, 2007). This empirical finding is also consistent with the view that SEM should give greater weight to studies which seek to fit structural models to the observed empirical data; rather than to continue the overwhelming pre-occupation of marketing academics with finding data to support frequently naïve or self-evident theoretical models. This study provides some evidence that the investigation of "behavioural predispositions", in addition to the usual "service profit chain" (Heskett, 2002; Heskett *et al.*, 1997) and demographic variables, using a "hybrid" reflective and formative model can reveal worthwhile additional insights into the drivers of bank customer loyalty. At the same time, the use of formative and hybrid models offers the prospect of improved SEM results over models based on the traditional reflective approach.

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Appendix 1

Table AI.
Confirmatory tetrad analysis (CTA) – SAS for variety seeking (covariance/correlation matrix read from input matrix)

Yl	Y2	Y3	Y4
0.755	0.418	0.374	0.279
0.418	0.675	0.497	0.433
0.374	0.497	0.793	0.432
0.279	0.433	0.432	2.329

Table AII.
Confirmatory tetrad analysis (CTA) – SAS for variety seeking (list of tetrads)

Id	Tetrad	Residual	*t*-value
1	t(1,2,3,4)	0.018634	1.32605
2	t(1,2,4,3)	0.041913	2.24430
3	t(1,3,4,2)	0.023279	1.42234

Table AIII.
Confirmatory tetrad analysis (CTA) – SAS for variety seeking (list of non-redundant tetrads

Id	Tetrad	Residual
1	t(1,2,3,4)	0.018634
2	t(1,2,4,3)	0.041913

Table AIV.
Confirmatory tetrad analysis (CTA) – SAS for variety seeking (Matrix used for the test)

0.755	0.418	0.374	0.279
0.418	0.675	0.497	0.433
0.374	0.497	0.793	0.432
0.279	0.433	0.432	2.329

Appendix 2

	Variety seeking				Resistance to change	
	Thrills	Variety	Newthing	Meeting	Convince	Majmist
Variety seeking						
Seek thrills	1					
Like variety	0.318**	1				
Like new things	0.345**	0.679**	1			
Meeting new people	0.210**	0.483**	0.585**	1		
Resistance to change						
Convince	−0.064*	−0.022	−0.014	−0.016	1	
Major mistake (majmist)	−0.003	0.013	−0.011	0.014	0.489**	1

Note: *Correlation is significant at the 0.05 level (two-tailed); **correlation is significant at the 0.01 level (two-tailed)

Table AV.
Discriminant validity

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