Understanding Brand and Dealer Retention in the New Car Market: The Moderating Role of Brand Type

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Understanding Brand and Dealer Retention in the New Car Market: The Moderating Role of Brand Type

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Understanding Brand and Dealer Retention in the New Car Market: The Moderating Role of Brand Type

Abstract

Dealers are assumed to contribute positively to brand retention. We argue that the type of brand moderates the effect of dealer performance on brand retention. Moreover, *dealer* retention is determined by different drivers for dealers selling different types of brands. To analyze our claims empirically, we collected data on brand retention and dealer retention among consumers who recently purchased a new car. Our findings show that dealers of prestige and economy brands do not contribute to brand retention. Only dealers selling volume brands are in a position to improve brand retention rates. A simulation reveals however that the contribution of volume dealers to brand retention is rather small in comparison to the impact of brand-related variables on brand retention. In line with the notion of brand-dealer fit we also find that the impact of dealer extrinsic quality (e.g., dealer showrooms) and dealer payment equity on dealer retention differs between prestige, volume, and economy brands. Extrinsic dealer quality affects dealer retention most for dealers selling prestige brands and dealer payment equity is the most important determinant of retention for dealers selling economy brands.

Key-words: Customer loyalty, distribution channels, customer value

Introduction

In many markets firms sell products or services using intermediaries or dealers. Both the brand and the dealer strive to increase their respective retention rates. A consumer's dealer and brand retention decisions are often interrelated, because the brand-retention decision may be dependent upon the dealer's performance (Mittal, Kumar, and Tsiros 1999). This especially holds in markets, such as the new car market, where dealers are expected to add value to the brand they sell. Most brand manufacturers therefore strive after close ties with dealers to assure sufficient levels of dealer performance (e.g., service quality, showroom performance) to enhance brand retention rates (Aaker 1994; Anderson and Narus 1995; Chu and Desai 1995; Fites 1996). But how important is the dealer really in creating brand loyalty?

In the loyalty literature many researchers have focused on the dyadic relationships between consumers and manufacturers or between consumers and dealers (e.g., Anderson and Sullivan 1993; Bolton 1998; Crosby and Stephens 1987; Garbarino and Johnson 1999; Mittal and Kamakura 2001). The interplay between brand and dealer loyalty has gained only marginal attention. A notable exception is the study of Mittal, Kumar, and Tsiros (1999). They investigate how both dealer satisfaction and brand satisfaction impact both brand and dealer repurchase-intentions over time. They conclude that consumers' satisfaction with dealers positively affects their brand repurchase intentions, but that this effect declines over time. Contrary to this evidence, Punj and Brookes (2002) report that only a very small percentage of consumers consider the dealer important in their choice of a new car brand. These opposing results might be explained by the fact that Mittal, Kumar, and Tsiros (1999) used loyalty intention data instead of actual switching behavior to investigate the dealer's contribution to brand loyalty. This might

have led to overestimation of the contribution of the dealer to brand retention (Bolton, Lemon, and Verhoef 2004).

To reconcile these opposing views about the contribution of dealers to brand retention, we suggest that the contribution of the dealer to brand retention is dependent upon the type of brand being offered (Coughlan et al., 2001). For example, Mercedes buyers consider brand image and novelty important, but also the brand's impact on their social network (Fournier 1998). The predominance of the brand is therefore likely to reduce the dealer's contribution to brand loyalty. With less predominant brands, for example Ford, the dealer is likely to have a more prominent role in shaping brand loyalty. To date no studies have empirically investigated whether the contribution of the dealer to brand loyalty is moderated by brand type. Therefore, our first objective is to investigate whether the dealer's contribution to brand retention is moderated by the type of brand the dealer sells.

The second issue we focus on is how the dealer can influence the consumer's dealer retention decision. Dealers have several instruments at their disposal, such as the quality of the services provided, the atmosphere in the showroom and the prices charged, to create value for consumers and improve consumers' dealer loyalty. The effectiveness of each of these instruments might vary across different types of brands. Lexus dealers, for instance, mostly have luxurious showrooms, while Suzuki dealers often have rather sober showrooms. This suggests that dealers create a fit between the type of brand they sell and the instruments they use to increase dealer loyalty. Although several studies have investigated how dealers can influence dealer loyalty (e.g., DeWulf, Odekerken-Schröder, and Iacobucci 2000; Mittal, Kumar, and Tsiros 1999; Sirohi, McLaughlin, and Wittink 1999), no studies have yet considered how the effectiveness of these instruments depends on the type of brand that the dealer offers. Therefore, our second objective is

to test whether the effect of the dealer's instruments on dealer retention is moderated by brand type.

We have structured this article as follows. First, we present our theoretical framework and discuss our hypotheses. Subsequently, we discuss our results and use these results to conduct a policy simulation. We conclude with a discussion, managerial implications, research limitations, and suggestions for future research.

Theoretical Framework

In Figure 1 we display our theoretical framework. We focus on brand retention and dealer retention as our dependent variables. The dealer retention decision is based on the unobserved dealer value (or utility). This value is construed by consumers' evaluations of key dealer-related variables, such as intrinsic quality, extrinsic quality, dealer payment equity, dealer trust, dealer switching costs and prior ties with the dealer. The brand retention decision is based on consumers' subjective value (or utility) of the brand. This value is construed by consumers' evaluations of key brand-related variables, such as intrinsic product quality, extrinsic product quality, brand payment equity, brand equity, brand trust, brand switching costs, prior ties with the brand. Dealer value can also contribute to brand retention, as the dealer can only be retained when the brand is retained. Note that dealer and brand value are not directly measured, but function as latent constructs in our model. We will argue that the relationship between dealer and brand value is moderated by brand type, that is, the contribution of the dealer to brand loyalty varies across brand types. We will also argue that the effects of dealer quality and payment equity on dealer retention are moderated by brand type.

The brand- and dealer-related variables are based on prior work on the antecedents of brand loyalty and/or dealer loyalty in relationship marketing, customer equity and the (service)

quality literatures (e.g., Bolton 1998; Bolton and Lemon 1999; Bolton, Lemon, and Verhoef 2004; Chauduri and Holbrook 2001; Morgan and Hunt 1994; Oliver and Winer 1987; Rust, Lemon, and Zeithaml 2004; Zeithaml 1988; Zeithaml, Berry, and Parasuraman 1996) and are of relevance for brand manufacturers and dealers. We posit that each of the brand- and dealer-related variables, through the unobserved variables of brand and dealer value, affects brand and dealer retention respectively. We do not formulate formal hypotheses on these effects, because their influence on loyalty has been widely studied in various industries (e.g., DeWulf, Odekerken-Schröder, and Iacobucci 2000, Sirohi, McLaughlin, and Wittink 1999; Verhoef 2003). Instead we focus the moderating effect of brand type on the dealer's contribution to the consumer's brand retention decision, and the moderating effect of brand type on the effects of dealer quality (intrinsic and extrinsic) and dealer payment equity on dealer retention.

We distinguish between three brand types: prestige brands, volume brands and price or economy brands (Desarbo and Manrai 1992; Edmonson 2003a,b; Kirmani, Sood, and Bridges 1999; Park, Milberg and Lawson 1991). Prestige brands, such as Mercedes, BMW and Lexus, are premium priced and have high status. These brands usually have a relatively small market share. Prestige brands are purchased to communicate wealth, status and exclusivity (Bagwell and Bernheim 1996; Park, Millberg and Lawson, 1991). Volume brands, like Volkswagen and Ford, are usually priced near the market average and have relatively high market shares. These brands serve the majority of the market. They are not purchased for their status or exclusivity, but for reasons such as value-for-money. Finally, economy brands, such as Suzuki, Kia and Hyundai, are sold in the low-end segment of the market. These brands are priced below the market average. Not surprisingly, the most important reason for consumers to purchase this type of brand is price.

An important assumption in our model is that we assume that consumers first decide to be (dis)loyal to the brand and subsequently decide to be (dis)loyal to the dealer. There are three

reasons underlying this assumption. First, consumers continuously experience the performance of the car and only periodically experience the services of the dealer (Mittal, Kumar, and Tsiros 1999). Second, the price paid for a new car stands out as the most obvious cost of owning and using a car. Third, consumers tend to focus on the branded product instead of the dealer service. This focus is caused by the efforts of most car manufacturers to build a strong brand image and identity to position themselves in minds of consumers (Sullivan 1998).

-- Insert Figure 1 about here --

Hypotheses

Moderating Effect of Brand Type on the Effect of Dealer Value on Brand Retention

Most manufacturers operate under the supposition that dealers contribute to brand loyalty, because they contribute to the consumer's consumption experience through their marketing and service efforts. In line with this assumption Mittal, Kumar, and Tsiros (1999) have shown that both car satisfaction and service satisfaction positively affect consumers' intentions to repurchase the car brand, although the size of the effect of service satisfaction is much smaller than the size effect of product satisfaction. The channel – and brand equity literature also suggests that dealers contribute to brand retention through their value-adding channel activities (Coughlan et al. 2001; Keller 1998).

The contribution of dealers to brand loyalty may however not be as straightforward as the satisfaction and marketing channel literatures suggest. In the car market this link could be mitigated by three factors. First, improvements in the quality of cars make the dealer's service efforts progressively less important to consumers (Autopolis 2000). Second, the repurchase of a

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new car is an extended decision process (Ratchford, Lee, and Talukdar 2003). In such a process consumers' remembrance of prior experiences in the service process might decline over time (Verhoef, Franses and Hoekstra 2001). Instead, the consumer is more likely to focus on new car-related attributes (e.g., new designs, innovations) and/or the car's price at the time of repurchase. Third, during the consumption process (i.e., from purchase to repurchase) the contribution of the car and dealer to brand loyalty diminishes (Mittal, Kumar, and Tsiros 1999).

An issue that has remained under investigated is that the effect of the dealer on brand retention is moderated by brand type. This could explain why the literature has come up with mixed results on the contribution of the dealer to brand retention. In particular, we expect the dealer's contribution to be larger for volume brands than for prestige and economy brands. There are several reasons underlying this proposition. The marketing channel literature, for example, suggests that the dealer's contribution to brand value, and hence retention, is lower for products with higher levels of brand equity (Coughlan et al. 2001). This is consistent with research on consumer's reactions in out-of-stock situations, which shows that consumers with a strong brand preference are prepared to switch to another store to obtain their favorite brand (Campo, Gijsbrechts, and Nisol 1999). Prestige brands have a stronger brand reputation and higher brand equity than volume and economy brands. Most consumers buy prestige brands to advertise their wealth and achieve social status (Bagwell and Bernheim 1996; Braun and Wicklund 1989). These consumers value brand image, brand novelty, brand uniqueness and the resulting impact of the prestige brand on their social network more than consumers buying volume or economy brands. The predominance of the prestige brand is therefore likely to reduce the contribution of the dealer to brand retention.

Economy brands have in comparison to prestige and volume brands the lowest brand equity or brand image. Following Coughlan et al.'s (2001) argument this means that dealers of

economy brands are well positioned to contribute to brand retention. The most important rationale for consumers to buy an economy brand is price. This implies that consumers purchasing economy brands do not value other sources of differentiation that increase price, such as brand image and value adding dealer activities, as much as consumers buying prestige brands. As such, the price sensitivity of economy brand buyers limits the opportunities for dealers to contribute to brand retention. Consumers purchasing economy brands value price so much that they will search extensively for the best deal when buying a new car, independent from the level of service provided by the dealer. They might simply switch to another brand or dealer, just because that choice offered the best value for money. Together these arguments suggest that a dealer's opportunities to contribute to brand retention are limited for dealers selling economy brands.

Volume brands have a moderate level of brand equity in comparison to prestige and economy brands. Thus, there are sufficient opportunities for dealers to contribute to brand retention (Coughlan et al. 2001). Dealers of volume brands can also contribute to brand retention better than dealers of prestige and economy brands, because consumers in this market segment do not focus on a single attribute (like brand image with prestige brands and price with economy brands), but on multiple product and service related attributes. This suggests that the dealer's contribution has a more prominent role in shaping brand retention for volume brands than for prestige and economy brands. Thus, we hypothesize that:

H_1:   *The effect of dealer value on brand retention is larger for volume brands than for prestige brands and economy brands.*

Moderating Effect of Brand Type on the Effect of Dealer Variables on Dealer Retention

Besides a moderating effect of brand type on the effect of dealer value on brand retention, we also expect that brand type moderates the effect of some dealer variables on dealer retention. We have two main underlying rationales for this moderating effect. First, following the brand consumption system approach advocated by Mittal, Kumar, and Tsiros (1999), consumers will consider the dealer as representing the brand. Hence, there should be a fit between the dealer and the brand. From a consumer perspective, this brand-dealer fit is defined as the consumers' perception of the consistency between brand attributes and dealer attributes (Aaker and Keller 1990). The notion of fit has mainly gained attention in the brand extension literature, which has shown that this fit-concept is important for the evaluation of brand extensions (Keller and Aaker 1992; Tauber 1988). In concurrence, brand-dealer fit will be important for consumers' evaluations of dealers, especially for exclusive dealerships. As noted in our discussion on the moderating effect of brand type on the contribution of the dealer to brand retention, each brand type has different core attributes. Following the notion of brand-dealer fit, we assume that consumers aim for consistency between the brand's core-attributes and the dealers' core attributes. Thus, the effects of dealers' extrinsic quality, and dealer payment equity on dealer retention should be different for the three brand types. A second underlying rationale for the moderating effect of brand type concerns the value creating opportunities for a dealer. As most cars have a high quality, it becomes more difficult for dealers to provide value to the consumer (Autopolis 2000). This is mainly prevalent for the effect of intrinsic dealer quality on dealer retention.

Intrinsic Dealer Quality

Intrinsic dealer quality refers to the utilitarian nature of the service provided by dealers (e.g., quality of maintenance) and is as such, directly related to the cars' functional performance. Mittal, Kumar, and Tsiros (1999) have shown that intrinsic dealer quality positively affects consumers' loyalty to dealers. In line with this finding we assume a positive contribution of intrinsic dealer quality to dealer retention. The dealer's contribution is however likely to be different for cars with different levels of intrinsic quality (e.g., engine, durability). When the car has a lower (higher) intrinsic quality, the dealer's intrinsic quality is more (less) important for the functional performance of the car. In such instances, the dealer's intrinsic quality should have a larger (smaller) contribution to consumers' perception of dealer performance. Economy brands have, relative to volume and prestige brands, the lowest intrinsic quality level. Thus, economy brand dealers have more opportunities to "improve" the functional performance of the car itself. This suggests that intrinsic dealer quality should be more important for economy brands than for volume and prestige brands. Thus, we hypothesize that:

H_2:   *The positive effect of intrinsic dealer quality on dealer retention is (a) largest for*

     economy brands and (b) smallest for prestige brands.

Extrinsic Dealer Quality

The extrinsic quality provided by dealers relates to the experiential or hedonic side of the dealer service (Babin, Dardin, and Griffin 1994). Based on the service quality literature we assume a positive contribution of extrinsic dealer quality to dealer retention. High extrinsic quality may also stress brand status, by fitting up tasteful and luxury dealer showrooms. This status is most important for prestige brands. Therefore, we expect extrinsic dealer quality to contribute most to

dealer value for prestige brands. For economy brands, a high extrinsic dealer quality can have negative consequences for dealer retention. High extrinsic quality levels may signal that the dealer is not cost-efficient, resulting in a misfit between brand and dealer. This may cause consumers to feel that they are paying too much for the dealer's services and lead to dissatisfaction (Yin Lam et al. 2004). Hence, we hypothesize the following:

H3:   The positive effect of extrinsic dealer quality on dealer retention is (a) largest for prestige brands and (b) smallest for economy brands.

Dealer Payment Equity

The dealer's payment equity is defined as consumers' perceived fairness of the price paid for dealers' products and services (Bolton and Lemon 1999). Although empirical results are mixed, the literature generally assumes that payment equity positively affects retention (e.g., Bolton, Kannan, and Bramlett 2000; Verhoef 2003). A low price level and value-for-money are the core attributes of economy brands. Following the notion of brand-dealer fit, dealers of economy brands should have high levels of payment equity in order to achieve sufficient consumer loyalty. Dealer payment equity seems to be less important for consumers purchasing volume brands because price is not the most important attribute for consumers buying volume brands. For prestige brand consumers price is even less important because prestige brands focus on status and image. Moreover, consumers purchasing prestige brands are less price-sensitive since they are willing and able to pay premium prices (Blattberg and Neslin 1990). Hence, it seems unlikely that payment equity is very important for prestige brand customers. Based on this reasoning we hypothesize that:

H₄: *The positive effect of dealer payment equity on dealer retention is (a) largest for economy*

         brands and (b) smallest for prestige brands.

Methodology

Data Collection

The Dutch Centre for Vehicle Technology and Information (RDW) randomly provided the contact details of 4291 consumers that privately bought a new car within the past two months. Each consumer was contacted by telephone and asked to participate in the study. A total of 1640 consumers were willing to cooperate (response rate = 38.2%). To be eligible for participation in the study consumers had to meet two criteria. First, they must have made a repurchase. Thus, we excluded first-time purchases from our study. Second, they must have had their car regularly serviced and maintained at an official dealer selling that particular car brand. These selection criteria resulted in a reduced sample size of 999 consumers willing to cooperate.

These 999 consumers were interviewed by phone using a standardized questionnaire. In answering the questions respondents were asked to primarily focus on the car brand that they recently traded-in and the dealer from which this car was bought and at which it was serviced. This resulted in a usable sample of 970 respondents (29 incomplete responses were excluded from the analysis). In the estimation of our econometric model, we also excluded 15 respondents who moved to another city or village and provided this as their primary reason for dealer switching. The key sample characteristics, shown in Table 1, are in line with Dutch market studies on the characteristics of new car buyers. A routine check for respondent bias indicated that no significant differences existed in the mean responses on any construct across respondents with different socio-demographic characteristics (i.e., gender, age and education).

Measure Development and Pre-testing

We established a dichotomous variable called brand retention by comparing the brand of the consumer's newly repurchased car with the brand of the car that the consumer previously owned. These brand switching details were obtained both from the RDW database and cross-checked by means of the survey data. Likewise, we established a dichotomous variable labeled dealer loyalty by comparing the dealer from which consumers purchased their new car with the dealer from which the previously owned car was purchased and serviced. The dealer switching behavior was obtained from the survey data.

To measure the consumer's perceptions with regard to the brand and dealer-related variables we generated a pool of fifty-five items for measuring each of the constructs using literature search and interviews with academics and consumers. Pretests of these items were performed in three phases: (1) face-to-face interviews with 4 academics, (2) interviews with 4 industry experts and; (3) a test of substantive validity involving 4 consumers. By the end of pre-testing participants reported no concerns and the questionnaire was therefore ready for final administration.

We measured the brand and dealer-related variables using multi-item scales (see Appendix A). We used 3 and 11 items respectively to measure the consumer's perception of intrinsic brand and dealer quality and 11 and 5 items respectively to measure consumer perceived extrinsic brand and dealer quality. These items are based on Mittal, Kumar, and Tsiros (1999) and Parasuraman, Zeithaml and Berry (1985). We measured consumer perceived brand and dealer payment equity using 4 and 7 items respectively. These items are based on Bolton and Lemon (1999), Maddox (1982), Oliver and Swan (1989) and Lichtenstein and Bearden (1989).

We used 2 items to measure the consumer's trust in the brand and in the dealer. These items are based on Chauduri and Holbrook (2001). We developed 4 items to measure consumer perceived brand equity by drawing on Keller (1993). Finally, we measured consumer's perceived brand and dealer switching costs, each with 2 items, based on Anderson and Weitz (1992) and Kumar, Scheer, and Steenkamp (1995). Prior ties with the brand or dealer is an indicator of revealed loyalty in the past and/or inertia (Rust, Lemon, and Zeithaml 2004). The prior ties with the car brand was measured by asking if the respondent had purchased the same car brand before (i.e., before the purchase of the car recently traded in). A similar type of question was asked to measure the respondent's prior ties with the dealer. This resulted in a dichotomous variable in which a 1 indicates prior ties and a 0 the absence of prior ties.

Assessment of Psychometric Properties

To purify the list of items of the multi-item scales we computed inter-item correlations and corrected item-to-total correlations for each item, taking one subscale at a time, to obtain unidimensionality (Steenkamp and Van Trijp 1991). We eliminated items for which these correlations were not significant ($p<0.01$). Principal axis factoring explored the unidimensionality of each purified scale using an eigenvalue of 1.0 and factor loadings of 0.40 as the cut-off points. Computing reliability coefficients explored the reliability of each purified, unidimensional scale. Where the coefficient alpha was smaller than 0.7, we removed the item with the lowest corrected item-to-total correlation until meeting the 0.7 level (Nunnally 1978). This procedure resulted in a reduced set of 49 items. The deleted items are marked in appendix A.

To further refine the measures we used the reduced set of items to estimate two CFA-models using ML-estimation in LISREL 8.3 (Jöreskog and Sörbom 1993). The first CFA model included the items pertaining to the brand-related variables. The second model included the items

pertaining to the dealer-related variables. The modification indices showed that the fit of both models could be improved by eliminating two items respectively. The deleted items are marked in the appendix. The results of the re-specified models, reported in tables 2 and 3, indicate that the absolute (i.e., GFI and NFI) and relative (i.e., NNFI, CFI and IFI) fit indices are at or above the threshold value of 0.90 (Bagozzi and Yi 1988; Gerbing and Anderson 1992). The parsimonious fit measures (i.e., χ^2/df) are 3.02 and 3.42 respectively, well within the acceptable range of 2 to 5 (Marsh and Hovecar 1985). The RMSEAs are below the recommended 0.08 level (Browne and Cudeck 1993). In both models the composite reliabilities of the scales exceed the 0.70 threshold for acceptable reliability (Bagozzi and Yi 1988) and the majority of the average values for extracted variance exceed the threshold level of 0.50. Together these results indicate that the scales are internally consistent. Convergent validity was indicated by the fact that in each model all items significantly load (t>2.0) on their corresponding latent construct structure (Bagozzi, Yi, and Phillips 1991).

-- Insert Table 2 and Table 3 about here --

We assessed the discriminant validity across the subscales by estimating two-factor models for each possible pair of subscales twice: once constraining the correlation between the latent variables to unity, and once freeing the parameter. We used a chi-square difference test to assess whether the chi-square of the unconstrained model was significantly lower (p<0.05) than that of the constrained model as evidence of discriminant validity. To further assess discriminant validity we examined the 95% confidence intervals around all pair-wise factor correlations (Bagozzi, Yi, and Phillips 1991). The results evidenced discriminant validity because none of the

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confidence intervals encompassed the value of 1.0. Table 4 shows the means, standard deviations and inter-construct correlations.

-- Insert Table 4 about here --

Together the results of the tests indicated a sufficient degree of unidimensionality, reliability and validity. Based on this evidence, we formed the constructs by averaging the responses to each.

Classification of Brand Types

For the classification of the brands into the three brand types we asked a separate sample of randomly selected Dutch consumers to classify twenty-eight brands as either economy, volume or prestige brands. Each brand was classified by 62 consumers. The twenty-eight brands in this classification study were the brands that the respondents in the survey mentioned as the brands of their traded-in car.

To assess the reliability of the consumers' judgments we used the proportional reduction in loss (PRL) approach (Rust and Cooil 1994). The results in appendix B show that the PRL-reliability measure is 0.99. This indicates that the assignment of brands to the different brand types is reliable. The consumers agreed that Daewoo, Daihatsu, Hyundai, Kia, Seat, Skoda, Subaru and Suzuki are economy brands. Citroen, Fiat, Ford, Honda, Mazda, Mitsubishi, Nissan, Opel, Peugeot, Renault, Toyota, and Volkswagen are considered volume bands. Alfa Romeo, Audi, BMW, Chrysler, Lancia, Mercedes, Rover, and Volvo are judged as prestige brands. The validity of this classification was assessed by comparing our classification with the official classification used by the Dutch Dealer Association (NDA). The two classifications were quite similar, which confirmed the validity of our brand type classification.

Nested Logit Model

As already mentioned we assume a hierarchy in consumers' brand retention and dealer retention decisions. At the same time we assume that the dealer can increase brand retention. A model that enables us to model both the hierarchical nature of consumers' retention decisions and the contribution of the dealer to brand retention is the nested logit model (Franses and Paap 2001; Greene 1997; McFadden 1981). The structure of this model is discussed below.

Dealer Retention

We estimate the probability that the consumer is loyal to the dealer, conditional on being loyal to the brand, using a standard binominal logit model (Guadagni and Little 1983). The dealer retention decision (DRET) of consumer i depends on the consumer's perception of the dealer-related variables that drive dealer retention: Dealer Intrinsic Quality (DIQ), Dealer Extrinsic Quality (DEQ), Dealer Payment Equity (DPE), Dealer Trust (DT), Dealer Switching Costs (DSC), and Prior Ties with the Dealer (DPT). We allow for the hypothesized moderating effects of brand type by estimating brand type specific parameters for these variables. This is accomplished by including an interaction between the brand type dummies for each brand type (dummy prestige brand (DPRB), dummy volume brand (DVOB), and dummy economy brand (DECB)) and the variables that are moderated by brand type. We also include brand type dummies as main effects. The dealer retention probability, conditional on the consumer being brand loyal (BRET=1), is mathematically formulated as:

(1) $P(DRET_i \mid BRET_i = 1) = P(U^*_{d,i} > 0)$

(2) $U^*_{d,i} = U_{d,i} + \varepsilon_{d,i}$

(3) $U_{d,i} = \beta_0 + \beta_{1p}DPRB*DIQ_i + \beta_{1v}DVOB*DIQ_i + \beta_{1e}DECB*DIQ_i + \beta_{2p}DPRB*DEQ_i$

$$+\beta_{2v}\text{DVOB*DEQ}_i + \beta_{2e}\text{DECB*DEQ}_i + \beta_{3p}\text{DPRB*DPE}_i + \beta_{3v}\text{DVOB*DPE}_i$$

$$+\beta_{3e}\text{DECB*DPE}_i + \beta_4\text{DT}_i + \beta_5\text{DSC}_i + \beta_6\text{DPT}_i + \beta_7\text{DPRB}_i + \beta_8\text{DVOB}_i$$

$U_{d,i}^{*}$ is usually interpreted as the latent utility that consumer i associates with the dealer. The consumer then decides to stay loyal when this latent utility is positive: $U_{d,i}^{*} > 0$. When a Gumbel distribution is assumed for the unobserved component in this latent utility, $\varepsilon_{d,i}$, the familiar Logit model results, so

$$(4) \qquad P(DRET_i \mid BRET_i = 1) = \frac{\exp(U_{d,i})}{1 + \exp(U_{d,i})}$$

Brand Retention

In the nested logit framework the brand retention probability depends upon the expected utility obtained from the dealer. This expected utility reflects the contribution of the dealer to brand retention. This is usually referred to as the inclusive value component. Depending on the application this value has a specific content. For example, researchers modeling category purchase incidence and brand loyalty refer to this value as category value (Bucklin and Lattin 1991). Similarly, we refer to this inclusive value as dealer value (DV). Ben-Akiva and Lerman (1985) show that the natural logarithm of the denominator of the dealer retention probability in equation (3) equals DV. We allow for the hypothesized moderating effect of brand type on dealer value by estimating brand type specific parameters for these variables by including interactions between the brand type dummies and dealer value. To model the brand retention decision of consumer i, we use the binomial logit model with dealer value and the brand-related variables (Brand Intrinsic Quality (BIQ), Brand Extrinsic Quality (BEQ), Brand Payment Equity (BPE),

Brand Trust (BT), Brand Equity (BE), Brand Switching Costs (BSC), and Prior Ties with the Brand (BPT)) as predictors of brand retention. The mathematical formulation is as follows:

(5) $P(BRET_i = 1) = P(U_{b,i}^* > 0)$

(6) $U_{b,i}^* = U_{b,i} + \varepsilon_{b,i}$

(7) $U_{b,i} = \theta_0 + \theta_1 BIQ_i + \theta_2 BEQ_i + \theta_3 BPE_i + \theta_4 BT_i + \theta_5 BE_i + \theta_6 BSC_i + \theta_7 BPT_i + \theta_8 DPRB_i$

$\qquad + \theta_9 DVOB_i + \tau_{0p} DPRB*DV_i + \tau_{0v} DVOB*DV_i + \tau_{0e} DECB*DV_i$

(8) $DV_i = \log(1 + \exp(U_{d,i}))$

Similar to the dealer retention model, $U_{b,i}^*$ is the consumers' unobserved latent utility of the brand and $\varepsilon_{b,i}$ is a random error term for the brand retention equation.

Estimation Procedure

The nested logit model is estimated using the Maximum Likelihood method. The likelihood for the nested logit model is given by (Franses and Paap 2001; Greene 1997):

(9) $LnL = \sum_{i=1}^{n} \ln \left(\begin{array}{c} (1 - BRET_i)*(1 - P(BRET_i = 1)) + BRET_i * P(BRET_i = 1)* \\ \left[DRET_i * P(DRET_i = 1 | BRET_i = 1) + (1 - DRET_i)* \\ (1 - P(DRET_i = 1 | BRET_i = 1)) \right] \end{array} \right)$

The differences between the brand type specific coefficients are tested by means of Wald-coefficient tests.

Empirical Results

Retention rates

Of the consumers within our sample: (1) 47.3% is brand loyal and dealer loyal; (2) 13.3% is brand loyal and dealer disloyal; (3) 36.0% is brand disloyal and dealer disloyal; and (4) 3.4% is brand disloyal and dealer loyal. The latter percentage reflects the distribution structure in the Netherlands in which the vast majority of car brands are distributed through exclusive dealerships. The occurrence of multi-brand dealerships is so uncommon that we decided to exclude consumers disloyal to the brand and loyal to the dealer from the estimation of our nested logit model. The final sample for the estimation of our model consisted of 922 consumers.

Nested Logit Model Results

The parameter estimates of equations (3) and (7) are reported in Table 5.[4] In the brand retention equation, we are particularly interested in how the effect of dealer value on brand retention differs between the three brand types. Our results reveal a non-significant effect of dealer value for prestige brands, a positive effect for volume brands (τ_{0v}=0.36; p=0.00) and a non-significant effect of dealer value for economy brands. Based on a Wald test we do not accept the assumption of no differences in the coefficients of the brand types (p=0.03). Pair-wise coefficient tests reveal a significant difference between the prestige brands and the volume brands (p=0.01), but no significant differences between the volume brands and economy brands (p=0.26) and the prestige brands and the economy brands (p=0.12). Thus, our results provide partial support for H_1, which

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[4] We have, as previously explained, assumed that consumers first decide on brand retention and subsequently on dealer retention, which is reflected in our specification of the nested logit model. However, we also estimated a nested logit model where consumers first decide on dealer retention and subsequently on brand retention. This model has however a worse fit than the presented model. This supports our assumption on the precedence of retention decisions.

states that the positive contribution of the dealer to brand retention is larger for volume brands than for prestige brands and economy brands. However, the finding that the contribution of the dealer to brand retention is insignificant for prestige and economy brands is of interest.

For brand retention, we find the expected positive effects of brand extrinsic quality (θ_2=0.59; p<0.01), brand payment equity (θ_3=0.26; p<0.05), brand equity (θ_4=0.23; p<0.01), brand trust (θ_5=0.43; p<0.01), brand switching costs (θ_6=0.21; p<0.01) and prior brand ties (θ_7=0.58; p<0.01). We find no significant effect of brand intrinsic quality on brand retention. The estimation results do not show significant effects of the prestige brand dummy and the volume brand dummy[5].

In the dealer retention equation, the results show that dealer intrinsic quality has a negative effect (β_{1p}=-3.18; p<0.05) for prestige brands, while it has no significant effects for both volume brands (p=0.80) and economy brands (p=0.37). These results are in line with our hypothesis that the effect is smallest for prestige brands. The estimated negative effect for prestige brands is counterintuitive. Perhaps dealers of prestige brands should not focus on intrinsic quality, as consumers in this market segment demand the highest possible service level. Intrinsic quality is at best a point-of-parity and not a competitive advantage. Dealers presenting themselves as having high intrinsic quality might actually signal the lack of a real competitive advantage. In combination with an insignificant difference between the volume brand and the economy brand, the estimation results provide partial support for H_2.

Dealer extrinsic quality has a positive effect (β_{2p}=3.17; p=0.09) on dealer retention for prestige brands and a negative effect for economy brands (β_{2e}= -0.97; p=0.04). No significant

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[5] We also estimated a model without the moderating effects of brand type. In this model we found a significant main effect of dealer value on brand retention. The coefficients and significance levels of the included predictors of both brand- and dealer retention were robust with respect to this change in specification.

effect is found for volume brands. A Wald test reveals that the three coefficients significantly differ from each other (p=0.02). Pair-wise Wald tests reveal that the coefficients for prestige brands and volume brands are significantly larger than the coefficient for economy brands (p=0.02; p=0.02) and that the coefficient for prestige brands is also significant larger than the one for volume brands at a 6% significance level. Thus, we find support for H_{3a}, albeit at a significance level of 6%, and also for H_{3b} stating that the positive effect of extrinsic dealer quality on dealer retention is respectively largest for prestige brands and smallest for economy brands.

With respect to dealer payment equity we find a negative effect for prestige brands (β_{3p}=-1.14; p=0.08) and positive effects for volume brands (β_{3v}=0.34; p=0.06) and economy brands (β_{3e}=0.90; p=0.05). Again, we have an unexpected sign for the effect of payment equity for prestige brands. Although payment equity is unlikely to be a point-of-parity, low prices might still signal poor performance on other, more important, attributes. Moreover, customers having high payment equity scores might be more price sensitive, which leads to more defection (Bolton and Lemon 1999; Verhoef, Franses, and Hoekstra 2001). A Wald test reveals unequal coefficients for the three brand types (p=0.03). Additional pair-wise Wald tests show differences in coefficients between prestige brands and volume brands (p=0.01) and between prestige brands and economy brands (p=0.00). No significant difference is found between the coefficients of volume brands and economy brands. Thus, we find support for H_{4b}, stating that the positive effect of perceived dealer payment equity on dealer retention is smallest for prestige brands. No support is found for H_{4a}, which proposed that the positive effect of perceived dealer payment equity on dealer retention is largest for economy brands.

For the other antecedents of dealer retention, we find positive effects of dealer trust (β_4=0.64; p<0.01), dealer switching costs (β_5=0.16; p<0.05) and prior ties with the dealer (β_6=0.46; p<0.05).

-- Insert Table 5 about here --

Policy Simulation

One of the crucial issues in this study relates to the contribution of dealers to brand retention. Our empirical results show that only dealers of volume brands significantly contribute to brand retention. This implies that manufacturers of volume brands can enhance brand retention by improving consumers' perceptions of brand-related variables, but also by improving consumers' perceptions of the dealer-related variables using dealer incentive programs. However, when making decisions on the allocation of retention budgets it is important to have knowledge about the size of the contribution of both the brand and the dealer-related variables to brand retention. To provide this knowledge we have simulated the effect of changes in two important brand retention variables (i.e., brand payment equity and brand trust) and in two important dealer-value determinants (i.e., dealer payment equity and dealer trust) on brand retention. The results of this simulation are shown in Figure 2. The results reveal that changes in brand trust and brand payment equity have a strong positive effect on the brand retention probability. Increases in dealer payment equity or dealer trust only have a marginal positive impact on this probability.[6] Thus, although dealers of volume brands contribute to brand retention, the size of the impact of

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[6] Given the nonlinearity of the Logit function, one expects nonlinear curves in this graph. Indeed, the curves are nonlinear, but we display a part of the Logit function that is almost linear.

the dealer-related variables is small when compared to the effect of the brand-related variables. We have only reported this analysis for volume brands, as the effects of dealer value turned out to be insignificant for economy and prestige brands.

-- Insert Figure 2 about here --

Discussion and Implications

In this study we have simultaneously investigated how brand and dealer-related variables affect consumers' brand and dealer loyalty decisions. In doing so, we have extended Mittal, Kumar, and Tsiros' (1999) study from a theoretical perspective by looking at the moderating role of brand type and from an empirical perspective by investigating actual switching behavior instead of purchase intentions. From a modeling standpoint, we have used the nested logit model to study the interplay between manufacturers and dealers in creating brand loyalty, which to date had been primarily used in scanner panel data applications (e.g., Bucklin and Lattin 1991; Bucklin and Gupta 1992).

Discussion

The results of our study are summarized in Table 6. This overview reveals that we found full support for four hypotheses, partial support for one hypothesis, and no support for two hypotheses. The conclusions that can be drawn from these results are discussed below.

-- Insert Table 6 about here --

The first conclusion is that the contribution of a dealer to brand retention is dependent on the type of brand offered by the dealer. Only dealers selling volume brands have a significant positive impact on brand retention. Dealers selling prestige brands and economy brands seem to be in a position where they cannot contribute to brand retention. The lack of a contribution of prestige brand dealers is consistent with the expectations from the marketing channel literature that the contribution of dealers to brand value, and hence retention, is smaller for high equity brands (e.g. Coughlan et al. 2001). That dealers of economy brands, with on average low brand equity, fail to contribute to brand retention is not noted in the marketing channel literature, but can be explained by the price sensitivity of the buyers of economy brands. The contribution of volume brand dealers to brand retention suggests that dealers selling brands with an average equity can affect consumers' brand retention decisions most. Our policy simulation reveals however that the size of this contribution is rather small. From a manufacturer's perspective this means that the returns of direct investments in the brand are much higher than indirect investments in dealers through all kinds of dealer programs. Overall, we conclude that the contribution of the dealer to brand retention in the new car market should not be exaggerated.

A second conclusion is that the effect of intrinsic and extrinsic dealer quality and dealer payment equity on dealer retention varies for dealers selling different brand types. We found that extrinsic dealer quality is important for prestige brand dealer retention, but not for dealers selling volume brands. High extrinsic quality even has a detrimental effect on dealer retention for economy brands. Dealer payment equity is less important for prestige brand dealer retention and of equal importance for consumers' loyalty to dealers selling volume and economy brands. We used the notion of brand-dealer fit to explain these findings. This notion is rooted in the brand-extension literature (Keller and Aaker 1992) and suggests that consumers' perceptions of the brand should line up seamlessly with the perceptions of the dealer. This explains why extrinsic

dealer quality is important for prestige brands that revolve around status and why dealer price is important for economy brands with a strong price focus. The negative effect of the extrinsic quality of dealers selling economy brands on brand retention also illustrates the notion of brand-dealer fit. Economy brand consumers perceive luxurious dealer showrooms as incompatible with low priced cars. They may even consider expensively fitted up showrooms a waste of money that raises the price they have to pay for a new car. This misfit lowers consumers' dealer retention probabilities.

Implications

Our research has important implications for brand manufacturers and dealers. Most brand manufacturers strive for close relationships with dealers in order to improve dealer performance. Improvements in dealer performance are expected to lead to improvements in brand value and brand retention rates. Our findings suggest that only dealers of volume brands contribute to brand retention. Manufacturers of economy and prestige brands should not expect investments in, for example, dealer service quality and dealer showrooms, to lead to improved brand retention. These manufacturers should carefully inspect the expected returns from investments in dealers.

Dealers of volume brands are capable of improving brand retention rates. Our simulation reveals however that the effect of brand-related variables on brand retention is much stronger than the effect of dealer-related variables. This means that in making trade-offs between investments in the brand or the dealer, the volume brand manufacturer should probably choose to invest in the brand in order to achieve higher retention rates. We are aware however that most manufacturers in the new car market find it increasingly difficult to achieve a distinct competitive advantage on brand-related attributes. Investments in dealers might be the only opportunity to establish a competitive advantage and improve brand retention rates. This is illustrated by

Jacques Nasser, former CEO of Ford, who claimed that: *"Excellence in manufacturing, quality and productivity will no longer be enough. They are becoming standard within the industry"* (Vandermerwe and Taishoff 2000). It is also important to emphasize that our study focuses on customer retention and not on the acquisition of new customers. An attractive dealer showroom helps, for example, to attract new customers.

Our results also have implications for dealers. Dealers of volume brands can use our findings to show manufacturers that they positively contribute to brand retention. In doing so, they gain more power in the channel. The power base of dealers of prestige and economy brands however is likely to diminish, because they fail to contribute to brand loyalty. From a manufacturer's perspective they might seem to be exchangeable for other dealers and alternative outlets. These dealers simply function as a point of purchase that adds limited value to the brand. To avoid that manufacturers seek alternative outlets (e.g., supermarkets) to stimulate car sales, prestige and economy brand dealers have to rethink their strategic position within the channel. This is also important because manufacturers might consider selling cars to consumers themselves, either through manufacturer owned outlets or through the Internet, and leaving the service function to a reduced number of (new) specialized service points. To avoid lockout and disintermediation these dealers could consider selling and servicing multiple brands to enhance consumers' dealer loyalty. Dealers of prestige and economy brands could also focus on selling and servicing multiple brands within a specific product category (e.g., convertibles) to provide additional value to consumers and ensure their position as channel intermediary. The recent success of car department stores in the UK highlights the relevance of this strategy (Edmonson 2003c). Our findings also suggest that dealers of prestige and economy brands should pursue different strategies to ensure brand-dealer fit. Dealers of prestige brands should emphasize extrinsic quality and dealers of economy brands should stress their high levels of payment equity.

Dealers of brands such as Hyundai and Suzuki should, for example, not only emphasize their low maintenance and service costs, but also make sure that consumers' perceptions of their showrooms is consistent with their brand's high payment equity image. Thus they should have rather frenetic showrooms.

Limitations and Future Research

Our study is limited by several factors that should be addressed in future research. First, our sample is limited geographically. Our hypotheses should be tested further in other countries. Second, we collected our data after the repurchase decision. As a result the responses may be biased towards the actual decision. Ideally we would have liked to gather data on consumers' perceptions about the brand- and dealer-related variables before the repurchase. However, as we interviewed consumers shortly after their repurchase decision, we believe that this bias should not be too problematic (cf. Punj and Brookes 2002). Third, we collected cross-sectional data. Future research could collect longitudinal perceptual data and longitudinal switching data. If these data are available consumer heterogeneity can explicitly be modeled using latent class and/or hierarchical Bayes type of models. Fourth, we did not include competitive data on brands and dealers in our study. The impact of competition might (partially) have been captured in consumers' perceptions of the brand- and dealer-related variables. Moreover, most consumers are unlikely to be able to evaluate competitive brands and dealers, because they usually drive a single car for a number of years and have their car maintained and serviced at one dealer. Finally, the question is whether the results of this study can be generalized to other industries and markets. The most important finding of our research is that the dealer only ads marginal value to brand retention in a market dominated by brands (Sullivan 1998) and characterized by a distribution

structure in which dealers primarily sell a single brand. Dealers in other markets often sell multiple brands. If the contribution of dealers to brand retention is already marginal in a market with a selective and exclusive dealership structure, one might certainly question the contribution of dealers selling multiple brands. We believe that this is an important question for future research. Another important issue for future research on the impact of dealer value is that there might be asymmetric effects. When things are going well and there are no severe problems with the car, the dealer impact on brand retention is rather limited. However, once a source of dissatisfaction arises, it is plausible that a dealer takes a more prominent role, regardless of the brand type. Future research might address this issue by incorporating a moderating effect of recent critical car experiences.

Table 1
Sample Characteristics (n=970)

Sex:		Age:		Level of Education:	
- Male	55.8%	- 18-29	3.9%	- Academic education	37.8%
- Female	44.2%	- 30-39	14.6%	- Vocational education	27.3%
		- 40-49	20.8%	- Secondary school	29.9%
		- 50-59	29.7%	- Primary school	5.0%
		- 60-70	20.5%		
		- >70	10.5%		

Table 2
Results Confirmatory Factor Analysis Brand Variables (n=970)

	SE	t-value	Average extracted variance	Composite reliability	Coefficient alpha
Intrinsic quality brand:					
- BIQ-1	0.86	26.97	0.63	0.84	0.82
- BIQ-2	0.75	22.61			
- BIQ-3	0.77	23.45			
Extrinsic quality brand:					
- BEQ-1	0.72	21.48	0.45	0.88	0.88
- BEQ-2	0.69	20.45			
- BEQ-3	0.59	16.76			
- BEQ-4	0.66	19.42			
- BEQ-5	0.66	19.18			
- BEQ-6	0.75	22.76			
- BEQ-7	0.69	20.42			
- BEQ-8	0.66	19.09			
- BEQ-9	0.60	16.99			
Brand payment equity:					
- BPE-1	0.58	13.39	0.48	0.74	0.71
- BPE-2	0.66	18.12			
- BPE-3	0.81	22.68			
Brand trust:					
- BT-1	0.83	18.02	0.52	0.71	n.a.
- BT-2	0.60	10.12			
Brand equity:					
- BE-1	0.68	18.69	0.46	0.74	0.70
- BE-2	0.74	20.61			
- BE-3	0.61	13.37			
Brand switching costs:					
- BSC-1	0.90	11.07	0.66	0.79	n.a.
- BSC-2	0.71	10.41			

Fit:
χ^2/df= 3.02; GFI=0.93; AGFI=0.91; NFI=0.91; NNFI=0.92; CFI=0.94; IFI=0.94; RMSEA=0.054

Table 3
Results Confirmatory Factor Analysis Dealer Variables (n=970)

	SE	t-value	Average extracted variance	Composite reliability	Coefficient alpha
Intrinsic quality dealer:					
- DIQ-1	0.77	19.16	0.68	0.89	0.88
- DIQ-2	0.78	19.57			
- DIQ-3	0.86	22.57			
- DIQ-4	0.88	23.59			
Extrinsic quality dealer:					
- DEQ-1	0.73	18.08	0.62	0.92	0.92
- DEQ-2	0.77	19.62			
- DEQ-3	0.80	20.60			
- DEQ-4	0.81	21.32			
- DEQ-5	0.76	19.25			
- DEQ-6	0.83	21.80			
- DEQ-7	0.81	20.87			
Dealer payment equity:					
- DPE-1	0.68	16.08	0.53	0.71	0.79
- DPE-2	0.61	13.74			
- DPE-3	0.85	22.15			
- DPE-4	0.76	18.46			
Dealer trust:					
- DT-1	0.85	17.69	0.52	0.71	n.a.
- DT-2	0.57	10.25			
Dealer switching costs:					
- DSC-1	0.69	18.62	0.63	0.81	n.a.
- DSC-2	0.89	23.15			

Fit:
χ^2/df= 3.42; GFI=0.89; AGFI=0.87; NFI=0.91; NNFI=0.92; CFI=0.94; IFI=0.94; RMSEA=0.076

Table 4

Correlation Matrix **(n=970)**

	Mean	S.D.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Intrinsic quality brand	4.23	0.73	1.00										
2. Extrinsic quality brand	4.14	0.52	0.54	1.00									
3. Brand payment equity	4.00	0.77	0.41	0.31	1.00								
4. Brand trust	4.21	0.87	0.46	0.33	0.43	1.00							
5. Brand equity	3.97	0.70	0.39	0.47	0.45	0.42	1.00						
6. Brand switching costs	2.46	1.35	0.15	0.13	0.13	0.06	0.20	1.00					
7. Intrinsic quality dealer	3.95	0.75	0.32	0.35	0.30	0.24	0.30	0.10	1.00				
8. Extrinsic quality dealer	4.07	0.77	0.44	0.36	0.35	0.37	0.33	0.14	0.57	1.00			
9. Dealer payment equity	3.64	0.86	0.36	0.30	0.44	0.37	0.36	0.18	0.43	0.62	1.00		
10. Dealer trust	3.95	1.02	0.29	0.23	0.27	0.38	0.23	0.09	0.35	0.61	0.54	1.00	
11. Dealer switching costs	2.30	1.32	0.10	0.10	0.12	0.07	0.20	0.71	0.17	0.15	0.21	0.09	1.00

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Dealer Retention (Eq. 9)			Brand Retention (Eq. 10)		
Variable	*Coefficient*	*Estimate*	*Variable*	*Coefficient*	*Estimate*
Constant	β_0	-2.54 [c]	Constant	θ_0	-5.97 [a]
		(1.46)			(0.87)
DIQ*DPRB	β_{1p}	-3.18 [b]	BIQ	θ_1	-0.15
		(1.61)			(0.14)
DIQ*DVOB	β_{1v}	0.18	BEQ	θ_2	0.59 [a]
		(0.22)			(0.20)
DIQ*DECB	β_{1e}	0.30	BPE	θ_2	0.26 [b]
		(0.34)			(0.12)
DEQ*DPRB	β_{2p}	3.17 [c]	BE	θ_3	0.23 [a]
		(1.90)			(0.14)
DEQ*DVOB	β_{2v}	0.18	BT	θ_4	0.43 [a]
		(0.22)			(0.11)
DEQ*DECB	β_{2e}	-0.97 [a]	BSC	θ_5	0.21 [a]
		(1.71)			(0.06)
DPE*DPRB	β_{3p}	-1.14 [c]	BPT	θ_6	0.58 [a]
		(0.65)			(0.18)
DPE*DVOB	β_{3v}	0.34 [c]	DPRB	θ_7	0.18
		(0.18)			(0.81)
DPE*DECB	β_{3e}	0.90 [b]	DVOB	θ_8	-0.41
		(0.45)			(0.52)
DT	β_4	0.64 [a]	DV*DPRB	τ_{0p}	-0.49
		(0.14)			(0.31)
DSC	β_5	0.16 [b]	DV*DVOB	τ_{0v}	0.36 [b]
		(0.09)			(0.15)
DPT	β_6	0.46 [b]	DV*DECB	τ_{0e}	0.16
		(0.23)			(0.29)
DPRB	β_7	5.25			
		(3.61)			
DVOB	β_8	-0.98			
		(1.71)			

Model Statistics:
Log Likelihood = -757.08; AIC = 1.70

Notes:
-Standard errors in parentheses below coefficient
[a] $p<0.01$; [b] $p<0.05$; [c] $p<0.10$

Table 6:
Summary of Hypotheses Testing

Hypothesis	Description	Result
H_1	The positive effect of dealer value on brand retention is larger for volume brands than for prestige brands and economy brands.	Partial support: Contribution of dealer for volume brands is larger than contribution of dealer for prestige brands.
H_2	The positive effect of intrinsic dealer quality on dealer retention is (a) largest for economy brands and (b) smallest for prestige brands.	No support for H_{3a}. Support for H_{3b}.
H_3	The positive effect of extrinsic dealer quality on dealer retention is (a) largest for prestige brands and (b) smallest for economy brands.	Support for H_{4a} on 0.06 significance level. Support for H_{4b}.
H_4	The positive effect of dealer payment equity on dealer retention is (a) largest for economy brands and (b) smallest for prestige brands.	No support for H_{5a}. Support for H_{5b}.

```
Dealer-related
variables:

- Intrinsic quality
- Extrinsic quality
- Payment equity
- Trust
- Switching costs
- Prior ties
```

```
Brand type:
- Prestige
- Volume
- Economy
```

```
Brand-related
variables:

- Intrinsic quality
- Extrinsic quality
- Payment equity
- Brand equity
- Trust
- Switching costs
- Prior ties
```

Dealer value

Brand retention

Brand value

Dealer retention

──── Observed variables
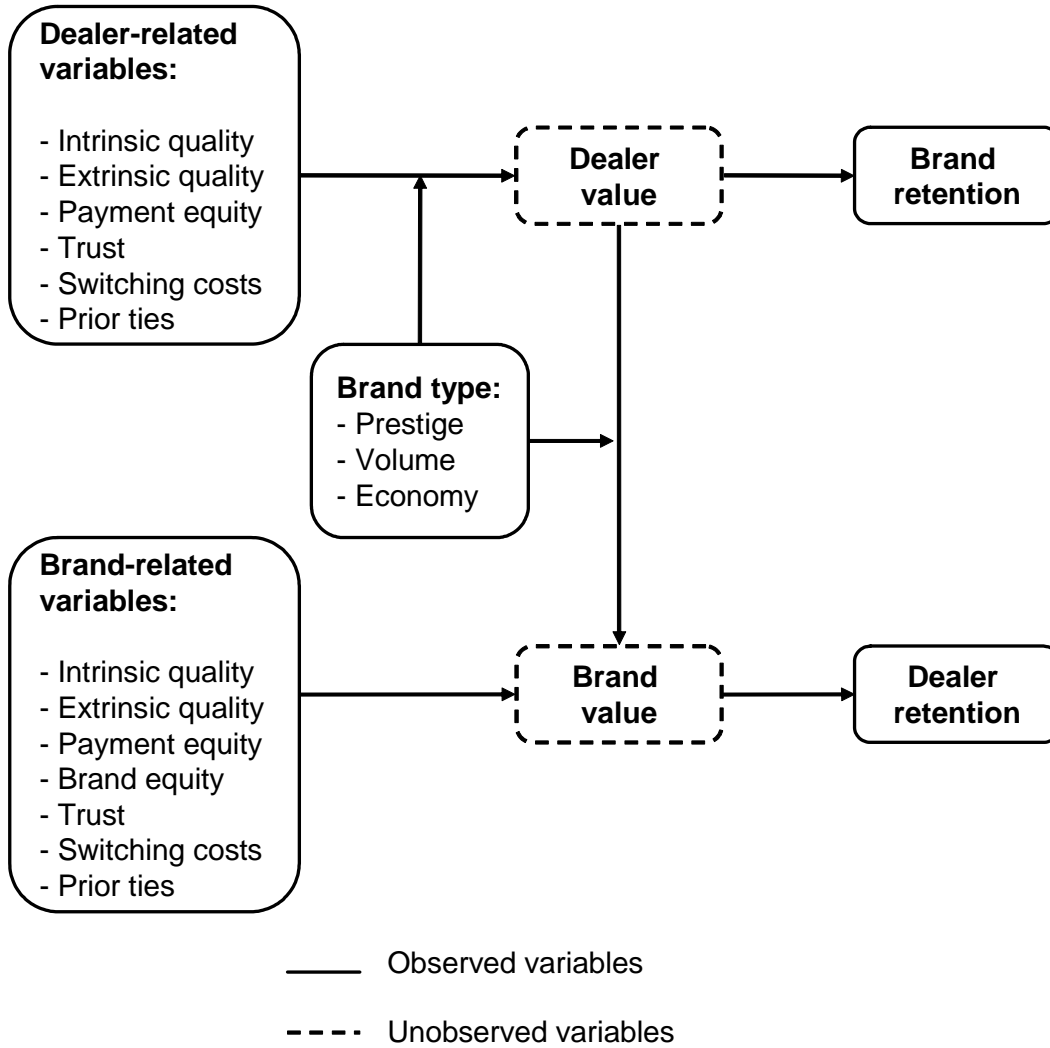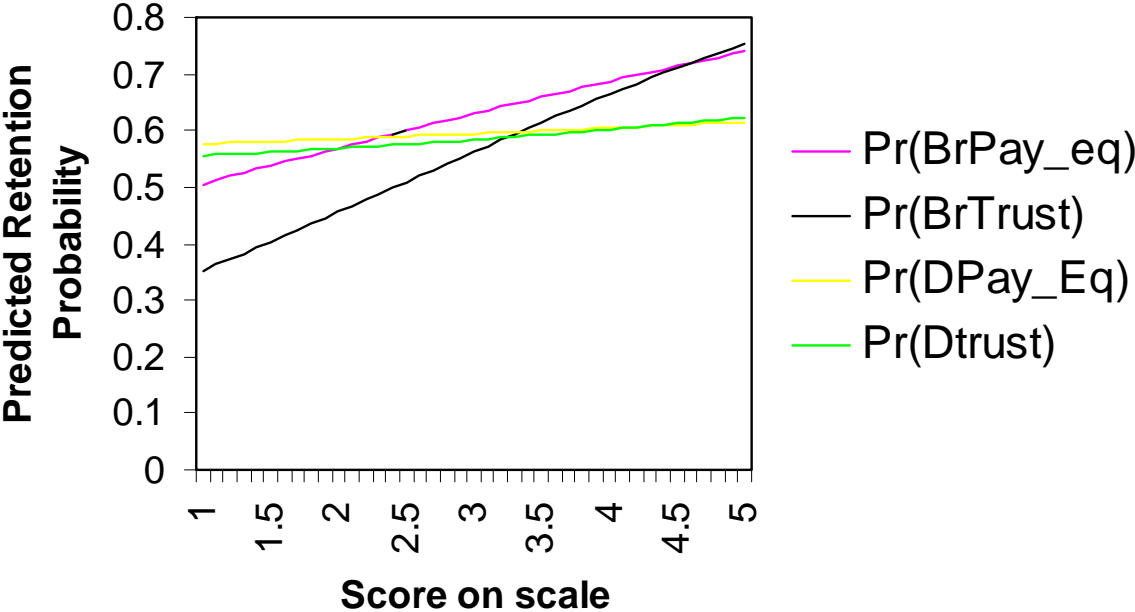
- - - - Unobserved variables

Figure 2:

Simulation Effect of Brand Payment Equity and Brand Trust, Dealer Payment Equity, Dealer Trust on Brand Retention Probability

APPENDIX A

Intrinsic brand quality (anchored 1= very poor and 5= very good):	
- BIQ-1	Quality
- BIQ-2	Durability
- BIQ-3	Reliability
Extrinsic brand quality (anchored 1= very poor and 5= very good):	
- BEQ-1	Functionality
- BEQ-2	Engine power
- BEQ-3	Comfort
- BEQ-4	Ease of use
- BEQ-5	Space
- BEQ-6	Safety
- BEQ-7	Design
- BEQ-8	Emanation
- BEQ-9	Model variety
- BEQ-10	Trimmings**
- BEQ-11	Interior*
Brand payment equity (anchored 1= very strongly disagree and 5= very strongly agree):	
- BPE-1	My [brand] was reasonably priced
- BPE-2	The quality/price ratio of [brand] is good
- BPE-3	[brand] gives me my money's worth
- BPE-4	The price of my [brand] was too high**
Brand equity (anchored 1= very strongly disagree and 5= very strongly agree):	
- BE-1	[brand] is a strong brand
- BE-2	[brand] is a well-known brand
- BE-3	[brand] is an attractive brand**
- BE-4	[brand] is a unique brand
Brand trust (anchored 1= very strongly disagree and 5= very strongly agree):	
- BT-1	I trust [brand]
- BT-2	I rely on [brand]
Brand switching cost (anchored 1= very strongly disagree and 5= very strongly agree):	
- BSC-1	It is difficult to switch between car brands
- BSC-2	It is troublesome to switch between car brands

Note:
* Deleted during initial item purification
** Deleted during further item purification

Intrinsic dealer quality (anchored 1= very poor and 5= very good):

- DIQ-1	Standing by agreements
- DIQ-2	Quality of maintenance
- DIQ-3	Quality of repairs
- DIQ-4	Quality of explanations with repairs
- DIQ-5	Quality of explanations with maintenance
- DIQ-6	Quality of communications
- DIQ-7	Ability to do things first time right
- DIQ-8	Craftsmanship*
- DIQ-9	Willingness to help you*
- DIQ-10	Speed with which you are being served**
- DIQ-11	Personal attention that you receive*

Extrinsic dealer quality (anchored 1= very poor and 5= very good):

- DEQ-1	Lay-out of the workshop
- DEQ-2	Atmosphere in the workshop
- DEQ-3	Lay-out of the showroom
- DEQ-4	Emanation of the showroom
- DEQ-5	Atmosphere in the showroom*

Dealer payment equity (anchored 1= very strongly disagree and 5= very strongly agree):

- DPE-1	Repairs at [dealer] are costly
- DPE-2	[dealer] gave me a good trade-in value for my old car
- DPE-3	[dealer] gives me my money's worth
- DPE-4	The quality/price ratio with [dealer] is good
- DPE-5	I think I paid too much for my [brand] at [dealer]*
- DPE-6	[dealer] got more out of the deal than I did**
- DPE-7	The maintenance costs at [dealer] are too high*

Dealer trust (anchored 1= very strongly disagree and 5= very strongly agree):

- DT-1	I trust [dealer]
- DT-2	I rely on [dealer]

Dealer switching costs (anchored 1= very strongly disagree and 5= very strongly agree):

- DSC-1	It is difficult to switch between dealers
- DSC-2	It is troublesome to switch between dealers

Note:

    *   Deleted during initial item purification

    **   Deleted during further item purification

Appendix B

	Economy brand	Volume brand	Prestige brand	Total	# of interjudge agreements
- Alfa Romeo	2	14	**46**	62	1046
- Audi	2	8	**52**	62	1337
- BMW	0	4	**58**	62	1680
- Chrysler	1	22	**38**	62	720
- Citroen	7	**48**	7	62	1116
- Daewoo	**39**	20	3	62	749
- Daihatsu	**46**	12	4	62	1032
- Fait	23	**38**	1	62	715
- Ford	9	**50**	4	62	1205
- Honda	10	**41**	11	62	834
- Hyundai	**40**	20	2	62	763
- Kia	**41**	17	5	62	803
- Lancia	16	12	34	62	550
- Mazda	11	**40**	10	62	787
- Mercedes	3	1	**58**	62	1644
- Mitsubishi	16	**44**	2	62	947
- Nissan	23	**37**	2	62	651
- Opel	10	**40**	11	62	787
- Peugeot	2	**48**	11	62	1145
- Renault	7	**48**	6	62	1145
- Rover	2	14	**46**	62	1034
- Seat	31	26	5	62	465
- Skoda	**46**	11	5	62	1032
- Subaru	**34**	19	8	62	577
- Suzuki	**47**	13	2	62	1058
- Toyota	6	**45**	11	62	980
- Volkswagen	1	**37**	24	62	667
- Volvo	1	10	**51**	62	1280
- Total:	**477**	**740**	**519**	**1736**	**26748**

Note:
- Proportion of interjudge agreement = 26748 / ((28*62*61)/2)=0.51
- PRL-reliability = 0.99 (Rust and Cooil 1994, p.8)

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