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Retention of dissatisfied B-to-B services customers: an empirical test of the mediating effects of dependence and calculative commitment

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Abstract

The literature argues that the alternative outcomes of a customer either ending or continuing a struggling relationship not only depend on the determinant factors or switching barriers, but also on the essential nature of the relationship. This paper adapts a broad social exchange framework to business-to-business (B-to-B) exchange relationships, and explains "unjustified persistence" or the tendency to remain involved in a B-to-B relationship that is dissatisfying overall. Specifically, the paper extends the knowledge on the mediating factors that influence the likelihood of dissatisfied B-to-B customers who have complained, and considered switching, to continue purchasing from their existing service provider. Data was collected online from 376 businesses using a key informant approach, and analysed using structural equation modelling software AMOS 7.0 with maximumlikelihood (ML) estimation. The findings support all the hypothesised relationships and imply that the potential loss of special privileges, if the customer were to switch from their current service provider, are related to a feeling of dependence on, and calculative commitment to, the service provider. The mediation mechanisms also imply that sunk costs are more related to dependence or calculative commitment than repurchase intentions, and that dependence or calculative commitment continues to play a role in generating customer outcomes.

Keywords

services, b, commitment, dependence, effects, mediating, dissatisfied, test, retention, empirical, customers, calculative

Disciplines

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Retention of Dissatisfied B-to-B Services Customers: An Empirical Test of the Mediating Effects of Dependence and Calculative Commitment

Background to the Research

The strategic importance of customer retention and the costs associated with customer switching behaviour have resulted in researchers devoting considerable attention to investigating the switching and/or staying behaviour of customers in the business-to-consumer (B-to-C) services sector (eg., Keaveney 1995; Hocutt 1998; Roos 1999, Coulter and Ligas 2000; Colgate and Lang 2001; Jones, Mothersbaugh and Beatty 2002; Burnham, Frels and Mahajan 2003; Tuominen and Kettunen 2003; Patterson 2004; Roos, Edvardsson and Gustafsson 2004; Akerlund 2005; Bansal, Taylor and James 2005; Colgate *et al.* 2007; Jones *et al.* 2007).

While the recognition of buyer behaviour stability has resulted in a number of important studies, at least three important concerns with prior research limit the understanding of switching and/or staying behaviour. Firstly, limited attention has been devoted to investigating a range of important deterrents to discontinuing the relationship in a single model in a business-to-business (B-to-B) service context. Secondly, studies that have investigated ‘struggling’ B-to-B relationships were qualitative in nature and investigated a particular sector or industry (Young and Denize 1995; Colgate and Norris 2001; Tahtinen and Vaaland 2006). Thirdly, no research has hitherto investigated mediating factors under the condition of dissatisfaction in the B-to-B services sector. The literature argues that the alternative outcomes of a customer either ending or continuing a struggling relationship not only depend on the determinant factors or switching barriers, but also on the essential nature of the relationship (Tuominen and Kettunen 2003). Examining the direct, indirect and mediating relationships between the determinant factors and behavioural outcomes using a broad social exchange framework, can explain the outcome of struggling relationships; that is, “unjustified persistence” or the tendency to remain involved in a relationship that is dissatisfying overall (Rusbult *et al.* 2006, p.616).

Adapting the social exchange framework to business exchange relationships, the constructs of attractiveness of alternatives, investments at the inter-organisational and at the interpersonal level namely switching costs and interpersonal relationships respectively, three dimensions of justice (complaint-handling/service recovery) and satisfaction with justice (satisfaction with complaint-handling/service recovery) hold most promise in explaining dependence and calculative commitment (Rusbult *et al.* 2006). These constructs influence the likelihood of remaining in a present relationship (repurchase intentions) by serving as deterrents to discontinuing the relationship. Owing to page restrictions, this paper presents only the investigation of the mediating relationships between the determinant factors and a behavioural outcome. The objective of this paper therefore is to extend the knowledge on the mediating factors that influence the likelihood of dissatisfied B-to-B customers who have complained, and considered switching, to continue purchasing from their existing service provider. However, the mediating hypotheses proposed and analysed in this paper are investigated within a broad research problem.

The paper contributes to the literature by providing a “process explanation” (Joshi and Stump 1999, p.355) that connects determinant factors to repurchase intentions; that is, the study identifies and demonstrates the effect of mediating variables, namely dependence and

calculative commitment. The remainder of the paper is organised as follows. First, the mediating hypotheses of the study are described based on relevant literature. Then, the methodology that guided the research effort is discussed. Next, the analysis used to test the hypothesis is presented, followed by a discussion of the findings.

Constructs and Hypothesised Relationships

The constructs relevant to the investigation of mediating factors that influence the likelihood of dissatisfied B-to-B customers who have complained, and considered switching, to continue purchasing from their existing service provider are briefly defined as follows. Benefit-loss costs represent the possible loss of economic benefits when a customer leaves their existing service provider and switches to a new service provider (Burnham, Frels and Mahajan 2003). Sunk costs represent the non-recoupable time and effort invested in establishing and maintaining an exchange relationship (Jones, Mothersbaugh and Beatty 2002). Dependence is defined as the extent to which a firm ‘needs’ a given relationship, or relies uniquely on the relationship for attaining desired outcomes” (Rusbult, Martz and Agnew 1998, p.358). Calculative commitment represents “the state of attachment to a partner, cognitively experienced as a realisation of the benefits that would be sacrificed and the losses that would be incurred if the relationship were to end” (Gilliland and Bello 2002, p.28). Repurchase intentions represents a customer’s judgment about again buying a designated service from the same service provider, taking into account the customer’s current situation (Hellier *et al.* 2003).

Theoretical justification for the mediating role of dependence or calculative commitment can be attributed to two well established theories in personal relationships. The Investment Model (Rusbult, Martz and Agnew 1998), argues that (i) “dependence is a relationship state [that describes] the additive effects of feeling satisfied, having high investments and possessing poor alternatives” (p.360), (ii) “feelings of commitment emerge as a consequence of increasing dependence” (p.359) and (iii) “commitment...partially or wholly media[tes] the effects of satisfaction, alternatives, and investments on decisions to remain in versus end a relationship” (p.360). Additionally, the Dependence Model of Breakups (Drigotas and Rusbult 1992) argues (i) a party may remain in a relationship “that is not terribly satisfying because of high dependence on that relationship—dissatisfied it is, the relationship may nevertheless fulfil important needs that cannot be gratified in alternate relationships” (p.62), and (ii) dependence on a relationship “is the key to understanding decisions to remain in or voluntarily end a relationship” (p.62). Thus, these two models provide a basis for extending mediating hypotheses between investments, attractiveness of alternatives and repurchase intentions.

Regarding investments, the literature has found a significant association between switching costs and switching intentions or repurchase intentions, in a B-to-C services context (Jones, Mothersbaugh and Beatty 2002; Burnham, Frels and Mahajan 2003; Patterson and Smith 2003; Bansal, Taylor and James 2005) and in a B-to-B context (Ping 1993; Heide and Weiss 1995; Wathne, Biong and Heide 2001; Lam *et al.* 2004; Liu, Leach and Bernhardt 2005). Within switching costs, the dimension of benefit-loss costs has consistently been found to have a strong impact on behavioural/repurchase intentions, although the relationship between benefit-loss costs and repurchase intentions has only been investigated in a B-to-C services context (Jones, Mothersbaugh and Beatty 2002; Patterson and Smith 2003). Jones, Mothersbaugh and Beatty (2002) argued that the “costs of lost performance (benefit-loss costs) derive from service benefits accrued from a given service provider over time” (p.443),

and therefore, expected benefit-loss costs to be strongly associated with repurchase intentions than other switching costs, and found support to their hypothesis. Thus, given that the direct effect of benefit-loss costs on repurchase intentions are powerful, although in a B-to-C services context, it seems unlikely that dependence or calculative commitment will completely mediate the relationship between benefit-loss costs and repurchase intentions in a B-to-B services context either.

There appears to be no known studies that have proposed mediating hypotheses between switching costs and repurchase intentions with the exception of Bansal, Irving and Taylor (2004), who found that calculative commitment partially mediated the relationship between switching costs and switching intentions in a B-to-C services context. This leads to the following hypotheses:

- H1:** As benefit-loss costs increase, repurchase intentions will increase.
- H2:** The relationship between benefit-loss costs and repurchase intentions is partially mediated by dependence.
- H3:** The relationship between benefit-loss costs and repurchase intentions is partially mediated by calculative commitment.

According to the Investment Model, commitment partially or wholly mediates the effects of investments on decisions to remain. Rusbult, Martz and Agnew (1998) operationalised investments as the perceived magnitude of the relationship assets that would be lost if the relationship were to be terminated and involves sunk opportunity costs such as time and effort. Therefore, according to the Investment Model, commitment partially or wholly mediates the effects of sunk costs on decision to remain or leave. There is evidence in the consumer services marketing literature on the direct effect of sunk costs on repurchase intentions in a B-to-C services context (Jones, Mothersbaugh and Beatty 2002), although this effect was not found to be significant in a B-to-B goods context (Ping 1993). Additionally, if investments in assets that are specific to a particular environment are considered important, and if losing those investments would have little value outside a particular relationship, then this should increase a customer's dependence and a customer's calculative commitment respectively, and these in turn, should increase the customer's repurchase intentions. Since a strong effect of sunk costs on repurchase intentions has not been demonstrated in a marketing context, the relationship between sunk costs and repurchase intentions could be argued to be completely mediated by either dependence or calculative commitment. This reasoning leads to the following hypotheses:

- H4:** The relationship between sunk costs and repurchase intentions is completely mediated by dependence.
- H5:** The relationship between sunk costs and repurchase intentions is completely mediated by calculative commitment.

Regarding attractiveness of alternatives and repurchase intentions, mixed results are evident across B-to-C studies (Jones, Mothersbaugh and Beatty 2000; Patterson and Smith 2003; Bansal, Irving and Taylor 2004; Bansal, Taylor and James 2005). In a B-to-B context, Ping (1993) found no significant association between alternative attractiveness and loyalty. Since mediating effects are proposed when there is evidence of a relatively strong direct effect between a predictor variable and an outcome variable (Baron and Kenny 1986), a direct and therefore, a mediating, effect hypothesis between the attractiveness of alternatives and repurchase intentions is not proposed.

Methodology

Recruitment e-mails were sent to 2,083 prospective participants who were identified from a database of Australian business managers. A key informant approach was used to collect data from responding organisations, and informants were selected based upon the following three criteria: informant's knowledge of decisions relating to purchase of the service for their company (Campbell 1955); informant's extent of participation in influencing, deciding or purchasing the service for their company (Phillips 1981); and the extent to which the views of the informant were representative of the views of the group responsible for buying the service described in the survey (Patterson, Johnson and Spreng 1997). The use of screening and key informant criteria, and outlier analysis resulted in the retention of 376 cases. The range of services that the key informants chose to discuss represented a variety of industries including information and communication technology services, banking and insurance services, facility services, professional services, and other services. Responding organisations represented the following businesses: manufacturing, construction, internet, telecommunication, financial, education, hospitality, professional, information technology, and other services. A range of company sizes were included in the sample. Participants viewed the service described in the survey as important to their overall profitability and productivity (mean = 5.77 on a 7-point scale anchored by "not at all important" and "extremely important"; s.d = 1.31); reported moderate to high overall dissatisfaction (mean = 4.74 on a 7-point scale anchored by "dissatisfaction is extremely low" and "dissatisfaction is extremely high"; s.d = 1.25), and rated the severity of the service problems they were facing as major (mean = 4.94 on a 7-point scale anchored by "minor" and "major"; s.d = 1.16).

Results

A two-step approach was selected for the measurement model and structural model (Anderson and Gerbing 1988) using AMOS 7.0 with maximum-likelihood (ML) estimation. Reliability tests were conducted using squared multiple correlations (R^2) for each measurement item. The R^2 of all items was greater than 0.61. The construct reliability (C.R.) and variance extracted (V.E.) exceeded the minimum acceptable values, and are listed in Table 1. The values of only those latent variables relevant to this paper are listed. As evidence of convergent validity, the critical ratio of every measurement item exceeded 1.96 (values varied between 16.3 and 24.0) and each measurement item loaded significantly ($>.78$) on its respective construct. Further, the variance-extracted test (Fornell and Larcker 1981) indicated that each latent variable pair exhibited discriminant validity.

Table 1: Reliability Test Values

Latent Variable	C.R.	V.E.
Benefit-Loss Costs (2 items)	0.80	0.67
Sunk Costs (2 items)	0.90	0.81
Dependence (3 items)	0.92	0.80
Calculative Commitment (2 items)	0.88	0.78
Repurchase Intentions (3 items)	0.89	0.74

Both the chi-square and alternative fit indices were employed to assess the “goodness of fit” of the model. The resulting statistics of a full measurement model that consisted of all the latent variables relevant to the research problem were: $\chi^2 = 1019.633$; $df = 611$; $p = .000$; Bollen-Stine bootstrap $p = .03$; $\chi^2/df = 1.67$; GFI = .88; AGFI = .85; CFI = .96; TLI = .96; IFI = .96; NFI = .91; RFI = .90; RMSEA = .04; SRMR = .03. None of the standardised residual values exceeded the cut-off point of 2.58. Taking into account (a) the statistical significance of all parameter estimates, (b) the substantially good fit of the model, with particular reference to the CFI (.96), TLI (.96), IFI (.96), SRMR (.03) and RMSEA (.04), and (c) the lack of any substantial evidence of model misfit, it is concluded that the full measurement model was a good fit with the observed data.

To test the mediation hypotheses, two structural models were estimated: first, a full model that consisted of the relationships between the 14 latent variables, and second, a mediation model with paths leading only from benefit-loss costs to repurchase intentions, and sunk costs to repurchase intentions. The mediation model was estimated, and controlled for the following factors: attractiveness of alternatives, evaluation costs, learning costs, economic-risk costs, interpersonal relationships, distributive justice, procedural justice and interactional justice. The full model produced the following statistics: $\chi^2 = 132.978$; $df = 85$; $p = .001$; Bollen-Stine bootstrap $p = .336$; $\chi^2/df = 1.56$; GFI = .96; AGFI = .93; CFI = .98; TLI = .97; IFI = .98; NFI = .96; RFI = .92; RMSEA = .04; SRMR = .04. The path from benefit-loss costs to repurchase intentions was significant ($t = 4.552$; $\beta = 0.288$; $p = .000$), thus supporting hypothesis H1. The mediation model produced the following statistics: $\chi^2 = 92.932$; $df = 38$; $p = .000$; Bollen-Stine bootstrap $p = .034$; $\chi^2/df = 2.45$; GFI = .97; AGFI = .91; CFI = .97; TLI = .94; IFI = .97; NFI = .96; RFI = .90; RMSEA = .06; SRMR = .04. The mediation hypotheses were tested using a four-step approach recommended by Baron and Kenny (1986). The results support the four mediating hypotheses (H2, H3, H4 and H5). The mediating effects are illustrated in Figures 1, 2, 3 and 4 in the Appendix.

Discussion

Support for all the hypothesised relationships imply that the potential loss of special privileges, if the customer were to switch from their current service provider, are related to a feeling of dependence on the service provider and it is this degree of dependence on the relationship that continues to play a role in generating customer outcomes. Furthermore, the potential loss of special privileges also results in calculative commitment, which then influences a customer to intend to continue repurchasing services. The mediation mechanisms also imply that sunk costs are more related to dependence or calculative commitment than repurchase intentions, and that dependence or calculative commitment continues to play a role in generating customer outcomes.

A limitation of the study is that a judgement sample of Australian business managers was recruited. However, the sampling frame ensured a good coverage of the broader population of customer firms in different industries and company sizes, evidenced by the broad range of businesses that were represented by the key informants in the current research. Furthermore, the study employed multiple criteria to establish suitability of respondents to answer the survey regarding their firms' dissatisfactory relationship with the present service providers. The model needs to be validated with another data set in order to enhance its generalisability.

Appendix

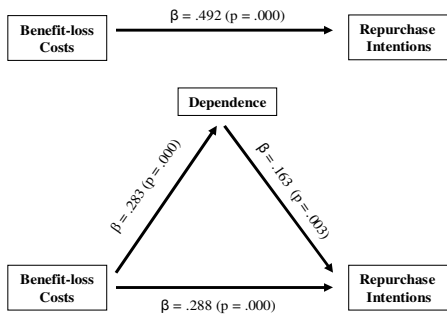


Figure 1 Partially Mediating Effect of Dependence (H2)

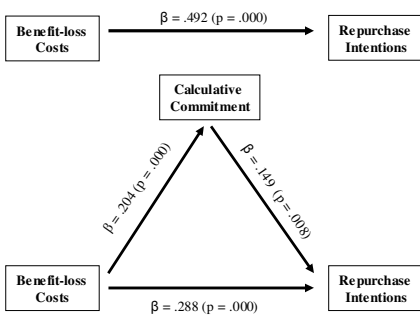


Figure 2 Partially Mediating Effect of Calculative Commitment (H3)

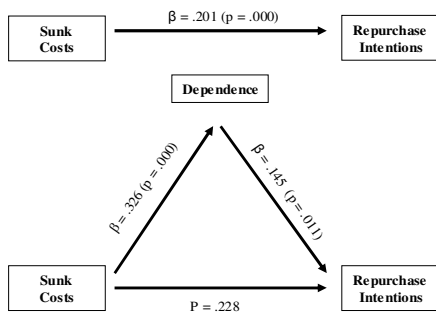


Figure 3 Completely Mediating Effect of Dependence (H4)

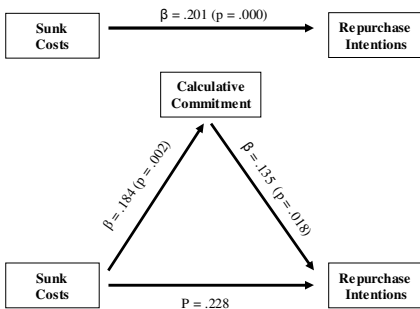


Figure 4 Completely Mediating Effect of Calculative Commitment (H5)

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