

Impact of Purchased Business Services on Downstream Supply Chain Members

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Abstract

Purpose of the paper and literature addressed

Supply chain management and business networks have gained increased attention in business services settings. However, still little is known on the impact of purchased business services along the supply chain and particularly on its influence on downstream supply chain members. The purpose of this research is to investigate the impact of external purchased services by a service provider on the satisfaction of downstream supply chain members, i.e. end-users. The focus is on transaction-specific satisfaction as it provides in-depth information on the satisfaction elements responsible for the impact of external purchased services along the supply chain.

Research method

To test the hypotheses, one business service provider purchasing a service from an external supplier is selected. The external purchased services in our research are security services (facility services). Data are collected by sending a web survey to the business service provider's customers. PLS is used to analyze the data as transaction-specific satisfaction is a formative construct caused by satisfaction elements.

Research findings

PLS analyses indicate that the elements determining satisfaction with the external supplier and those determining satisfaction with the business service provider differ. The results also show that transaction-specific satisfaction of end-users with the external supplier's service is positively related to transaction-specific satisfaction of end-users with the service provider's service. Furthermore, the strength of that relationship is influenced by the importance attached to the external supplier's service by the end-users.

Main contribution

A first contribution indicates that the position of the customer in the supply chain influences how the service delivery is evaluated. Secondly, the relevance of the service supply chain in business services settings and the effect of external purchased services on downstream supply chain members are confirmed in this research study. The relationship between external supplier and provider and the one between provider and end-user are interconnected. Importance attached to the external supplier's service by the end-user has an impact on the strength of that relationship interconnectedness. Future research is needed to extend the findings of this study to other business services settings.

Keywords: Service Supply Chain, Transaction-specific satisfaction, Purchased Business Services

Introduction

Supply Chain Management (SCM) has become an important way of enhancing competitive advantage and organizational performance in the domestic and global market place (Li et al. 2006). The increased attention paid to SCM in literature is an illustration of this effect (Zsidisin, Jun, Adams 2000). In services, SCM also gains in importance because of evolutions such as outsourcing (Li et al 2006). These extended supply chains have significant service components that need to be explored further (Roth, Menor 2003a). While the service supply chain has been recognized as an intriguing research area (Roth, Menor 2003b), research in SCM has been centered on manufacturing industries (Zsidisin, Jun, Adams 2000) and only few service industries have been investigated in SCM research (Ellram, Tate, Billington 2004; Mabert, Venkatraman 1998).

SCM has been defined as the integration of business processes from end customers through original suppliers that provides products, services and information that add value for customers (Cooper, Lambert, Pagh 1997, p. 1). With the growing importance of the service sector in our economies, the notion of service supply chain has obtained a more prominent role in contemporary operations management research (Akkermans, Vos 2003). SCM in services deals rather with customer-supplier dyadic relationships than with the unidirectional movement of physical goods (Fitzsimmons, Fitzsimmons 2006; Sampson 2000). To understand the nature of these interfirm relationships, greater attention for the larger networks in which relationships exist is required (Wathne, Heide 2004). However, still little is known on the impact of purchased business services along the supply chain and particularly on the influence on downstream supply chain members and their satisfaction. The importance of the supply chain vision in purchasing business services has been stressed by Stanley and Wisner (2001). In their research study, they investigated the link between external suppliers, internal customers and the quality delivered to external customers (Stanley, Wisner 2001). However, as suggested by Dean and Kiu (2002), the impact of purchased business services on end-users should be further explored.

The service supply chain indicates that service providers have relationships with other service firms that contribute to satisfying the customer (Fitzsimmons, Fitzsimmons 2006), as illustrated in Figure 1. The dependence of each firm's performance on the activities and performance of other firms has also been stressed by the Industrial Marketing and Purchasing (IMP) Group (e.g. Batt, Purchase, 2004; Wilkinson, Young, 2002). As such, research studies should move from dyadic business relationships to triads and business networks (Anderson, Hakansson, Johanson 1994). The purpose of this study is to investigate the impact of business services delivered to a service provider on the satisfaction of downstream supply chain members, i.e. the service provider's customers or end-users. This research study is set in a business services setting with end-users being firms, and not consumers, as service management research today should re-orientate itself towards business-to-business services (Johnston 2005). More specifically, we focus on the facility services setting, an important part of the business services sector (Lehtonen, Salonen 2005). Facility services can be distinguished from other business services by an essential characteristic: they are delivered on the premises of the buying firm, i.e. the service provider (Bröchner 2001 cited in Lehtonen, Salonen 2005), thus making interaction between the external supplier and the end-user more likely.

INSERT FIGURE 1 ABOUT HERE

First, as we want to investigate the impact of external purchased services on the satisfaction of downstream supply chain members, the satisfaction construct is discussed more in detail. Afterwards, hypotheses on the impact of external purchased services are developed. The research method used to test the hypotheses is presented next. Based on PLS analyses, the research findings are reported. Finally, the main contributions of the paper are discussed.

Transaction-specific satisfaction

In a business-to-business context, satisfaction can be defined as a positive affective state resulting from the appraisal of all aspects of a firm's working relationship with another firm (Geyskens,

Steenkamp, Kumar 1999). Previous research has indicated that satisfaction is related to loyalty (Lam et al. 2004), relationship continuity and enhancement (Selnes 1998), and other behavioural intentions (Bolton, Smith, Wagner 2003). In a buyer-supplier channel system, buyer satisfaction is determined by supplier performance (Yilmaz et al. 2004) and forms an important indicator to assess the strength of current relationships with business customers (Rossomme 2003). Two general conceptualizations of satisfaction exist in literature: transaction-specific satisfaction and overall satisfaction (Lam et al. 2004). Transaction-specific satisfaction relates to the customer's satisfaction with a discrete service encounter (Bitner, Hubert 1994, p. 76-77) and thus refers to a particular exchange between buyer and seller, or an episode (Hakansson 1982). Exchanges between two parties can lead to the build-up of long-term relations. Reactions to a particular exchange or episode are conditioned by the overall relationship existing between the two companies (Hakansson 1982). Overall satisfaction, the second general conceptualization of satisfaction, refers to the customer's overall satisfaction with the organization based on all encounters and experiences with that particular organization (Bitner, Hubert 1994, p. 76-77). The experiences gained in particular episodes aggregates to a total experience (Hakansson 1982). Previous research has indicated that transaction-specific satisfaction and overall satisfaction are perceived differently by customers and thus can be empirically distinguished from each other (Jones, Suh 2000).

In this research, we focus on transaction-specific satisfaction as this provides specific diagnostic information (Lam et al. 2004). Transaction-specific satisfaction depends on specific attributes of the service encounter and the related supplier performance (Shankar, Smith, Rangaswamy 2003). Thus, transaction-specific satisfaction provides more in-depth information on the satisfaction elements responsible for the impact of external purchased services along the supply chain. Previous research has included certain satisfaction elements, i.e. dimensions of customer satisfaction (Homburg, Rudolph 2001), to better measure the varying experiences and perceptions of different customers (Rossomme 2003). Relevant satisfaction elements of transaction-specific satisfaction in a business services setting are selected based on business, services and marketing literature. Especially the research of Homburg and Rudolph (2001), indicating a number of relevant satisfaction elements in a business manufacturing setting, is of interest here.

In services settings, reliability of the supplier plays a significant role: the majority of research studies confirm that reliability is the most critical aspect of service delivery (Zeithaml 2000). A service supplier is reliable if the promised performance is delivered dependably and accurately (Schneider, White 2004). According to Homburg and Rudolph (2001), reliability is also a facet of a satisfaction element in manufacturing processes. Next to reliability, other satisfaction elements will play a role. Because of the customer-supplier duality in service supply chains (Sampson 2000), a second satisfaction element consists of the supplier's accessibility and ability to contact the supplier. These are a necessity to make timely and accurate communication between supplier and customer possible. Another important satisfaction element in industrial marketing is complaint handling (Homburg, Rudolph 2001). A quick resolution to service failure is an important way to create satisfied and loyal customers (Fitzsimmons, Fitzsimmons 2006). The interaction with the supplier's field and internal staff also plays a significant role (Homburg, Rudolph 2001). Based on service profit chain and satisfaction mirror (Heskett 1997), the attitude and behaviour of frontline service employees can have a "spillover" effect on customers' evaluation of the service delivered. Consequently, the interaction between service provider's personnel and customers has received increasing attention. The interaction with supplier personnel consists of technical skills, or personnel's expertise and knowledge, and interpersonal skills, or direct contact with the customers (Westbrook, Peterson 1998). As such, based on business, services, and marketing literature, five satisfaction elements for transaction-specific satisfaction are incorporated in this study: reliability of the service supplier, accessibility and ability to contact the service supplier, complaint handling, supplier personnel's expertise and contact between supplier personnel and customer.

Impact of purchased business services

In general, business relationships are part of a network of relationships and thus interconnected (Ritter 2000): if firm A supplies firm B and firm B supplies firm C, then interaction in either of the two relationships affects the other, sometimes marginally but often substantially (Hakansson, Ford 2002). In the purchasing environment more emphasis has been placed on that interaction along the supply

chain (Stanley, Wisner 2001): decisions at one stage of the service supply chain can impact later (or earlier) stages of the chain (Sampson 2000). As in manufacturing processes, it is not good enough to be 'locally optimal' in a service supply chain; each element of the supply chain should take into account players up or down the chain (Sampson 2000). Following the "garbage in, garbage out" principle, effective management of external supplier quality is a critical element of quality management (Garvin 1987). The research of Stanley and Wisner (2001) indicates that external purchased supplies have an impact on the satisfaction of external customers, through internal service quality. As customers consider service providers responsible for the work of chosen suppliers (Sampson 2000), service providers are also judged on the performance of external suppliers. As such, the relationship between service provider and end-user is influenced by the relationship between supplier and service provider. Based on the typology of Ritter (2000), we can speak of an assistance effect: through the existence of the relationship between supplier and service provider, the relationship between service provider and end-user is supported. Consequently, we hypothesize that the service delivered by the external supplier will have a positive impact on end-user's satisfaction. We assume that the end-users' satisfaction with the service provider's service will be influenced by the end-users' satisfaction with the external supplier's service. Therefore, we propose:

H1: Transaction-specific satisfaction of end-users with the external supplier's service is positively related to transaction-specific satisfaction of end-users with the service provider's service.

Based on the firm's value net (Brandenburger, Nalebuff 1996), Ritter, Wilkinson, and Johnston (2004) state that relationships with suppliers can be an important source of competitive advantage when strategically valuable products or services are supplied. Other researchers also state that the criticality of or importance attached to an external purchased service should be considered (Fitzsimmons, Fitzsimmons 2006). Blumberg (1998) suggests that not only the importance of the service to the buying organization but also the importance attached to the service by end-users should be incorporated. The purchasing decision and external supplier's evaluation by the service provider should take into account whether or not end-users are affected by the outcome of the external supplier's service delivery (Blumberg 1998). Since considering a service as low or high in importance is a relative viewpoint (Fitzsimmons, Fitzsimmons 2006), the end-users' opinion on importance of external purchased service can differ. We hypothesize that if end-users consider the external supplier's service as high in importance, end-users' satisfaction with external supplier's service will have a stronger effect on end-users' satisfaction with service provider's service than when end-users consider that service as low in importance. Therefore, we propose:

H2: The positive relationship between transaction-specific satisfaction of end-user with the external supplier's service and with the service provider's service will be enhanced with increasing levels of importance attached by the end-user to the external purchased service (positive moderating effect).

The proposed hypotheses are illustrated in Figure 2.

INSERT FIGURE 2 ABOUT HERE

Research Method

Sample Selection and Data Collection

This research study is set in a business services setting with end-users being firms, and not consumers. Because of possible effect of business specific variables, we chose to limit our investigation to end-users of one service provider (Selnes 1998), consistent with prior research in customer satisfaction (Lam et al. 2004; Shankar, Smith, Rangaswamy 2003). To obtain our research goal, we selected a service provider that clearly communicates to its end-users that a certain facility service is delivered by an external supplier. Facility services cover a broad variety of services including domestic services such as security services (Lehtonen, Salonen 2005).

The chosen business service provider offers exhibition space to its business customers: the service delivered encompasses everything needed to organize an exhibition such as location, parking lots, cash points, administrative services etc. The delivered service also incorporates security services that are purchased from an external supplier. The exhibitors are considered the end-users of both the exhibition space provided and the external purchased security services (see Figure 1).

The data was collected by a web survey. The service provider gave us a database containing the email addresses of those exhibitors which had contributed to one or more exhibitions during the last quarter of 2003. During the first quarter of 2004, an invitation to fill out the questionnaire was sent using a personalized email to increase response rate. The survey was sent in two waves. Of the 1074 emails sent, 201 exhibitors filled out a questionnaire, indicating an overall response rate of 18.72%. The questionnaires were analyzed anonymously.

Measurement Development

Because of limited space available and respondents' lack of time, including several items to measure each of the constructs is not a viable alternative. Each satisfaction element of the transaction-specific satisfaction constructs is measured by one item, which is a reasonable compromise between the use of a full scale and the use of one primitive single item for measuring transaction-specific satisfaction (Homburg, Rudolph 2001). Next to the transaction-specific satisfaction elements based on literature, one additional satisfaction element for end-user's satisfaction with the external supplier is added, that is visibility. Interviews with the management of the service provider involved in the study revealed that visibility of the security agents to the end-users is of vital importance. Because of intangibility of the security services delivered, physical presence and visibility of a security agent is an important aspect of the delivered service for end-users (Blumberg 1998).

Next to the transaction-specific satisfaction elements, overall satisfaction with the external purchased service (security service) and overall satisfaction with the business service (exhibition space provided) are also included in the survey. These are included to assess the validity of the related transaction-specific satisfaction constructs (cf. *infra*). The two overall satisfaction constructs and the importance attached by the end-user to the purchased security services are each assessed by one single item. In this research study, overall satisfaction is considered unidimensional and directly accessible, and thus easy to express, for the respondent (Selnes 1998). Possible sources of overall satisfaction are already included in the satisfaction elements of transaction-specific satisfaction and thus can not be part of the overall satisfaction construct itself (Selnes 1998). For each statement, the respondents are asked to indicate their level of agreement on a seven-point rating scale, ranging from total dissatisfaction to total satisfaction.

Research Findings

To assess construct validity and test the hypotheses, Partial Least Squares (PLS) appeared the most appropriate technique based on the properties of the data at hand. PLS makes no distributional assumptions (Chin 1998) and it offers an alternative for incorporating formative as well as reflective indicators in one model (Diamantopoulos, Winklhofer 2001). The program used for these analyses is SmartPLS Version 2.0.M2 developed by the Institute of Operations Management and Organization of the University of Hamburg (Germany).

PLS estimates both factor loadings (i.e. measurement model) and structural paths (i.e. structural model) simultaneously (Chin 1998). We follow a two-step approach based on Hulland (1999). First, the measurement model is evaluated to assess the construct validity of the two transaction-specific satisfaction constructs. Then, the impact of end-users' satisfaction with the external purchased service on end-users' satisfaction with the business service is assessed by evaluating the structural model (hypotheses testing).

Assessing Construct Validity

The satisfaction elements of transaction-specific satisfaction are conceptualized as formative (causal) rather than reflective indicators, as transaction-specific satisfaction is the result from satisfaction with specific elements of the service encounter (Shankar, Smith, Rangaswamy 2003). This is consistent with the research of Homburg and Rudolph (2001) in which the satisfaction elements have an impact

on (or cause) the higher-order construct of satisfaction. Because of the formative structure of the transaction-specific satisfaction constructs, traditional validity assessments can not be used (Diamantopoulos, Winklhofer 2001). Observed correlations among the construct's measures may not be meaningful (Diamantopoulos, Winklhofer 2001) and as a consequence, assessment of item reliability and convergent validity become irrelevant (Hulland 1999). Alternative methods to statistically assess the validity of formative constructs exist: linking the formative construct to another construct measured by means of reflective indicators and theoretically related to the formative construct (Diamantopoulos, Winklhofer 2001). Previous research has indicated that transaction-specific satisfaction is an antecedent of overall satisfaction (Jones, Suh 2000; Shankar, Smith, Rangaswamy 2003): satisfaction with the last transaction will have a direct influence on overall satisfaction with the service (Parasuraman, Zeithaml, Berry 1994). Thus, the transaction-specific satisfaction construct can be considered as valid if it significantly enhances overall satisfaction and if the indicator coefficients of the transaction-specific satisfaction construct are significantly different from zero (Diamantopoulos, Winklhofer 2001). As discussed above, satisfaction elements are used as indicators of transaction-specific satisfaction. Indicator coefficients which are not significantly different from zero, can not be considered valid measures. These contain information perceived redundant by the respondent, have high correlations with other indicators or are perceived irrelevant for the particular satisfaction construct and should therefore be excluded from the model (Bollen, Lennox 1991; Diamantopoulos, Winklhofer 2001).

First, construct validity of transaction-specific satisfaction of the end-user with the external purchased service is assessed. PLS analysis indicates that transaction-specific satisfaction with the external purchased service significantly enhances overall satisfaction with that external purchased service ($\beta=0.78$; $p<0.001$). The explained variance (R^2) of overall satisfaction with the external purchased service is 0.60. However, not all satisfaction elements have an indicator coefficient significantly different from zero ($p>0.10$). These indicators (satisfaction elements) should be deleted from the model before hypotheses can be tested. Satisfaction elements such as reliability of the service supplier ($t=0.80$), complaint handling ($t=0.97$) and supplier personnel's expertise ($t=0.47$) are not significantly related to transaction-specific satisfaction with the external purchased service. On the other hand, the PLS analysis indicates that transaction-specific satisfaction with the external purchased service is caused by accessibility and ability to contact the external service supplier ($t=2.55$), visibility of the external supplier's personnel (i.e. security agents) ($t=2.06$) and contact between supplier personnel and customer ($t=1.68$). These three satisfaction elements are retained to test the hypotheses.

Next, construct validity of transaction-specific satisfaction of the end-user with the service delivered by the business service provider is assessed. Based on PLS analysis, transaction-specific satisfaction with the business service significantly enhances overall satisfaction with that business service ($\beta=0.81$; $p<0.001$). The explained variance of overall satisfaction with the business service is 0.66. As in the previous assessment, not all indicator coefficients of the satisfaction elements are significantly different from zero ($p>0.10$). Accessibility and ability to contact the service supplier ($t=0.74$) and contact between supplier personnel and customer ($t=1.20$) are not significantly related to transaction-specific satisfaction with the business service. These satisfaction elements will be deleted before the hypotheses are tested. The other three satisfaction elements, reliability of the business service supplier ($t=2.10$), complaint handling ($t=2.30$) and supplier personnel's expertise ($t=2.64$), are relevant formative indicators of transaction-specific satisfaction with the business service. These results are consistent with the findings of Homburg and Rudolph (2001). In their research, the most important elements determining satisfaction in business manufacturing settings are satisfaction with order handling (incorporating reliability), satisfaction with complaint handling, and satisfaction with salespeople (incorporating knowledge and expertise of frontline personnel) (Homburg, Rudolph 2001).

Hypotheses Testing

After validity assessment of the two transaction-specific satisfaction constructs, the impact of end-users' satisfaction with the external supplier's service on the end-users' satisfaction with the service provider's service can be assessed. To assess the structural model, only those satisfaction elements that are significantly related to one of the transaction-specific satisfaction constructs are incorporated in the model (cf. supra). The correlation matrix illustrated in Table 1 includes the relevant satisfaction

elements for each transaction-specific satisfaction construct and the two overall satisfaction constructs.

INSERT TABLE 1 ABOUT HERE

To evaluate the hypotheses, the model is assessed in PLS using bootstrapping to test the statistical significance of the path coefficient between the two transaction-specific satisfaction constructs (Chin 1998). The objective of PLS is to maximise variance explained, rather than fit, therefore no overall goodness-of-fit measures are available (Hulland 1999). Prediction-orientated measures such as R^2 (variance explained) of endogenous constructs (Chin 1998) are used to evaluate the structural model.

The impact of transaction-specific satisfaction with the external purchased service on transaction-specific satisfaction with the business service is assessed (H1). The PLS regression reveals that the path coefficient of the hypothesized relationship is 0.39 and significant at the 0.001 level ($t=4.74$). The R^2 of transaction-specific satisfaction with the business service is 0.15. Thus, we find support for H1: end-users' satisfaction with the business service is in part explained by the delivery of the external purchased service.

A methodology to investigate moderating effects in PLS has been assessed by Monte Carlo simulations (Chin, Marcolin, Newsted 2003). However, this methodology has only been tested for constructs with reflective indicators, and not yet for constructs with formative indicators (Chin, Marcolin, Newsted 2003). Lack of a methodology to investigate moderating effects in PLS using formative indicators, the database is split into three groups based on the importance attached by end-users to the external supplier's service delivery: not very important ($n=65$), important ($n=85$) and very important ($n=51$). The second hypothesis (H2) can be assessed by comparing the three groups: if importance attached to the external supplier's service by end-users increases, the impact of end-users' satisfaction with the external purchased service on the end-users' satisfaction with the business service should increase. In the first group, considering the security services delivered not very important, the path coefficient of the hypothesized relationship is 0.30 ($t=2.45$) and the R^2 of transaction-specific satisfaction with the business service is 0.09. In the group considering the security services delivered important, the path coefficient of the hypothesized relationship is 0.33 ($t=1.71$) and the R^2 is 0.11. In the last group, considering the security services delivered as very important, the path coefficient of the hypothesized relationship is 0.46 ($t=3.74$) and the R^2 is 0.22. These results indicate that, when the importance attached to the external purchased service increases, the strength of the relation between satisfaction with the supplied service and satisfaction with the business service as well as the variance explained of satisfaction with the business service expand. However, the significance of the increases has not been statistically tested. Consequently, H2 can only be accepted with reservation.

Main Contribution

From a theoretical viewpoint, this research study contributes to the literature on supply chain management and the larger network within which business service providers operate. The relevance of the service supply chain and the effect of external purchased services on downstream supply chain members are confirmed in this research study. The results indicate that services purchased from an external supplier by a business service provider influence downstream supply chain members and their satisfaction with the business service provider. As such, this study empirically confirms relationship interconnectedness in a service supply chain setting. Cross-relational tasks, simultaneous management of several relationships and management of interconnections among relations, have been largely neglected in literature (Ritter, Wilkinson, Johnston 2004). This study underlines the importance of such cross-relational tasks and stresses the need for future research on this topic to enhance managing and being managed within a business network. Moreover, the supply chain vision for business services and the relationship interconnectedness hold even when the external purchased services are considered less important by the downstream supply chain members. Thus, not only strategically valuable services should be incorporated when dealing with business networks. Also

supplied services considered less important have an impact across the supply chain and should be considered when managing business networks.

This research study also contributes to the literature on customer satisfaction and its relevant determinants. Previous research revealed that the focus and placement of the customer in the supply chain can influence the way in which the delivered service is evaluated (Zsidisin, Jun, Adams 2000). Dependent on the position in the supply chain, other satisfaction elements play a role in evaluating the service delivered. The validation of the transaction-specific satisfaction constructs illustrates this statement. In this study, the relevant satisfaction elements for the business service, purchased and consumed by the end-user, show great resemblance with the relevant satisfaction elements in business manufacturing settings (Homburg, Rudolph 2001): reliability, complaint handling and expertise are related to core service elements. However, the relevant satisfaction elements for the external supplier's service, consumed but not purchased by the end-user, are different. From the end-users' view, the external supplier has a more upstream position in the supply chain than the business service provider. The end-user has almost no direct contact with the external supplier and might also have less knowledge on the service to be delivered. Consequently, the quality of the external supplier's service in terms of reliability, expertise, and complaint handling might be harder to judge for the end-user. Therefore, the end-user will look for other, more 'tangible' (easier to judge) evidence of the quality delivered (Berry, Bendapudi 2003) such as the visibility of the security agents and the direct contact with the agents. These indicators can be observed directly by the end-user and are thus easier to evaluate. Because of the impact of external purchased services along the supply chain and relationship interconnectedness, the business service provider purchasing these services should be aware of these additional indicators of quality.

In this research study, several opportunities for further research are revealed. Research should not be limited to individual dyadic relationship between firms. Relationship interconnectedness and the larger network in which relationships exist should be further explored. Especially more emphasis should be placed on the development of measurement instruments which indicate the impact of relationship interconnectedness and its scope. Moreover, not only key business services or strategically valuable services should be investigated as services considered less important might also affect downstream supply chain members. Future research is needed to explore and generalize the findings and gain in-depth understanding on service supply chains. In this research study, the impact along the supply chain was empirically tested for security services purchased by a business service provider. For other external purchased services, the relevant satisfaction elements can differ: for example, visibility of frontline employees to end-users could have less impact in other services settings. Future research could provide more insight into the causal indicators (or satisfaction elements) of transaction-specific satisfaction for business services. From the viewpoint of end-users, the discrepancy in satisfaction elements between services purchased from a service provider and those delivered to the service provider by an external supplier should be further explored. Moreover, certain limitations of this study like the one-item measures for satisfaction elements and overall satisfaction should be dealt with in future research.

From a managerial viewpoint, implications for both the business service provider and the external service supplier can be deduced. First, the results indicate that service providers should pay more attention to services purchased from an external supplier and to that supplier's selection and evaluation, even when these services are considered less strategically valuable. In the service supply chain, decisions at one stage can impact later stages of the supply chain (Sampson 2000): service providers are considered responsible for the work of chosen suppliers and for choosing other suppliers when necessary. Management practices such as quality assessments or relationship governance mechanisms can help the service provider to better manage upstream supply relationships and thus increase the satisfaction of downstream supply chain members. Business service providers should also be aware of relationship interconnectedness and the impact of the network in which the relationships exist. Changes in the interaction with the external supplier can have an effect on other relationships in the network and thus also on the end-user. Moreover, the business service provider should enable and encourage the external supplier to deliver the service requested by the end-user. For example, in this study the business service provider should enable the security agents to take up a position with high visibility to the end-users. To ensure this high visibility, the provider's premises might

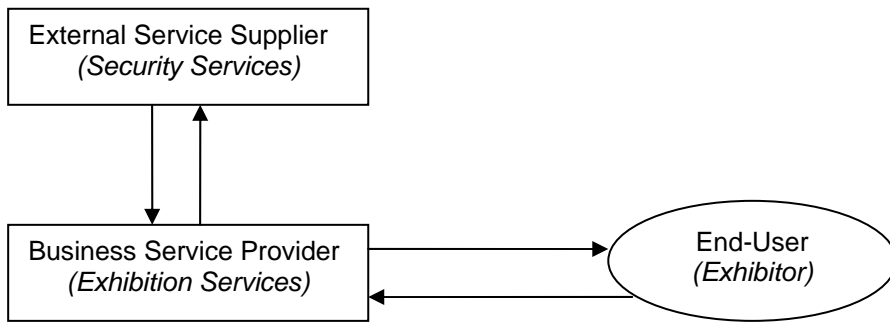
need to be adjusted. The results of this study also indicate some managerial implications for the external service supplier. The external service supplier should not only pay attention to the requests of the buyer, but also to the needs of the end-user in order to enhance customer satisfaction. Based on Berry and Bendapudi (2003), the external service supplier should provide “evidence” to the end-user on the quality of the service delivered. In this study, certain measures to enhance visibility of the security agent are already taken by the external service supplier: for example, wearing a uniform is obligatory. Some additional actions to perform evidence management can still be taken. Based on the relevant satisfaction elements of the external service supplier, these measures should be mainly related to human resource management. Hiring the right people and providing regular training are needed to assure and enhance accessibility and interpersonal skills of the security agents.

Table 1
Correlation matrix ^a

	1.	2.	3.	4.	5.	6.	7.	8.
Transaction-specific satisfaction with external supplied service								
1. accessibility of supplier	1.00							
2. contact with supplier personnel	0.58 ^{***}	1.00						
3. visibility of supplier personnel	0.69 ^{***}	0.52 ^{***}	1.00					
Transaction-specific satisfaction with business service								
4. reliability of supplier	0.40 ^{***}	0.22 ^{**}	0.38 ^{***}	1.00				
5. complaint handling	0.31 ^{***}	0.12 [†]	0.33 ^{***}	0.62 ^{***}	1.00			
6. expertise of supplier personnel	0.30 ^{***}	0.24 ^{**}	0.31 ^{***}	0.64 ^{***}	0.59 ^{***}	1.00		
7. Overall satisfaction with external supplied service	0.68 ^{***}	0.72 ^{***}	0.64 ^{***}	0.30 ^{***}	0.28 ^{***}	0.35 ^{***}	1.00	
8. Overall satisfaction with business service	0.40 ^{***}	0.28 ^{***}	0.37 ^{***}	0.70 ^{***}	0.70 ^{***}	0.69 ^{***}	0.37 ^{***}	1.00
Mean	4.66	4.75	4.93	5.54	5.77	5.29	4.83	5.70
s.d.	1.02	1.12	1.19	1.05	0.91	1.29	1.11	0.82

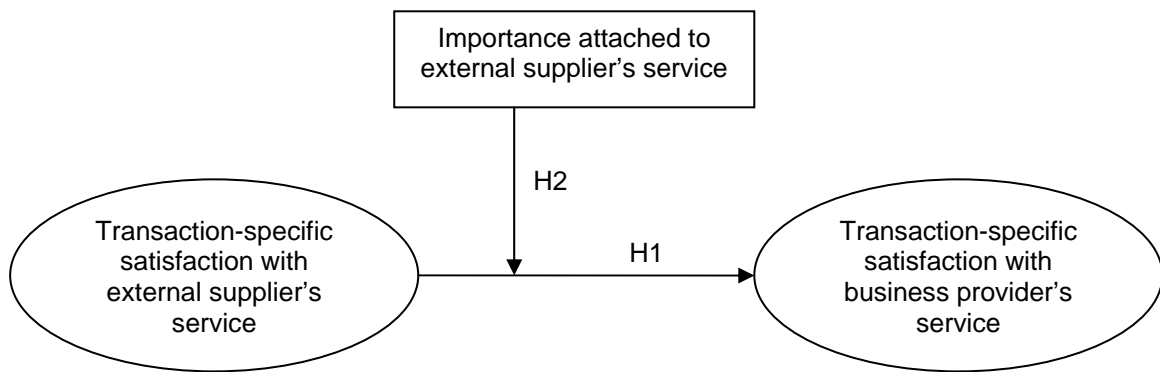
^a *** p<0.001
^{**} p<0.01
^{*} p<0.05
[†] p<0.10

Figure 1
Service supply chain ^b



^b Based on Fitzsimmons and Fitzsimmons (2006)

Figure 2
Research framework



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