Abstract

Whilst client dependence on an IT supplier is already a well-known risk in IS outsourcing relationships, investigations of the supplier side of dependence have been largely neglected. This contradicts traditional dependence research, which suggests to incorporate the respective dependence of both parties in a bilateral exchange relationship. This paper attempts to close this research gap and investigates supplier dependence in five outsourcing relationships with two-sided data. Furthermore, it proposes a conceptualization of supplier dependence and applies two central dyadic constructs from reference disciplines, namely relative and joint dependence, on IS outsourcing relationships.

1. Introduction

Dependence, or the extent to which it is necessary to maintain an exchange relationship to achieve desired goals [1], is seen as a central attribute of relationships between organizations in various disciplines [2–4]. Likewise, prior IS literature has acknowledged that dependence pertains to the ‘behavioral dimension’ ([5], [6]) or to the ‘attributes’ [7] pervading the working atmosphere of an outsourcing relationship.

However, when compared to research in other fields, such as marketing channels or industrial relationships, very few efforts have been made to bring forward these concepts in IS research. Apart from studies that simply mention the term ‘dependence’, mainly to refer to it as a risk for the client, literature remains largely silent about its dyadic nature. In traditional dependence research, it is common practice to incorporate both organizations’ dependencies in order to identify the one with the greater power base in a relationship [2–4]. A difference in a dependence structure represents a threat for the weaker party’s business performance (e.g., [3], [8]). For example, a more powerful supplier might deliver lower service quality to the detriment of the client, but also IT suppliers might suffer when a powerful client bullies them and puts pressure on prices.

While [9–11] analyze different issues related to client dependence, especially, the supplier side of a dependence structure is generally barely emphasized and rarely understood in IS outsourcing relationships. This is a shortcoming, since today’s global outsourcing market does not only show large-players such as IBM, Accenture or SAP, which will most likely have very low dependency on any single client. On the business-to-business market, small-and mid-size firms rather coexist with global-players. IT suppliers usually vary in organizational maturity, in offered IT solutions (e.g., IS development, operations, software-as-a-service), as well as in served client portfolios and markets. For example, some suppliers act on niche markets facing oligopolistic demand structures or on markets with high competition, all of which influence a supplier’s dependence and power position with regard to a particular client. Given that prior research on the supplier side is rare, capturing supplier dependence is a crucial building block towards a better understanding of dyadic dependencies in IS outsourcing.

To sum up, this paper focuses on the supplier side of bilateral dependencies and contributes in two ways: (1) by applying dependence research to fully describe a dependence structure between IT suppliers and their clients, (2) by providing a conceptualization of supplier dependence specific to IS outsourcing relationships. Thus, our results will complement existing literature and allow a full dyadic dependence approach on IS outsourcing relationships. Thereby, next to a client perspective, a supplier perspective is adopted – identified as a view point generally less examined by previous literature reviews [12].

2. Related literature

2.1. Dependence in exchange relationships

In other research disciplines, like relationship marketing and supply management, it is common to consider client dependence along with supplier
Dependence [3], [13]. Many researchers have built on Emerson’s dyadic dependence conceptualization [2], suggesting that dependence and power are strongly interlinked: “The power of A over B is equal to, and based upon, the dependence of B upon A”. Investigations of the dyadic nature of dependence led to two constructs, namely joint dependence, or the sum of two organizations’ dependencies on each other, and relative dependence, i.e., the difference in the dependencies as described above [3], [4].

Researchers have used both constructs to measure the impact on, for example, relationship quality and the partners’ performances in an exchange relationship. High joint dependence usually shows positive outcomes due to a mutual desire to maintain the relationship and, for example, higher levels of joint action, commitment and trust (e.g., [3], [13]). In contrast, dependence asymmetry has been proven to lead to decreasing trust and commitment as well as increasing conflict [13]. These constructs were also embedded in larger causal models to investigate their interplay with further antecedents of relationship quality and business performance [14].

2.2. Dependence in IS outsourcing relationships

IS outsourcing is herein understood as a “business practice in which a company contracts all or part of its information systems operations to one or more outside information service suppliers” [15]. Turning to dependencies in IS outsourcing relationships, prior research has here shown that dependence can be linked to the field of ‘relational governance’, i.e., the softer practices associated with managing client-supplier relationships, as a determinant of client's outsourcing success [8]. Combined with findings from reference disciplines, dependence can be seen as a ‘contextual’ variable and thus, as antecedent of relational governance facets, like trust, commitment and conflict [3], [7], [14]. While contextual factors are crucial for understanding exchange relationships, they have been largely disregarded in outsourcing research [16].

Throughout an outsourcing relationship, dependencies are likely to influence the efforts put into the relationship, stipulating power-play and influencing relationship outcomes. For example, in an experimental setting, Swinarski et al. found a positive relationship between a client’s power, i.e., a supplier's dependence on the client, on its motivation to comply with contractual obligations, its willingness to cooperate and to invest additional resources in the relationship [17]. A similar study investigated the impact of an outsourcing deal’s importance to a supplier on relationship quality and outsourcing success [16]. Additionally, a few case studies provided insight into the dynamics of dependence [9–11], [18], indicating that the dependence structure might often shift to an imbalance over time in favor of the supplier.

Thus, prior research approaches let us assume that dependencies are highly relevant throughout the whole lifecycle of an IS outsourcing relationship. However, especially, the supplier side remains elusive. Understanding a supplier’s dependence is valuable for both parties in order to draw adequate conclusions from a specific dependence position, with regard to relative and joint dependence, in a dyad. For a client, supplier dependence represents an opportunity to ensure supplier bonding and to optimize the relationship in its favor (assuming that its own dependence is lower). Conversely, a high dependence on a client represents a risk for the IT supplier and can cause financial or strategic damage. To clarify supplier dependence in our field, we will build on the profound dependence literature and traditional theories as being referred to in the following.

2.3. Theories

Apart from Emerson’s generic conceptualization [2], several classical theories can be used to explain a party’s dependence in a bilateral relationship; mainly, resource dependence theory [19], transaction cost economics [20] and social exchange theory [21].

Dependence is a key element in resource dependence theory (RDT) [19]. Herein, firms are described as open systems which have to transact with their environment in order to obtain resources necessary for survival. Dependence arises when an organization cannot possess all required resources itself. Furthermore, dependence on another organization is influenced by the importance of the obtained resource and the degree to which that resource is controlled by relatively few organizations [19]. While the traditional way is to apply RDT on the client side, it can also be turned around, since clients also possess valuable resources for suppliers, such as compensation for delivered services (see e.g. [16]).

Transaction cost economics (TCE) deal with the comparison of production and transaction costs to achieve economic efficiency ([22], [20]). Transaction costs are defined by Williamson [20] as “comparative costs of planning, adapting, and monitoring task completion under alternative governance structures”. The theory describes the conditions of a transaction that lead to an optimal governance structure between market (external), hierarchy (internal) and hybrid. One major factor which influences the efficient governance form is the level of specific assets. Heide and John [23] introduced transaction-specific investments as “those human and physical assets (tangible and intangible) required to support exchange and which are specialized to the exchange relationship”. Because of their
specify, these assets are non-redeployable in other exchange relationships and are assumed to create dependence for the investing party [23].

Social exchange theory (SET), originally developed to investigate interpersonal relations [21], has also been used in the marketing literature to study dyadic relationships between organizations [24]. A central construct in SET are outcomes obtained from a relationship, reflecting the difference between rewards received and costs incurred. To evaluate these outcomes, two further constructs have been posited, namely the comparison level (CL) and the comparison level for alternatives (CL.alt). Whereas CL represents the expected outcomes from that kind of relationship based on experience, CL.alt reflects the average outcomes that are available from the best alternative relationship [21]. If a firm obtains outcomes from an exchange relationship that exceed those available from alternatives, its dependence on the current partner increases [21], [24], even though, dependence arises here from more positive conditions [25].

Besides these three theories, another related perspective is the switching costs perspective (e.g., [3], [26]). The term ‘switching costs’ (SC) is often used to describe the costs incurred by a substitution of a supplier [23], [26], [27]. Today’s literature defines and operationalizes “switching costs in terms of economic (i.e., monetary) expenditures and intangible (i.e., psychological or relational) costs associated with changing an exchange relationship” [28]. Switching costs thus also address barriers to switching that create dependence on a current exchange partner.

3. Research approach

With the aim to study supplier dependence in IS outsourcing dyads, we investigated outsourcing relationships between different IT units within a client organization, operating in the passenger transportation sector, and five different IT suppliers. Note that a closer look at the client side of dependencies is given in [29]. The study was set up to follow a multiple-case design to derive in-depth, exploratory and generalizable findings [30], [31]. Table 1 gives a descriptive overview of the investigated cases. Literal and theoretical replication logics were applied for the selection of the five outsourcing relationships [31]. To have similar basic conditions, all five IT suppliers are strongly involved in development and/or maintenance phases of one of the client’s information systems (literal replication). For theoretical replication and to increase variance, relationships were selected to include different combinations of dyadic dependencies (low vs. high, symmetry vs. asymmetry). This initial evaluation was based on estimates of two client’s representatives.

We did not only conduct interviews with IT suppliers, but also included the respective clients’ opinions and evaluations to derive a more complete and adequate picture of supplier dependence. In total, 19 interviewees participated in our study. Whenever possible, we followed a multi-informant approach, i.e., we interviewed persons with different responsibilities and on different hierarchy levels (see Table 2). All interviews were based on a pre-tested interview guideline and a short questionnaire to triangulate data collection [31], [32]. Also, an estimate of dependencies in the respective relationship as well as determinants and influencing factors of supplier dependence were investigated. To enhance the generalizability of findings, this particular discussion was not limited to the chosen relationship, rather, interviewees drew on their experience gathered in other exchange relationships with different partners.

Altogether, the interviews lasted about 20 hours and produced 382 pages of transcribed text. The subsequent coding process was followed using guidelines [30], [33] and supported with a qualitative data analysis (QDA) software. Different streams of literature and theories (cf. section 2.3) were used to facilitate this process of concept development [32]. During analysis, the main challenge was to avoid an overlapping (mutual exclusiveness) of the identified determinants and facets, while, at the same time, striving to reach a high degree of completeness.

Worth mentioning is that we focused on the clients’ and suppliers’ perceptions of supplier dependence rather than on actual dependence. The latter is hard to assess, since necessary data to establish a fully objective measure is rarely available. We consider perceived values as an adequate proxy, since perceptions govern a decision maker’s behavior and are widely used in other disciplines [13], [34].

Table 1. Overview of cases

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
<th>Case 4</th>
<th>Case 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier description (app. values)</td>
<td>global presence, 400,000 employees, revenue 100 million USD</td>
<td>presence across Europe, 1,300 employees, revenue 150 million EUR</td>
<td>global presence, 10,000 employees, revenue 2.5 billion EUR</td>
<td>international presence, 500 employees, revenue 200 million EUR</td>
</tr>
<tr>
<td>IS lifecycle phase</td>
<td>maintenance</td>
<td>end of development</td>
<td>development/maintenance</td>
<td>development</td>
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</table>
Table 2. Overview of interviewees across cases

<table>
<thead>
<tr>
<th>Supplier side</th>
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<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>C5</th>
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<td>1</td>
<td>1</td>
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<tr>
<td>Team member</td>
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<tr>
<td>Account mgr.</td>
<td>1</td>
<td>1</td>
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<table>
<thead>
<tr>
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<th>Case</th>
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<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>C5</th>
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<tbody>
<tr>
<td>Division manager</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>1</td>
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<tr>
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<td>1</td>
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<td>-</td>
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<tr>
<td>Team/project manager</td>
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<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Total</td>
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</tr>
</tbody>
</table>

In total: 19 interviewees in 16 interviews

4. Case study findings

4.1 Suppliers’ dependence and power positions

To determine each supplier’s dependence and power position within the respective outsourcing relationship, we queried the supplier’s perceived dependencies, i.e., its own dependence and the perceived client dependence. Figure 1 shows the resulting dependence map (e.g., [27]) from supplier perspective (SP). The abscissa depicts the suppliers’ perceived client dependencies, ranging from low ([0-0.33]), over medium ([0.33-0.66]) to high ([0.66-1]). Accordingly, perceived own dependence is shown along the ordinate. Table 3 shows the corresponding numbers. Client and supplier dependence was measured by taking the average score on three reflective measured items respectively.\(^1\)

![Figure 1. Dependence map (SP)](image)

In accordance with traditional dependence research, the map can be analyzed in at least three ways: by the degree of supplier dependence, relative dependence and joint dependence. First, the extent of supplier dependence varies across the five cases. In our sample, case 1 reaches a low dependence position with 0.22. Cases 2 and 5 show medium levels, 0.39 and 0.61, and in cases 3 and 4 a high dependence of 0.83 is given.

From supplier perspective, a dependence symmetry is only perceived in case 3, i.e., relative dependence here is equal to zero. In cases 1, 2, and 5 the respective suppliers perceive a supplier dominance. The power advantage ranges from 0.22, in cases 2 and 5, to 0.44 in case 1, on a scale from -1 (maximum supplier’s dependence) to +1 (maximum client dependence). Case 4 is the only case, where the supplier perceives a structure favoring the client in the relationship (-0.33).

In summary, with the help of the two constructs suggested by traditional dependence research, relative and joint dependence, we are able to adequately position a supplier vis-à-vis its client and fully describe a dyadic dependence structure. However, these constructs cannot explain how specific positions of suppliers arise or how they can be actively influenced. For this purpose, a conceptualization of supplier dependence, addressing determinants and influencing factors, is developed in the following.

![Table 3. Assessments of dependencies (SP)](image)

4.2. Conceptualization of supplier dependence

In related research disciplines, Emerson’s power-dependence-theory is widely used to conceptualize dependence (e.g., [35], [36]). Herein, a party’s dependence is determined by, (1) its motivational investment in goals mediated by the client and (2) the degree to which alternatives exist to achieve these goals. Motivational investment involves the value of the outcomes mediated by the other party [35], which is similar to “resource importance” in RDT [19]. For the second category, Emerson adds that the costs associated with alternatives have to be taken into account [2]. Or, in other words, dependence is

\(^1\) Based on Frazier’s and Emerson’s conceptualization, a party’s dependence is the “need to maintain the relationship in order to achieve desired goals” [1].
influenced by the “difficulty involved in replacing the incumbent exchange partner” [23].

In general, our explorative study confirmed the applicability of Emerson’s broad conceptualization to our field and showed that supplier dependence in IS outsourcing relationships is determined by (1) the importance of the outsourcing relationship in achieving a supplier’s goals, and (2) the substitutability of the current client with an alternative outsourcing company. Conceptually, a multiplicative relationship between the two determinants exists, reflecting that dependence is not present when either importance or substitutability is close to zero [19], [26].

In the following, we will report on the important underlying facets of the two determinants in IS outsourcing relationships. This section will draw on our case study interviews as well as on the different general theories described in section 2.3. Furthermore, the description of the identified supplier dependence facets are substantiated with statements from client (CP) and supplier perspective (SP).

4.2.1 Importance of the outsourcing deal. Our data analysis suggests two factors determining a supplier’s perceived importance of a relationship: relative financial magnitude and strategic impact of the outsourcing relationship.

Relative financial magnitude. Given that key goals of suppliers are sales and profit, they are relatively dependent on outsourcing relationships that account for a significant fraction of their turnover and profit. This measurement has already been widely used in studies of channels (e.g., [35], [36]) and industrial relationships (e.g., [34]). Relative financial magnitude is also seen as a central component of an organization’s dependence in RDT [19]. Apart from current levels of total sales or profit, anticipated future sales and profits pertaining to this deal as a percentage of total sales and profits also influence a relationship’s importance ([16], [34]). In our IS outsourcing cases, relative financial magnitude was also closely linked to importance and thus further strengthens earlier predictions, [16], hypothesizing a positive relationship between them.

“As a supplier, I am dependent on a customer, because I would like to make profit.” Case 2 (CP)

“Additionally, the future business we will have with this customer is important. Well, yes, I think financial dependence is very high here.” Case 4 (SP)

“In the past, we made a lot of turnover with this project, dependence was much higher in the past.” Case 5 (SP)

Strategic impact. While the sales and profit approach is widely used in other research disciplines, it is not sufficient to determine the whole importance of a relationship in our domain. A second crucial facet we encountered in our cases addresses the “strategic” importance of a deal. Some suppliers ascribe a high importance to an exchange relationship, even if the current and future relative financial magnitude herein are low. This is in accordance with RDT which introduces a second facet - ‘criticality’ - alongside the relative magnitude of a resource ([19], [26]). In such cases, suppliers usually expect the current relationship to have a significant influence on their medium- to long-term business development. Frequently, IT suppliers try to access important industry or domain knowledge within an exchange relationship, which presents another kind of compensation. Essentially, strategic intents associated with an relationship can be twofold: On the one hand, the expectation of lucrative follow-up jobs in other units within the client company stimulates the importance of the current deal. Figuratively speaking, “having a foot in the door” is here a motivating factor and almost all interviewees hoped that the current client department endorses them to other IT projects and tenders of the client company.

On the other hand, strategic intents can also move beyond the client’s company and reflect the expectation to generate further business in a market as a consequence of the current deal. Here, the access to a not yet tapped market sector, an increase of reputation or the interest in receiving crucial references contribute to relationship importance (see also [16]).

While deals are usually envisioned to be successful, the opposite can take place as well. A negative outcome may discourage other potential clients and can result in a severe damage for the supplier’s reputation and business development. Altogether, the strategic impact encompassing the gain or loss of future deals as a result of the current relationship proffers a facet of crucial importance.

“It also has a strategic reason. This client has a high reputation in this particular market. And of course, if we successfully complete this project and the client is satisfied, other clients will get interested in our product. And yes, thus, there is a kind of dependence.” Case 4 (SP)

“We need this client. They are important for us to convince other customers. [...] I’d say we are dependent.” Case 3 (SP)

“So far they [supplier] had the interest to place this product on the market, they were dependent on us. Once they decided to leave this market, there was no dependence anymore.” Case 5 (CP)

4.2.2 Substitutability. Substitutability reflects the costs and efforts needed to achieve financial and strategic goals in alternative exchange relationships.

Client alternatives. As RDT [19] and Emerson’s power-dependence theory [2] propose, an organization’s dependence on an exchange partner is interrelated to the number of alternatives. A limited number of alternatives lowers the current client’s substitutability and increases perceived dependence. Case analyses suggest that in IS outsourcing relationships the existence of alternatives equally influences a supplier’s dependence. Suppliers facing
monopolistic or oligopolistic market structures might have greater efforts to identify alternate exchange partners. Furthermore, if suppliers act on saturated markets the perception of potential alternatives is likely to decrease. In contrast, suppliers with diversified client portfolios, i.e., serving different markets might perceive a higher number of client alternatives.

“The supplier planned to sell this product to other clients. But when it became clear that this solution cannot be sold to others, their dependence on us increased.” Case 5 (CP)

“There are others who build their software only for certain clients. We do projects and our projects are not dependent on any client.[...] The market is big.” Case 2 (SP)

“This client is one we would never want to lose, never. We could survive without them, yes. But there are not many customers like them in the market.” Case 3 (SP)

**Degree of amortization.** Non-recoverable investments in terms of time, efforts and money in outsourcing relationships are sunk costs which have a binding effect on the current exchange partner [28], [37]. Sunk costs are seen as irrelevant according to classical economic and normative principles of economy [38]. The reason is that historical sunk costs cannot be reversed and only future costs and benefits should be taken into account for the purpose of a rational decision making model [38], [39]. However, in practice, decision-makers find it usually hard to ignore past costs [38], [39]. The degree of amortization of investments was found to be highly relevant for a supplier. Interviewees explained that in IS development projects, IT suppliers often go into advance payment and are first paid after reaching certain milestones. In phases, in which they have not reached an amortization of their investments, termination of the relationship is considered to be particularly painful. Thus, the lower the degree of amortization the higher is the perceived need for the supplier to maintain this business relation and the higher should be its perceived dependence.

“In the beginning, we had a negative financial impact. In these phases, our dependence on that client was very high. You don’t like to leave a relationship with an unprofitable contract. That would have been a disaster.” Case 1 (SP)

“Dependence is high, when the financial damage caused by a contract termination is high. Sometimes we outlay in advance and payment milestones are much later. An exit of the project in such phases would have an extremely serious impact on our business.” Case 4 (SP)

“In the beginning, the supplier was relatively dependent on us. They offered a fixed-price contract, but they underestimated their internal efforts. Dependence declined or was very low, when the project was refinanced with maintenance payments.” Case 1 (CP)

**Acquisition and set-up costs.** Grounded in TCE, the costs of a supplier to acquire an alternate customer hamper the substitutability of the incumbent client. When awarding IS outsourcing contracts, bidding processes are a widely used method to select the ‘best fit’ IT supplier among competitors. For participating suppliers, bids can be a costly and time-consuming affair, in particular when the competition among suppliers is strong. Once an alternate client has been won, efforts for contract negotiation and initial project set-up create further costs which delay and hamper the achievement of the financial and strategic goals. Frequently, the staff needs train-up phases before becoming productive. Set-up costs further increase when new employees with specialized know-how or expertise have to be hired in.

Depending on the contractual agreements, the costs incurred in these phases might be partially covered by payments from the ‘new’ client. For example, costs for tailoring a software solution might be charged back. Overall, additional efforts, costs and time borne by the supplier to again achieve the lost financial or strategic goals decrease the substitutability of the current client.

“From one day to another we would not be able to staff the project members to a totally different project. There would be train-up phases and yes, we would have to generate new business.” Case 2 (SP)

“Substitutability of a client is much easier when your systems are customizable [which induces lower set-up efforts].” Case 3 (SP)

“When the client decided to switch to another supplier a few years ago, we tried to get new deals. But we had great problems. [...] We had to identify a larger number of smaller clients, there are not many as big as this client. You need higher contract volumes. All this meant more costs, for contract negotiations and to handle the number of clients. We did not manage to substitute the lost volume.” Case 5 (SP)

**Lost benefits.** A further binding instrument are benefits received from the incumbent relationship. Especially, if the replaceability of these benefits are limited, a so called benefit-based dependence arises [25]. These considerations trace back to SET [21] which compares the outcomes of a current relationship to those available from alternatives.

A client’s attractiveness can originate from different sources. Benefits include the access to important technical or market information [34] or a client’s support to build up rare, but valuable capabilities or know-how. Furthermore, suppliers might prefer clients that are very innovative and “push them forward”. Good inter-personal relationships and a client staff’s quality were also mentioned as potential benefits on team-level.

Thus, perceived benefits are multi-faceted, but we argue that they can act as a binding mechanism. Namely, when the perceived net-benefits are higher than the second-best client alternative. However, if the currently obtained benefits are lower than those expected from alternate exchange partners, lost benefits are not present and do not bind the supplier to the incumbent client.

“I would say there is a high emotional dependence. In our team there are many people who showed high levels of commitment to
Termination costs. In accordance with the logic of TCE, a termination of a business relation can induce follow-up costs detrimental to the supplier. While there might be efforts and costs related to handle the termination of the focal outsourcing contract, additional costs and efforts can be incurred for terminating the relationships to other contractual partners so far involved in the service delivery.

For example, those employees that have hitherto delivered the service to the customer and cannot be staffed to other projects, e.g.: due to special-purpose know-how and expertise, will either result in on-going idle costs or costs of layoffs. Interviewees also mentioned that employees themselves might terminate their employment contract when a particular client or a site are lost. Especially, the loss of valued employees can be harmful, e.g.: when they possess good technical and functional knowledge, which is hard to replace.

Furthermore, there can be running costs for unused physical assets (e.g., servers), license fees, or contractual penalties in case of premature termination. In the same way, IT suppliers that have further commissioned other IT suppliers, e.g., offshore centers, can face additional costs when ongoing contracts have to be cancelled. Appropriate contractual safeguards help to pass such costs on to the client or to other contractual partners. However, anticipated termination efforts and costs, which the supplier has to bear, decreases the substitutability of the incumbent client.

"At a later point, dependence is higher. You have hired a lot of developers and perhaps offshore IT suppliers. [...] A reversal can be very hard." Case 4 (SP)

"I think, our dependence is not so high since we are used to project business and that we have to deploy our employees quickly to other projects. [...] But this depends much on the number of projects we have and the number of employees in the given project. It is harder to staff a large number anywhere else." Case 5 (SP)

"When the client terminates a contract ... maybe we have know-how we cannot use anymore ... sometimes you lose project members who are specialized to a certain market or customer. They switch to the client or to other suppliers in the field." Case 4 (SP)

4.2.3. Spillover effects. During data analysis another factor emerged – here referred to as ‘spillover effects’. This factor is assumed to influence perceived supplier dependence but did not fit very well in the two traditional dependence categories. Spillover effects are specific in the sense that they result from other exchange relationships existing between the two exchange partners. In IS outsourcing, it is not uncommon that IT suppliers develop, operate or maintain more than one information system per client. Spillover effects then reflect potential, undesirable consequences, which a client might employ as a reaction to a terminated relationship by the supplier or to its plan to do so.

When considering the extreme case in which a supplier is basically able and willing to terminate a contract with the client, because it does neither contribute to the financial nor to the strategic business goals and the involved resources could be better used in alternate relationships: Anticipated negative consequences in other outsourcing relationships with this client – especially, if the client possesses therein an untapped power potential – can lead to a continuation of this disadvantageous business relation. Expected reactions of a client include, e.g.: tougher price negotiations, withholding of information, delaying of contract renewals or even termination of other contractual relationships by the client.

Case study analysis suggests the following relationship: The higher the perceived magnitude of spillover effects, the higher is the need to maintain the relationship and thus the dependence on this client.

"If you have one system with a client and this is not profitable, you won’t expire the contract. But mostly, you have more than one system with a client. For example, we could not terminate the contract X, because the client would complain. It is not very common, but a good account manager adopts a total perspective as well. Then, maybe you better give in [in this relationship] to safeguard your other investments [with this client]." Case 5 (SP)

"If we stopped our service tomorrow, we would face negative consequences in other relationships with this client." Case 2 (SP)

4.3 Cross-case analysis

To facilitate a cross-case analysis, we used a predictor-outcome matrix [30] (see Table 4). Apart from a short description of the eight factors, Table 4 shows in which cases the factors were mentioned respectively (denoted by an x). Here, we used both perspectives, that is, clients (CP) were asked as well to name determinants of supplier dependence. Whenever possible, we used the interview data to evaluate the factors’ extent (low L, medium M, high H). In some cases, a factor was mentioned as a sub-determinant of supplier dependence, but not evaluated in the contractual relationship at hand (see e.g., factor 5 in case 5, CP). To provide a clear overview, please note that multiple mentions on client or supplier side (in different interviews) were only counted once.

The cross-case analysis shows that the importance facets, relative financial magnitude and strategic impact, were the most mentioned factors to justify a specific dependence level. Next in line are the aspects of substitutability, client alternatives, degree of amortization and spillover effects. In our case selection, acquisition and set-up costs, lost benefits and termination costs were less commonly mentioned. In particular, it is striking, that these factors are barely
mentioned as relevant factors influencing a supplier’s dependence from client perspective. One reason for that could be that clients have less insight in these sub-determinants of supplier dependence. The high values of strategic impact across all cases can be explained by the client’s good reputation in the specific market.

Whilst more data would be needed to reliably evaluate the goodness of the determinants to explain a certain level of supplier dependence, the collected case data should not be disregarded. Figure 1 showed the different levels of supplier dependence. Overall, we see a good fit between these values and the factors’ evaluations. In case 1, overall dependence was assessed as low, which is also reflected in low levels of relative financial magnitude, a sufficient number of client alternatives and a high degree of amortization. Strategic importance, lost benefits and termination costs were rated medium to high, resulting in a low, but not absolutely insignificant dependence of 0.22. Similar, the deal in case 2 accounts for a small financial magnitude but the strategic impact is high. Alternatives are rather sufficient, merely acquisition and set-up costs are assessed as medium. This largely fits to the dependence estimated as moderate.

Case 5 is particular in our selection, since the client is currently switching to an alternate supplier and the current contract will expire in the near future. The deal’s contribution to the supplier’s financial and strategic goals has changed from high to medium/low. The IT supplier has had time to react to the lost revenues, but faces few alternatives and high acquisition and set-up efforts. Perceived supplier dependence has dropped from very high to a medium remaining dependence, reflecting that revenue has already been either lost or safeguarded by countermeasures.

Table 4. Predictor-outcome matrix across cases

<table>
<thead>
<tr>
<th>Higher-level factor</th>
<th>Influencing factor</th>
<th>Description</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
<th>Case 4</th>
<th>Case 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance</td>
<td>1 Relative financial magnitude (+)</td>
<td>Share of financial output, i.e., turnover or profit, accounted for by this deal today and in the future.</td>
<td>x x x x x x x x x</td>
<td>L L L M M M H H (H) (H) L/M L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Strategic impact (+)</td>
<td>Importance of this deal to achieve IT supplier’s strategic goals.</td>
<td>x x x x x x x - x x</td>
<td>H H H H H H H - (H) L (H) L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Client alternatives (+)</td>
<td>Number of client alternatives to achieve these financial and strategic goals.</td>
<td>- x x - x x x x x x</td>
<td>- H H - L M M L L L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 Degree of amortization (+)</td>
<td>Perceived degree to which the non-recoverable time, money and effort invested in the outsourcing relationship have been amortized.</td>
<td>x x - x x x x x -</td>
<td>(L) (L) - x - - - L L -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 Acquisition and set-up costs (-)</td>
<td>Perceived time, cost and effort needed to acquire alternatives and reach again an efficient level to compensate for affected goals.</td>
<td>- - x - - - x x x</td>
<td>- - M - - H - H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 Lost benefits (-)</td>
<td>Perception of benefits resulting from the current relationship and which are lost upon termination.</td>
<td>x - x - x x x -</td>
<td>H - - - H H - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 Termination costs (-)</td>
<td>Perception of additional time, effort and financial outlays needed for handling termination of the focal and related contracts (e.g., with IT suppliers and staff).</td>
<td>x - - - x - x -</td>
<td>M - - - - - - - L -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier dependence</td>
<td>8 Spillover effects (+)</td>
<td>Perceived magnitude of negative reactions by the client in other exchange relationships caused by a (planned) termination of the focal relationship.</td>
<td>- - x - x x x x x x</td>
<td>- - H - M L - - M</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Case 3 and 4, which received high values of supplier dependence, also show medium-to-high levels in the sub-determinants. In case 3, the relationship’s contribution to revenue and profit is medium, but strategic importance is high. The supplier has very few alternate clients to substitute the incumbent exchange partner. In addition, in case 3 there is more than one exchange relationship and potential spillover effects with a strong magnitude are perceived. Case 4 is similar, in addition, a low degree of amortization acts here as a further binding mechanism.

5. Conclusion

5.1. Discussion of Findings and Implications

The conceptualization of supplier dependence provides insights for both sides, client and supplier, on how to explain and influence the supplier side of
dyadic dependencies in an IS outsourcing relationship. The findings have several theoretical and practical implications.

As a theoretical contribution, we grounded our work on dependence and power research from reference disciplines (e.g., [2], [3], [13]) and incorporated supplier dependence next to client dependence to fully describe a dyadic dependence structure. Suppliers evaluated their own dependence and perceived clients’ dependence. In this way, we were able to identify the party with the higher power potential – at least from the suppliers’ viewpoint. It has to be noted that potential and actual degree of power use might differ (e.g., [3]), i.e., parties might not fully exercise a power advantage. Different reasons are conceivable. Since perceptions largely affect behavior and attitudes, one reason might be that perceptual differences exist and ‘incorrect’ evaluations of the own and/or the partner’s dependence are made.

Since in business-to-business marketing literature operationalization of dependence varies widely (e.g., [13], [25]), the second aim was to receive a reliable picture of supplier dependence in our field. Several theories and a dyadic case study were used to decompose the two broad and generic determinants, i.e., importance and substitutability, of dependence. Our approach enabled us to set crucial accentuations in the conceptualization of supplier dependence: First, we included the strategic importance right next to the financial importance of a contractual relationship. Furthermore, companies involved in IS outsourcing often face challenges in the clear specification of services and during the estimation of costs, which is reflected in the substitutability facets, degree of amortization and termination costs. Spillover effects were added as a third determinant, reflecting that a client might use its power in other exchange relationships as a reaction of a supplier’s (planned) termination of the focal relationship. Since the various facets of dependence were identified in an exploratory manner, involving several expert interviews and supported by literature, a high degree of generalizability is expected.

Furthermore, our research provides managerial implications: Since a partner with a larger power base is always a risk, both parties should monitor not only their own but also their partner’s dependence. However, case study interviews suggest that managing dependence is not easy, especially due to its dynamic nature and the variety of sources of influence. Interviews revealed that a dependence structure favoring a client can result in negative outcomes for a supplier. Too tight markets, low diversification and the risk that an IT solution cannot be sold to other clients represent serious concerns of IT suppliers. When the client terminates an important contract, lost revenues and profits might be hard to substitute and can even threaten the company’s long-term survival. However, a high own dependence needs not always to be disadvantageous, at least when the client’s dependence is equally high. Then, a mutually high joint, but balanced dependence relationship might result, facilitating the evolvement of a strategic partnership.

Overall, a higher supplier dependence can act as binding mechanism, bringing the client in a favorable position to benefit from better relationship outcomes and higher supplier commitment and loyalty [3], [16]. In parts, suppliers frankly reported that a high importance or dependence on a client leads to more motivation, easier access to resources from concurrent projects and a higher senior management’s commitment within their company.

5.2. Limitations and further research

The proposed conceptualizations of supplier dependence enriches the stream of IS outsourcing relationship research. In particular, we adopted two central constructs, relative and joint dependence, from reference disciplines to fully describe dependence structures in our domain. While we relied on multiple cases and applied a multi-informant approach, there still is the need for future research to discuss, argue and confirm our findings for the variety of IS outsourcing relationships. A limitation might be that, despite five distinct IT suppliers, only one client organization was involved in our study. In parts, we managed to weaken this limitation by incorporating different IT units (thus, different people and projects) within this organization. Whilst collecting dyadic data is difficult, especially when it comes to such a sensitive topic like ‘dependencies’, future research providing additional case studies in other industries would still be very valuable. To derive an exact composition of the supplier dependence construct, i.e., the weightings of the presented determinants and their facets, is seen as an interesting subject for a cross-sectional survey. Overall, we hope that this research stimulates further investigations into the dyadic nature of dependence. To move beyond a dyadic view and to investigate dependencies on a network level is further seen as a promising avenue for future research.

6. References


