**Journal of Information Technology Management**

ISSN #1042-1319

***A Publication of the Association of Management***

# HOW DECISION MAKER'S PERSONAL PREFERENCES INFLUENCE THE DECISION TO BACKSOURCE IT SERVICES

**BENEDIKT VON BARY**
TU DRESDEN
benedikt.von_bary@mailbox.tu-dresden.de

**MARKUS WESTNER**
OTH REGENSBURG
markus.westner@oth-regensburg.de

**SUSANNE STRAHRINGER**
TU DRESDEN
susanne.strahringer@tu-dresden.de

## ABSTRACT

To prepare their IT landscape for future business challenges, companies are changing their IT sourcing arrangements by using selective sourcing approaches as well as multi-sourcing with more but smaller sourcing contracts. Companies therefore have to reconsider and re-evaluate their IT sourcing setup more frequently. Collecting data from 251 global experts, we empirically tested the effect of service quality, relationship quality, and switching costs on IT sourcing decisions using partial least squares (PLS) analysis. Drawing on previously conducted expert interviews, our model extends previous studies and introduces a decision maker's sourcing preferences as a not yet examined moderator on IT sourcing decisions. This allows us to investigate the influence of the decision maker's beliefs on the decision process. We were able to confirm the negative effect of switching costs on a decision in favor of backsourcing, however we could not find significant support for the remaining hypotheses. We further discuss potential reasons for our findings and suggest future research opportunities based on our contribution.

**Keywords:** backsourcing, back in-house, information technology, personal preference, partial least squares

## INTRODUCTION

The role of information technology (IT) departments within companies has changed over the last years, shifting from a mere provider of operational support towards becoming an enabler for attaining strategic advantages and for business transformations [94]. Newly formed start-up companies used their strong IT capabilities and a more customer-focused approach to enter existing markets and pressure incumbent companies and their existing business models [15]. This forced large, established companies from various industries to adapt and to rethink how to best leverage their IT landscape, for example, to increase automation of routine tasks, to digitize or even re-invent their business models, or to adopt agile forms of collaboration [44]. Those new requirements pose challenges on the current IT landscapes of companies, e.g., their legacy IT systems or existing IT sourcing relationships [85]. At the same time, there has

been a strong increase in cloud-based services and a shift towards a deployment of standardized, almost "industrialized" applications as services [14; 44]. Before, large companies leveraged their size in realizing economies of scale within their sourcing volumes. The rise of cloud computing as well as a standardization of service delivery decreased those benefits and led towards a decline in large outsourcing contracts across a variety of services and a trend towards leveraging the respective "best-of-breed" vendors for individual services and at the same time for shorter time periods [56; 107].

Companies are increasingly looking for strategic options to react to these described challenges and to enable their IT landscape, so it can adequately support the changing and more dynamic business requirements [22]. One possible strategic option is to terminate existing sourcing relationships and to backsource the delivery of certain IT services previously performed by external vendors [7]. This concept of repatriating previously outsourced IT services back in-house was first defined by [48] and [60] with the term *backsourcing*. In addition to the possibility of backsourcing their IT, companies can also consider a multi-sourcing strategy by choosing the respective "best-of-breed" supplier for each service in scope and thus avoid their dependency on single vendors [56]. Moreover, this can improve cost benefits due to an increased competition between vendors, and increase agility and adaptability [56; 61].

These sourcing options reflect the previously introduced fundamental changes in the field of IT in general and in IT sourcing in particular. In many cases this will likely lead to so-called "second generation sourcing decisions" [58], when companies and the responsible decision makers are facing the choice whether to continue outsourcing a respective service or to repatriate it [12]. While there will be different, objective reasons for and against each option which have to be assessed individually by the respective companies, it can be argued that personal preferences of decision makers are also likely to influence the decision process [12]. Previous research within the field of IT backsourcing has mainly focused on exploring rather objective antecedents of backsourcing decisions [7; 97], but rarely focused on the decision maker and her/his subjective influence. Thus, the paper at hand aims at answering the following research question (RQ):

> *RQ: How does a decision maker's personal preference for internal IT influence a backsourcing decision?*

At the point of the decision in favor of backsourcing, a decision maker eventually accepts the need to adopt the existing strategy. Thus, executives do potentially admit that the previous outsourcing strategy was not ideal for the company, or that the existing outsourcing relationship did not meet the expectations and requirements [12]. To further reflect the described changes in the IT environment and to extend previous academic work within the field of IT backsourcing, we aim to put a special focus on the backsourcing of individual IT services and less on the termination of entire outsourcing contracts. Moreover, practitioners might benefit from our research by better understanding how personal preference and connected biases within the decision-making process might influence strategic sourcing decisions. We have chosen a confirmatory-quantitative approach with exploratory elements to answer the introduced research question. The unit of analysis is an individual, defined IT service. Using an online survey with IT practitioners from different countries, we have gathered a broad dataset and analyzed our research model using partial least squares (PLS) as method of analysis.

The remainder of this paper is structured as follows. The following section provides an overview of the theoretical foundations based on previous research on IT backsourcing and introduces a research model to explore drivers of backsourcing decisions. It further proposes hypotheses how a backsourcing decision is influenced by the previously identified factors of the model. The subsequent section describes the operationalization of the research model and the research approach. This is followed by the research results in the next section and their discussion in the subsequent section. The final section concludes and discusses further research directions and limitations.

# THEORETICAL FOUNDATIONS AND HYPOTHESES

In this paper, we introduce a research model to examine factors which trigger and influence a re-evaluation and decision regarding the sourcing setup for individual IT services. The model is displayed in Figure 1 and will be discussed in the following[1]. Our model builds upon previous research by employing three factors which influence backsourcing decisions, namely *service quality*, *relationship quality*, and *switching costs* [19; 49; 76; 106]. Additionally, the model extends previous research by introducing an additional factor influencing the decision

[1] The following section largely builds upon a previous research-in-progress publication [12], in which the author has derived the presented research model based on the existing literature.

whether to backsource IT service, namely a *decision maker's preference for internal IT*. This factor was added based on prior own research [8] and serves as a moderator for the three other factors. If no decision for backsourcing is taken, the company would consequently remain within an outsourcing relationship, either by switching vendors or by staying with the existing vendor.

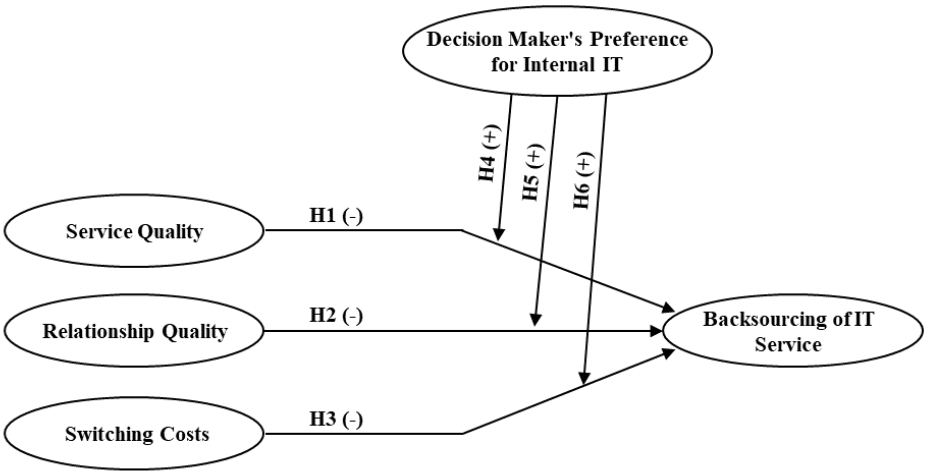


Figure 1: Research Model to Explain IT Backsourcing Decisions

In our research model, the unit of analysis is a defined, individual IT service (e.g., application development, a helpdesk hotline, or data center services). This allows us to not only focus on backsourcing of large outsourcing contracts, but also on a backsourcing decision for an individual service. This approach was chosen because a company could decide to only perform the more business critical services in-house and thus partially backsource those instead of terminating an entire outsourcing contract [99]. Therefore, a finer distinction of a company's IT sourcing setup can be made by considering the characteristics of different services and their suitability for backsourcing separately. Further, research has shown that there is an increase in the number of separate outsourcing contracts, accompanied by a decrease in contract volumes and durations [56]. Thus, the focus on individual IT services will be more relevant for future out- and backsourcing decisions.

## Backsourcing of IT Services

A backsourcing transition always succeeds a prior period of outsourcing of the respective IT services to an external vendor [1]. Depending on the design of this original outsourcing relationship, there are different forms of IT backsourcing transitions [6]. All possibilities have the common characteristic of a change in ownership back to the mother organization [73]. This differentiates the concept of backsourcing from related terms which emphasize rather on a change of location of the service delivery, e.g., reshoring, backshoring, or relocating [7]. Therefore, within this paper, we put our focus on the change in ownership, and thus the organizational dimension [97] of IT backsourcing and do not consider a potential additional change in location.

Within the existing body of academic literature on IT backsourcing, researchers have mainly focused on three different themes: motivators for backsourcing, decision factors, and implementation success factors [7]. Of those three themes, backsourcing motivators, which trigger a company to question their current IT outsourcing strategy, are most frequently discussed. Examples for such motivators are expectation gaps (e.g., higher costs or lower quality) and internal or external organizational changes [13; 70; 72; 93; 99; 109]. If the presence of backsourcing motivators has initiated a decision process whether to stay in an existing outsourcing setting, decision factors, the second theme, can influence the outcome of this decision [7]. Decision factors can either support a decision to backsource the IT services in scope (enablers), or alternatively to continue an outsourcing of the services with an existing or a new vendor (barriers). Enablers could be, for example, the availability of internal IT capabilities [11; 108] or an organizational crisis to break a lock-in situation [62; 104]. In contrast, barriers for backsourcing could be IT knowledge and resource gaps [5; 36] or high switching costs [62; 105]. Looking at the

third theme, the implementation success factors, [7] derived six main factors for companies to consider when backsourcing IT services, e.g., thorough project management [13; 16], an employee (re-)hiring strategy [13; 99], or proper knowledge transfer back to the mother company [18; 30; 73].

Most of the cited publications have examined past backsourcing cases to better understand the backsourcing phenomenon and to derive the discussed motivators, decision factors, and implementation success factors (e.g., [70; 72; 93; 99]. In contrast, some researchers followed an alternative research approach and conducted quantitative studies. For example, [106] carried out a survey among executives to empirically test the effect of different factors, for example service quality and switching costs, on a decision to backsource or switch vendors. Similarly, [36] empirically tested the influence of different risk factors during an IT outsourcing relationship on future sourcing decisions. Recently, [31] examined IT employees' intent to stay at a company during a backsourcing transition by looking at factors like job satisfaction and motivating language.

## Service Quality

In general, service quality is defined as the conformance to certain expectations by a client and can be measured by comparing client requirements with the actual service delivery [75]. Following [37], two dimensions of service quality can be differentiated, namely functional and technical quality. Functional service quality looks at the performance during the service delivery, for example, the vendor's empathy or responsiveness [76], whereas technical service quality evaluates the quality of the outcome of the delivered IT services [75], e.g., regarding the completeness, the reliability, or the technical performance [76]. Within the academic literature, different measuring scales have been developed to test service quality, for example SERVQUAL and SERVPERF, which were adapted to reflect the particularities of IT outsourcing relationships by several researchers [49].

The effect of service quality on a client's perception of the outsourcing relationship can also be viewed from a transaction cost theory (TCT) perspective. Thus, the presence of high service quality decreases the costs required for monitoring service levels [106]. Therefore, also the perceived overall transaction costs associated with the outsourcing contract are potentially lowered. If an outsourcing supplier would act opportunistically to the detriment of the client as projected by TCT, for example by not deploying the best personnel to the client's projects, service quality would decrease and thus increase transaction costs [106].

Previous research analyzing the influence of service quality has shown that customers' willingness to stay with an existing vendor is positively influenced by the presence of high service quality [110]. Further, high service quality delivered by the IT vendor has a positive impact on both trust and confidence from the client in an existing IT outsourcing relationship [29]. Consequently, we follow the argumentation by [19] and [106] that companies which are unsatisfied with the quality of a delivered service would rather consider to decide in favor of backsourcing the services in scope and propose the following hypothesis:

**H1:** Service quality is negatively associated with the decision for backsourcing.

## Relationship Quality

In the context of IT outsourcing, the quality of the relationship between client and vendor plays an important role towards achieving project success [38; 60], and can thus influence a decision to stay within an outsourcing setting or to backsource the services in scope [106]. Therefore, both client and vendor should invest into maintaining a well-functioning relationship to increase the overall outsourcing success [90]. How the quality of a relationship is perceived by the involved parties is influenced by different factors, for example, communication quality, trust, cultural similarity, or commitment [2; 53; 63; 71]. Within the existing academic literature, scales for measuring relationship quality have been developed, for example by [63] and [103].

Trust between client and vendor exists when both have confidence in the opponent's reliability and integrity [76]. Therefore, trust decreases the uncertainty present in an outsourcing relationship and can have a positive impact on its duration [63]. In addition to trust, relationship commitment also has an important effect on relationship quality. Relationship commitment can be defined as the desire to stay within an existing relationship over a long term and thus reflects the highest level of a connection between client and vendor within an IT outsourcing relationship [76]. Therefore, a company would rather refrain to terminate such a close relationship with its vendor and would likely even accept limitations in the general service quality [80]. Therefore, we hypothesize the following:

**H2:** Relationship quality is negatively associated with the decision for backsourcing.

## Switching Costs

Switching costs can be generally defined as relationship-specific investments between a client and its vendor [32]. In the context of IT outsourcing, companies can be locked into an existing outsourcing arrangement due to a high degree of asset or knowledge specificity unique to a specific outsourcing situation [36; 79]. During the outsourcing period, employees from the vendor will build up personal knowledge and skills which are often unique to a particular IT service of the client [86]. As this personal knowledge is not a commodity but specific to the relationship, there is no possibility to simply redevelop it internally or source it from a new vendor. Therefore, it increases switching costs and negatively impacts the willingness to backsource IT services. Additional switching costs can stem from a likely termination fee which has to be paid as a contractual penalty for an early termination of the outsourcing relationship [97]. In the context of IT sourcing, switching costs could be operationalized based on previous research from [105] and [54], for example as sunk investment costs, uncertainty costs of future IT operations, or information transfer and setup costs.

Previous research has shown that companies accept to stay in an outsourcing relationship despite a dissatisfaction with the delivered service if high switching costs are present [79; 106]. Similarly, [62] observed that companies felt captured within an IT outsourcing relationship, for example due to an entrenched organizational setup or missing internal capabilities. Thus, the examined companies refrained from terminating their existing outsourcing contracts although they were dissatisfied with the received services. A decision to backsource the respective IT projects was only taken at a point when a larger organizational crisis occurred at the examined companies, for example resulting from the failure of large outsourced IT projects [62]. This leads to the following hypothesis:

**H3:** Switching costs are negatively associated with the decision for backsourcing.

## Decision Maker's Preference for Internal IT

In addition to the three previously introduced factors taken from the existing body of literature, a prior study hinted that a fourth factor, the personal preference for an internal IT of a decision maker (e.g., the CIO or COO of a company) could potentially influence a backsourcing decision as well. During a recent series of semi-structured, qualitative interviews with various international IT sourcing experts who have supported both backsourcing decisions and the related transition phases, we observed that most experts stated the decision makers' preferences as a further reason to explain why companies had decided to backsource their IT delivery [8]. In the context of this paper, a decision maker's preference for internal IT is defined as the general belief that internal IT is preferable; independent of the respective service or outsourcing contract in scope of the decision [12]. Even though this newly introduced factor focuses on an individual and not an organization in total, we do not ignore the fact that sourcing decisions usually follow a defined process involving multiple stakeholders and decision criteria. However, it can be argued that the preferences of leading executives can influence the decision-making process within organizations and thus bias the organization to favor certain decisions [52; 74].

Within the existing literature on IT backsourcing, the influence of decision makers' personal preferences and motives has been discussed only to a very limited degree. During their examination of past backsourcing cases, [4] and also [68] observed some evidence of personal preferences of decision makers which then influenced the decision in favor of backsourcing. Overall, this topic however has found little attention in previous research [12]. Looking further on related academic literature discussing IT outsourcing decisions, researchers found evidence for the influence of a stakeholder's aim to promote a personal agenda on the outsourcing decision, e.g., to enhance her/his career or personal financial benefits [43]; [59]. Further, [51] concluded that IT outsourcing decisions were influenced by internal communications at a personal level of the respective decision maker and the influence from external media. Leaving the field of IT sourcing and looking more broadly into strategy process research, further evidence of the influence of personal preferences on the strategy making process can be found [52]. For example, strategists' cognition and their evaluation of certain strategic options can be influenced from previous work experience [35], intuition [69], or context characteristics [81].

Circulating back to the topic of IT backsourcing, the personal preference of a decision maker could stem, for example, from previous sourcing experiences [4]. Those experiences potentially bias decision makers in future sourcing decisions [68]. There are several possible root causes for a decision maker to prefer internal IT delivery. For example, s/he could have made negative experiences in previous IT outsourcing settings [4]. Alternatively, a decision maker's experiences with an internal IT department could have been mainly positive, thus leading to a general belief that insourcing is more beneficial for companies [8]. Another reason would be if an executive had already been involved in a successful

backsourcing transition and has thus reduced concerns regarding potential disruptions in the transition process or uncertainties about the results in the final insourcing state [8]. Additionally, external advisors like management consultants, journalist or also peers from other companies could influence the assessment of a decision maker towards preferring an internal IT delivery and thus a more subjective evaluation of the remaining factors in the proposed model. Lastly, organizational changes could lead to adjustments of the sourcing strategy, e.g., because of a perceived need to demonstrate change [68; 109]. The inclusion of preferences of individual executives on the outcome of a sourcing decision represents a novel aspect and extends previous IT backsourcing research focusing mainly on the organizational level, for example by [106].

In the case that a decision maker within the involved company or business unit has this strong belief that internal IT delivery is producing better results for a company, her/his individual perception of the three previously discussed factors of the research model could be influenced positively or negatively [100]. We reflect this in our research model by introducing a decision maker's preference for internal IT as a construct which interacts with the three other factors. Therefore, we assume an impact on the strength of the influence of these factors. We thus chose a moderator design, since the absence of a personal preference for an internal IT delivery was considered to be a condition for the other factors' influence rather than being causal [50; 57]. Thus, we hypothesized:

**H4:** A decision maker's preference for internal IT increases the effect of service quality on the backsourcing decision.

**H5:** A decision maker's preference for internal IT increases the effect of product quality on the backsourcing decision.

**H6:** A decision maker's preference for internal IT increases the effect of switching costs on the backsourcing decision.

# RESEARCH METHODOLOGY

## Research Approach

Our research was empirical, and we used an online survey to gather the necessary data to test our hypotheses. The unit of analysis of our study is a defined, individual IT service (e.g., application development, a helpdesk hotline, or data center services). The IT sourcing setup of this service was reviewed in a decision process where backsourcing was one potential option, however not necessarily the eventually chosen outcome.

## Construct Operationalization

After the theoretical conceptualization of the constructs in the previous section which served as basis for the construct conceptualization by aiming to provide clear and concise definitions of the constructs [65], this section introduces the operationalization of the research model. As the variables in our research model are latent and could thus not be measured directly, we developed a set of indicators to operationalize each construct. Wherever possible, we leveraged existing measurement scales from previous studies and adapted them if required. Especially for the first three constructs, namely service quality, relationship quality, and switching costs, existing reflective scales were used. Table 1 provides an overview of the measurement indicators and respective sources.

For the newly introduced construct *decision maker's preference for internal IT*, we developed a new measurement scale due to the absence of previous studies in this area and followed the recommended process by [65]. The focal construct has been developed following an inductive approach with subject matter experts during a series of semi-structured, qualitative interviews [8]. To the authors' knowledge, this construct has not been defined in prior research. The respective entity is the decision maker for the IT sourcing project, i.e., the individual who either decides or has a high degree of influence on the decision, for example in a structured decision process. The construct reports her/his personal preference for an internal IT delivery. Thus, it aims to capture her/his personal belief whether companies would be better off without outsourcing – independent from a concrete decision s/he has to make.

The construct is modeled as a unidimensional, formative construct. This setup was chosen since the belief that an internal IT is the right choice for a company can root in different causes, which are not necessarily all present simultaneously. Therefore, the applied indicators are not interchangeable and the meaning of the overall construct would be changed if one of the indicators defining the construct would be removed [78]. For example, a decision maker can favor internal IT delivery because of her/his good experiences with insourcing, without having made the experience of IT backsourcing by her-/himself. Others might prefer internal IT delivery since they made positive experiences with a backsourcing transition and the obtained results. Table 2 illustrates the indicators for the construct decision maker's preference for internal IT.

Table 1: Overview of Measurement Indicators from the Existing Literature

| Construct | Code | Indicator | Based on |
|---|---|---|---|
| **Service Quality [SQ]** | [SQ1] | The IT service provider kept promises on deadlines and due dates. | [49; 75; 76] |
| | [SQ2] | The IT service provider kept its records accurately. | |
| | [SQ3] | The IT service provider delivered prompt service. | |
| | [SQ4] | The IT service provider was always willing and available to help. | |
| | [SQ5] | The IT service provider instilled confidence during the delivery of the IT services. | |
| | [SQ6] | When there were problems, the IT service provider was reassuring and sympathetic. | |
| | [SQ7] | The IT service provider gave individual attention. | |
| | [SQ8] | The IT service provider understood what the needs and requirements were. | |
| | [SQ9] | The IT service provider usually met the defined SLAs (Service Level Agreements). | |
| | [SQ10] | The delivered IT service was easily accessible and usable. | |
| | [SQ11] | The delivered IT service was accurate. | |
| | [SQ12] | The delivered IT service was useful. | |
| **Relationship Quality [RQ]** | [RQ1] | The IT service provider was open and honest when problems occurred. | [63; 76; 102; 103] |
| | [RQ2] | The IT service provider helped the organization make critical decisions. | |
| | [RQ3] | The IT service provider was always willing to provide assistance. | |
| | [RQ4] | Members of the company felt somewhat emotionally bonded to the IT service provider during the IT outsourcing relationship. | |
| | [RQ5] | Members of the company would have liked to continue to work with the IT service provider in future projects because they liked to be associated with it and relate to it. | |
| | [RQ6] | Members of the company had strong loyalty towards the IT service provider. | |
| | [RQ7] | The company and the IT service provider easily understood one another's business rules and norms. | |
| | [RQ8] | The company's processes for problem solving, decision making, and communication were similar to those of the IT service provider. | |
| | [RQ9] | The IT service provider kept the company very well informed about what is going on. | |
| | [RQ10] | The IT service provider explained technical details in a meaningful way. | |
| | [RQ11] | The IT service provider did not hesitate to explain the pros and cons of decisions to be made. | |
| **Switching Costs [SWC]** | [SWC1] | The company expected to not be able to recover the initially invested costs. | [54; 101; 105] |
| | [SWC2] | The company expected that backsourcing would involve a significant investment in resources to create a new management system. | |
| | [SWC3] | The company expected to have difficulties in hiring good IT personnel. | |
| | [SWC4] | The company expected that it could not attract acceptable personnel to deliver the IT service. | |
| | [SWC5] | The company expected that the total length of time to establish a new IT team and to become productive would be extremely long. | |
| | [SWC6] | The company expected that the received IT service after backsourcing would be worse than the IT service received before backsourcing. | |
| | [SWC7] | The IT service provider granted the company particular privileges. | |
| | [SWC8] | The company expected that after terminating the IT outsourcing relationship certain benefits would not be retained. | |
| | [SWC9] | The company expected that it would require significant time to explain needs and processes to new employees. | |
| | [SWC10] | The company expected to devote significant resources (e.g., time, money) to find new IT personnel. | |

Table 2: Measurement Indicators for the Construct Decision Maker's Preference for Internal IT

| Construct | Code | Indicator | Based on |
|---|---|---|---|
| **Decision Maker's Preference for Internal IT [DMP]** | [DMP1] | The key decision maker (e.g., CIO, COO) had previous positive experience with backsourcing of IT services. | Own |
| | [DMP2] | The key decision maker (e.g., CIO, COO) had previous positive experience with internal delivery of IT services. | Own |
| | [DMP3] | The key decision maker (e.g., CIO, COO) had previous negative experience with outsourced IT services. | Own |
| | [DMP4] | External advisors (e.g., consultants, peers, journalists) influenced the key decision maker to favor a decision to backsource the IT services. | Own |

All indicators were measured using a seven point Likert-type scale [65]. The interval scales in the survey ranged from 1, fully disagree, to 7, fully agree. Within the questionnaire, we further provided the option to select "Don't know" if respondents were not able to assess one indicator. As the moderating construct decision maker's preference for internal IT is also measured using an interval scale, our research model will measure its continuous moderating effect [40]. Further, the two-stage approach was used to create the interaction term for the moderation effect since the construct is operationalized using a formative measurement model [40; 45]. This is also supported by [10], who compared different approaches for generating the interaction terms in moderation settings and concluded that the two-stage approach was the superior option for application in PLS-path models.

In addition to the introduced constructs that are an integral part of the research model, further information was collected regarding the sourcing situation and the expertise of the respondents. For example, the survey incorporated questions on the service type in scope for backsourcing, the result of the sourcing decision, and the respondent's involvement in the decision. The inclusion of those questions aimed to create a better understanding and can additionally serve as control variables. These questions were mostly designed with nominal scales.

We pre-tested the survey with selected academics from multiple universities and several IT practitioners to ensure content validity, comprehensibility, and quality and to assure that the items capture the whole breadth of the construct [25]. The feedback from the pre-test was positive, and only minor changes to the wording were necessary. Upon completion of those adaptions, the questionnaire was set in live mode and sent out.

## Data Collection

To test our hypotheses, we collected data by conducting an online survey amongst practitioners in the field of IT sourcing. The language of the entire survey was English. The survey addressed practitioners with experience in IT sourcing decisions, particularly those who had been involved in decisions where IT backsourcing was one of the potential options. Suitable respondents to participate in the survey could either be employed at the respective decision-making company, at the IT vendor, or at consulting companies involved in the decision process. The necessary experience was queried at the beginning of the survey to increase validity of the responses. To distribute the survey link to a large group of suitable respondents, we combined several dissemination channels. The main channel used to gather respondents were the two professional career networks LinkedIn and Xing. Using LinkedIn, which shows a more international coverage, we aimed to contact IT practitioners globally [95]. Xing, in addition, allowed us to contact respondents from German-speaking countries. In both networks, we searched for profiles matching the job titles "IT Project Manager", "IT Program Manager", or "IT Portfolio Manager" (or respective German equivalents like "IT Projektleiter"), and additionally for the keywords "insourcing" or/and "backsourcing". In LinkedIn, we contacted practitioners within the United States, United Kingdom, Canada, Australia, India, and Scandinavia, whereas we used Xing to cover Germany, Austria and Switzerland. This allowed us to achieve a large geographical coverage within our contacted participants. We thus used a convenience or opportunities sampling approach [98]. In total, we have contacted over 2000 potential respondents via both professional networks. Further, we leveraged the additional reach of existing practitioner discussion groups on both LinkedIn and Xing, in which we posted our call for support. Additionally, we cooperated with the *Outsourcing Verband*, one of the leading IT outsourcing networks in Europe with over 800 member companies. This allowed us to use their communication channels (e.g., newsletter, social media) to further circulate our call for support. Lastly, we also reached out directly to CIOs and CTOs of public

companies listed in the leading German stock indexes DAX, MDAX and SDAX via email and asked them either to answer the questionnaire directly or to redirect it in their organizations to the appropriate respondent.

The survey was launched in December 2018 and was online until beginning of April 2019, when we stopped the dissemination of the survey link. Overall, we received a total of 642 responses, of which 251 (39%) are complete responses. In the section discussing the data analysis and results, we will focus on this set of complete responses only. As we circulated the call for support through multiple channels, anonymously, and thus do not know the actual number of established contacts, we cannot determine a response rate. The rather high share of not completed, early-terminated responses (61%) reflects the fact that IT backsourcing, the focal area of the research at hand, is only a sub-area of IT sourcing. Also, it shows that our initial querying of the necessary experience of the respondents was appropriate and likely improved response validity.

# ANALYSIS AND RESULTS

## Preparation of the Dataset

After the data collection phase, we analyzed the set of complete responses by screening response times for the survey as well as by evaluating the descriptive statistics. Following recommendations by [40], we removed responses with a share of missing values above 15% (33, 13%). Similarly, we checked for respondents whose answers showed suspicious response patterns (e.g., straight lining) and removed another 16 (7%) responses. Further, we filtered and removed responses, which stated to have a very low experience with IT out-, in- and backsourcing (4, 2%). Lastly, we also checked for response time, and delete 4 (2%) responses with an abnormally fast answer time.

## Descriptive Statistics

Looking at the descriptive statistics of the 194 responses after completing the described steps, 132 (68%) of the respondents were employed at the affected company, 42 (22%) were consultants involved in the decision, and 20 (10%) employed at an IT vendor. Looking at the country of the affected company (i.e., the location of headquarter or relevant business unit), 30% of the sourcing decisions took place in Germany, 16% in the USA, 16% in Canada, 5% in the United Kingdom, and 34% in other countries including India, Switzerland, the Netherlands and Scandinavian countries. This matches the origin of the participants we contacted, and thus does not allow any conclusions on the relative distribution of backsourcing decisions globally. Also, looking at the time of the "second generation sourcing decision" [58], we observe that most decisions were taken in the last three years (37%), whereas 30% were taken in last 4-6 years and 33% before that time. Table 3 provides an overview of some of the descriptive statistics of the analyzed dataset.

Table 3: Descriptive Statistics

| **Category** | | | | | |
|---|---|---|---|---|---|
| **Affiliation** | 68% Employed at company | 22% Employed as consultant | 10% Employed at IT vendor | | |
| **Decision year** | 37% between 2016-2018 | 30% between 2013-2015 | 33% before 2013 | | |
| **Country** | 30% Germany | 16% USA | 16% Canada | 5% UK | 34% Other |

## Partial Least Squares Model Analysis

We tested the presented research model using PLS regression analysis. PLS structural equation modeling (PLS-SEM) is a method to examine complex relationships between latent variables which are operationalized with multiple indicators [33; 96]. It has gained importance over the last years and is frequently applied in various disciplines including information systems [41]. PLS-SEM accommodates both formative and reflective construct measurements, and works with small sample sizes, non-normal distributed data, and continuous moderators [20; 40; 67]. Thus, this technique is well suited for our rather exploratory approach, in which we aim to test extension to previously established theories, as for example covariance-based structural equation modeling (CB-SEM) [3; 33].

With our sample size of 194 responses after the correction for missing data or suspicious response patterns we were able to achieve a high level of statistical power [21]. The analysis was conducted using the broadly used SmartPLS software in release 3.2.8 [84]. We applied the path weighting scheme, set the maximum number of iterations to 2,000 and used pairwise deletion for missing

values. For the bootstrapping calculations, we used 5,000 subsamples and used the bias-corrected and accelerated (BCa) bootstrap method.

## Assessment of the Measurement Model

As a first stage in the evaluation of the results of our research, we assessed the measurement models. We followed the steps recommended by [41]. As most constructs are operationalized as reflective constructs, we first focused on the criteria for reflective indicators, and then looked at the formative indicators subsequently.

**Indicator loadings:** First, we examined the indicator loadings for each construct. Generally, it is recommended that loadings exceed 0.708 [41], however loadings between 0.400 and 0.708 are also acceptable if their elimination does not lead to an increase in the composite reliability [40]. Running the PLS algorithm in SmartPLS, we obtained mixed results for the indicators' factor loadings. Two had to be excluded due to their low indicator values: SWC1 and SWC7 showed loadings below 0.400. Further, we deleted SQ9, SQ10, SQ11, SQ12, RQ1, RQ3, RQ7, RQ9, RQ8, RQ11, SWC2, SWC7, and SWC8 as their loadings were between 0.400 and 0.708 and their elimination increased the composite reliability of the respective construct.

**Internal consistent reliability:** To assess the internal consistent reliability of our dataset, we analyzed the composite reliability, which is recommended to be at least above 0.60 in explanatory research, but rather between 0.70 and 0.90, and below 0.95 [41]. For our three reflective constructs, the values for composite reliability were well above the critical threshold and ranged between 0.876 (SWC) and 0.903 (SQ).

**Convergent validity:** Next, we looked at the convergent validity, which describes how well the measurement indicators correlate with their assumed construct. It is measured using the average variance extracted (AVE). An acceptable value for the AVE is 0.50 or higher, thus indicating that a construct would explain 50% or more of the variance of its indicators [41]. In our dataset, after the correction for indicators with low factor loadings, the AVE ranged between 0.538 (SQ) and 0.642 (RQ) and is therefore acceptable. Table 4 displays the results.

**Discriminant validity:** In a fourth step, we assessed the discriminant validity, which measures how much one construct is empirically distinct from the other constructs in a structural model [41]. To do so, we applied the heterotrait-monotrait (HTMT) ratio [47]. It is recommended that HTMT is below 0.90. This is the case for all the constructs tested within our dataset.

Table 4: Assessment of Convergent Validity

| Construct | Indicator | Loading | AVE |
|---|---|---|---|
| Service Quality | SQ1 | 0.728** | 0.538 |
| | SQ2 | 0.649** | |
| | SQ3 | 0.754** | |
| | SQ4 | 0.730** | |
| | SQ5 | 0.792*** | |
| | SQ6 | 0.764*** | |
| | SQ7 | 0.715*** | |
| | SQ8 | 0.708** | |
| Relationship Quality | RQ2 | 0.769*** | 0.642 |
| | RQ4 | 0.809*** | |
| | RQ5 | 0.877*** | |
| | RQ6 | 0.812*** | |
| | RQ10 | 0.650*** | |
| Switching Costs | SWC3 | 0.802*** | 0.587 |
| | SWC4 | 0.777*** | |
| | SWC5 | 0.775*** | |
| | SWC9 | 0.720*** | |
| | SWC10 | 0.737*** | |

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

**Formative constructs**: For the formative construct decision maker's preference for internal IT, we follow recommendations by [17] and [41]. As suggested, we first tested for potential multicollinearity issues. For this, we looked at the variance inflation factor (VIF) values, which should be below 5, or even better, below 3 [41]. In our dataset, VIF values are between 1.087 and 1.194, thus not indicating potential problems with collinearity. However, when looking at the statistical significance of the weights in a second step, we observed that all four indicators had non-significant p values ($p > 0.05$). As DMP1, DMP3, and DMP4 all showed a high share of missing values in the dataset, we decided to remove them from the model and only proceed with DMP2 ("positive experience with internal IT delivery"), which additionally had the lowest p-value of the four indicators. We decided for this approach despite a potential decrease in explanatory power using single item moderators [26; 40], as we did not want to drop the construct in total given it is supposed to represent the main contribution of this research.

## Assessment of the Structural Model

After completing the evaluation of the measurement model and the necessary adjustments to the research model, we shifted our focus towards the assessment of the structural model, again following recommendations by [41]. First, we checked for potential collinearity issues values within the reflective indicators. However, none of the indicators showed high VIF values, with all of them being below 3.

Then, we applied standard assessment criteria to our research model. It explained 12.5% of the variance in the main dependent variable backsourcing of IT services ($R^2 = 0.125$). Thus, the model only has a very small explanatory power. The values for Stone-Geisser $Q^2$ did exceed zero for the endogenous construct ($Q^2 = 0.046$). Figure 2 displays the PLS results for our research model.

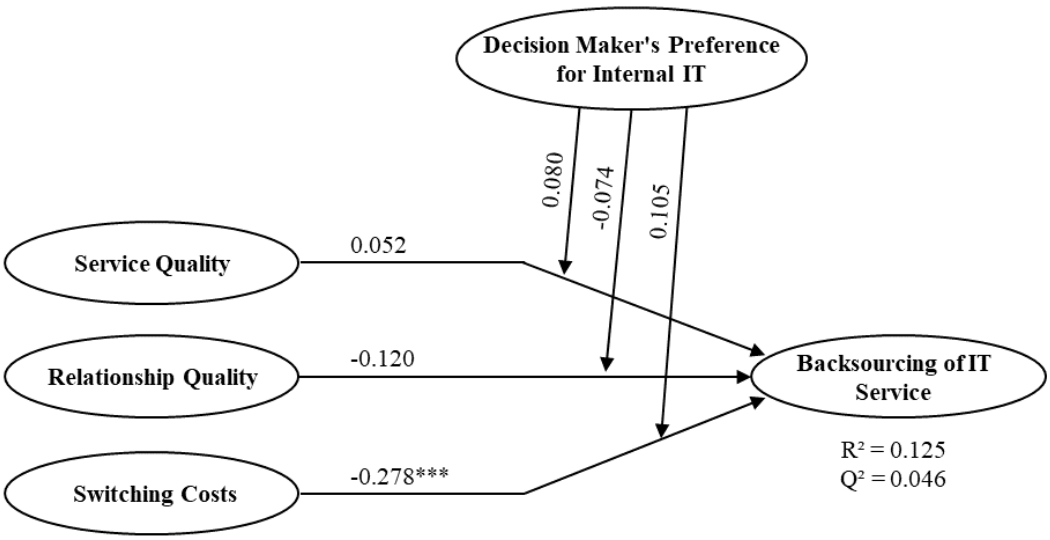


Figure 2: Results from the PLS Calculation

Looking at the path coefficients, only *switching costs* had a significant impact on *backsourcing of IT services* ($\beta = -0.278$; $p < 0.001$) and supported our hypothesis. The other path coefficients did not have a significant impact. For *service quality*, there is a positive path coefficient ($\beta = 0.052$; $p > 0.05$), thus not supporting H1. For *relationship quality*, there is a negative relationship with *backsourcing of IT services* as predicted by H2, however not on a significant level ($\beta = -0.120$; $p > 0.05$). Looking at the effect of the moderator *decision maker's preference for internal IT*, we must conclude that all three moderating effects tested in the research model are not significant, and the respective path coefficients and thus their impact is rather week. The moderating effect on *service quality* is positive ($\beta = 0.080$; $p > 0.05$), the effect on *relationship quality* negative ($\beta = -0.074$; $p > 0.05$), and on *switching costs* again positive ($\beta = 0.105$; $p > 0.05$).

Table 5: Structural Paths and Respective Effect Sizes

| Hypothesis | Path-ß | t-Value | $f^2$ | Support | Effect size |
|---|---|---|---|---|---|
| H1 Service quality (-) → backsourcing of IT service | 0.052 | 0.400 | 0.002 | No | - |
| H2 Relationship quality (-) → backsourcing of IT service | -0.120 | 1.221 | 0.008 | No | - |
| H3 Switching costs (-) → backsourcing of IT service | -0.278*** | 4.389 | 0.081 | Yes | Small |
| H4 Decision maker's preference (+) → effect of service quality | 0.080 | 0.786 | 0.003 | No | - |
| H5 Decision maker's preference (+) → effect of relationship quality | -0.074 | 0.745 | 0.004 | No | - |
| H6 Decision maker's preference (+) → effect of switching costs | 0.105 | 1.656 | 0.012 | No | - |

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Overall, our model thus did not fulfill the required standard quality criteria, e.g., regarding the path coefficients, explained variance or predicate validity. Thus, it did not allow us to draw any conclusions on the effect of a decision maker's preference. Potential reasons and implications will be presented in the subsequent discussion section of this paper.

## Correcting for Missing Values for Decision Maker's Preference for Internal IT

As the results using the full dataset were not applicable to confirm our hypotheses, we decided to conduct an additional analysis with a reduced dataset by removing responses with missing values for any of the four indicators of the construct decision maker's preference for internal IT. We decided for this approach as our research especially focuses on introducing the effect of personal preferences of decision makers as a new factor into the existing body of IT backsourcing literature. As we incorporated a "Don't know" option in our survey questionnaire to avoid low response validity based on missing knowledge, we received a rather high share of missing values for the relevant indicators (between 5% and 23%). This leads to a new data subset containing 125 responses.

We then followed the same steps discussed above to assess the measurement model. We deleted the following indicators due to low factor loadings: SQ2, SQ9, SQ10, SWC1, SWC2, SWC6, SWC7, SWC8. Regarding the internal consistent reliability, we observed that the composite reliability is well above 0.70, and still below 0.95 (SQ; 0.914; RQ: 0.900; SWC: 0.870). Third, we used the AVE again to assess the convergent validity. Here, the value for relationship quality is rather low (0.455); whereas the values for SQ and SWC are well over the threshold of 0.50. The results are displayed in Table 6. Lastly, we examined the HTMT ratio, which is again below 0.90 for all constructs.

Shifting the focus to the formative construct decision maker's preference for internal IT, we again checked for multicollinearity issues first. The VIF values for the formative indicators were all below 3. When assessing the statistical significance of the weights however in the second step, we concluded again the p-values for all four indicators were not significant ($p > 0.05$). Therefore, we cannot confirm more of the proposed hypotheses at this stage.

Table 6: Assessment of Convergent Validity within the Reduced Dataset

| Construct | Indicator | Loading | AVE |
|---|---|---|---|
| Service Quality | SQ1 | 0.823*** | 0.546 |
| | SQ3 | 0.814*** | |
| | SQ4 | 0.798*** | |
| | SQ5 | 0.807*** | |
| | SQ6 | 0.804*** | |
| | SQ7 | 0.714*** | |
| | SQ8 | 0.626** | |
| | SQ11 | 0.588* | |
| | SQ12 | 0.620* | |
| Relationship Quality | RQ1 | 0.546* | 0.455 |
| | RQ2 | 0.706** | |
| | RQ3 | 0.568** | |
| | RQ4 | 0.786** | |
| | RQ5 | 0.850*** | |
| | RQ6 | 0.779** | |
| | RQ7 | 0.615** | |
| | RQ8 | 0.646** | |
| | RQ9 | 0.523 | |
| | RQ10 | 0.666** | |
| | RQ11 | 0.581** | |
| Switching Costs | SWC2 | 0.509** | 0.533 |
| | SWC3 | 0.800*** | |
| | SWC4 | 0.874*** | |
| | SWC5 | 0.775*** | |
| | SWC9 | 0.680*** | |
| | SWC10 | 0.681*** | |

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

## Analyzing Decisions on Potential Backsourcing in Germany

Lastly, we additionally conducted the analysis only for decisions which took place in Germany, i.e. were carried out by within a German company or business unit headquartered in Germany. We selected Germany as country of origin as it represents the largest group within the dataset. Additionally, as this research was mainly conducted out of Germany, we could envisage that respondents from Germany filled out the survey more carefully. We have not filtered for missing values at the decision maker's preference for internal IT variable this time, leaving us with a dataset with 58 responses.

Again, we first assessed the reflective measurement model. We had to delete the following indicators due to low factor loadings: SQ8, SQ9, SQ11, RQ1, RQ3, RQ4, RQ5, RQ6, RQ7, RQ9, RQ11, SWC1, SWC2, SWC6, SWC7, SWC8, SWC9. The values for composite reliability are all above 0.70 and below 0.95 (SQ; 0.889; RQ: 0.828; SWC: 0.845), thus the check for internal consistent reliability is positive. We then utilized the AVE measure to evaluate convergent validity. This time, the value for service quality is rather low (0.476); whereas the respective values for both RQ and SWC are well over the threshold of 0.50. The results are displayed in Table 7. Lastly, we examined the HTMT ratio, which is again below 0.90 for all constructs.

We then continued with the assessment of the formative measurement model. First, we checked for multicollinearity issues. For the four formative indicators, the respective VIF values were all below 3. Next, we assessed the statistical significance of the weights. Again, we had to conclude that p-values for all four indicators were not significant ($p > 0.05$), however better than in the previous two calculations. Therefore, also with the dataset filtered for German companies only, we cannot confirm more of the proposed hypotheses at this stage.

Table 7: Assessment of Convergent Validity of Decisions in Germany

| Construct | Indicator | Loading | AVE |
|---|---|---|---|
| Service Quality | SQ1 | 0.724** | 0.476 |
| | SQ2 | 0.853** | |
| | SQ3 | 0.721** | |
| | SQ4 | 0.584* | |
| | SQ5 | 0.690** | |
| | SQ6 | 0.702** | |
| | SQ7 | 0.689** | |
| | SQ10 | 0.553* | |
| | SQ12 | 0.566 | |
| Relationship Quality | RQ2 | 0.851** | 0.618 |
| | RQ8 | 0.739* | |
| | RQ10 | 0.713* | |
| Switching Costs | SWC3 | 0.835*** | 0.580 |
| | SWC4 | 0.820*** | |
| | SWC5 | 0.706*** | |
| | SWC10 | 0.627*** | |

*** p < 0.001; ** p < 0.01; * p < 0.05

# DISCUSSION OF RESULTS

## Determinants of the Decision to Backsource IT Services

**Service quality, relationship quality, and switching costs:** Due to the low statistical significance of the majority of the effects, the results from the empirical testing of our research model are limited. First, looking at the results for the three factors taken from the existing body of literature, *switching costs* do have a significant negative effect on the decision to backsource (H3). This confirms prior findings, for example by [106], as the presence of switching costs restrains companies from backsourcing their IT services. Despite the effect not being statistically significant, it is worth noting that *service quality* has a positive path coefficient. This finding would indicate that companies that are satisfied with the service quality would favor to terminate the relationship and to backsource the IT services in scope. The path coefficient for *relationship quality* is negative as hypothesized (H2), however not at a significant level.

**Decision maker's preference for internal IT:** For our newly added factor, we did not receive any significant results supporting our hypothesis and the effect sizes were all comparably small. Thus, we were not able to generate reliable insights on the direction of the moderating effect or an indication of the strength of the effect based on the PLS analysis of our dataset. The effect of a *decision maker's preference for internal IT* on *service quality* and *switching costs* was slightly positive as proposed by H4 and H6, thus hinting a strengthening effect on the decision to backsource. The moderating effect on the *relationship quality* was slightly negative, thus not supporting H5. However, as these results are not significant, no conclusion can be drawn at this stage of our research.

## Potential Reasons for Non-Significant Results

Since the PLS analysis did not offer results with enough explanatory power to support our research hypothesis and to draw statistically significant implications for practitioners, we will discuss potential reasons and limitations leading to the presented, non-significant results.

**Respondent selection:** First, problems could stem from our approach to gather the required data. As we could not rely on an existing dataset to test our hypothesis, we followed the described approach and contacted practitioners within the field of IT sourcing via professional career networks. We aimed for a broad coverage of different regions (e.g., incl. Europe, USA, India), different types of employers (e.g., companies from different industries, consulting companies, IT vendors) and job descriptions (e.g., IT project managers, IT portfolio managers, IT consultants). We followed a convenience, or also called opportunistic sampling approach to contact a large number of potential respondents, as frequently used in similar research [98].

Applying this approach, we successfully achieved to gather a large dataset (642 total, 251 complete responses). This allowed us to empirically test our hypothesis, which has been done rather scarcely in previous IT backsourcing compared to the high number of case studies.

However, this approach probably also led to a low response validity and a rather large heterogeneity within the dataset, and ultimately then to results without enough explanatory power to confirm our research model. Despite a thorough review of the profiles of all contacted participants and testing for relevant expertise within the survey, potential respondents did not have the relevant knowledge to fully answer our questions. Another reason could be that respondents were not able or not willing to take the time required to fully re-think themselves into the situation around the sourcing decision to answer the questions correctly.

**Measurement scales:** A second potential reason might be rooted in the applied measurement scales. As mentioned before, we have adopted existing scales that were used in previous contributions on IT sourcing for the three factors service quality, relationship quality, and switching costs. In addition, we have pre-tested the measurement scales with academics and IT practitioners to ensure content validity and comprehensibility. However, we must recognize that, based on the overall results and the heterogeneity and dispersion of the answers for different indicators of the same construct, it is likely that the utilized measurement scales were not ideally suited for the application within our research. For example, it can be concluded that the term "service quality" might have confused people, despite a comprehensible explanation at the respective position in the survey questionnaire. We followed previous research and conceptualized "service quality" as the quality of the overall service delivery. However, practitioners might have misunderstood this and might have rather thought of it as looking at it from a rather "service"-oriented perspective, not considering the quality of the entire delivery. This would explain the fact that respondents did, in some instances, select high answers for the indicators measuring the service quality (e.g., 5 and 6 out of 7, with 7 being "fully agree") while at the same time selecting "dissatisfaction with IS service quality" as reason for backsourcing in the section of the survey with rather descriptive, qualitative questions. This finding would call for a more careful operationalization of the term "service quality" in future research, including the development of a better suited measurement scale which matches the perceptions of practitioners.

Looking at the newly developed measurement scale for the construct decision maker's preference for internal IT, we do not have evidence that the utilized scale could be a potential reason for the non-significant results. However, we could envision that the broad spectrum covered by the indicators, from negative outsourcing experience to influence from journalists, consultants or peers could have overstrained both awareness and experience from the respondents.

**Other reasons:** Besides the two mentioned reasons, there might be further reasons that we have not been able to confirm our hypothesis based on the gathered dataset. For example, there might be a bias in the response for the decision maker's preference, as decision makers answering our survey might not have answered the respective questions truthfully to not admit that they have prioritized personal preference over firm benefits. At the same time, other respondents might not have had relevant insights into the decision process to correctly answer the questions. Also, there might have been a response bias within the contacted participants, for example, that participants with negative experiences were not willing to participate or experienced candidates were too occupied to support our research. This might have further biased the underlying dataset and thus results.

## Potential Issues and Discussions on PLS-SEM

Besides discussing potential issues with the underlying dataset, respondents, and measurements scales as reasons for non-significant results of our analysis, we also consider it appropriate to discuss both potential limitations regarding the use of PLS-SEM in our context and general criticism and recent methodological advancements.

**Criticism regarding the application of PLS-SEM:** Despite the fact that PLS-SEM is widely used in various academic disciplines [41], there are also frequent discussions and criticism towards its application as a method for path modeling (e.g., [64; 66; 77; 82]. One argument which is frequently used is the lack of justification for the application of PLS-SEM, e.g., in comparison with other methods like CB-SEM [83]. Poor justification of the application of PLS-SEM might lead to doubt or skepticism from other researchers [77]. Further, one often cited argument for the application of PLS-SEM is the comparably small required sample size [41]. However, this can also lead to too small sample sizes, for which PLS-SEM is not suitable anymore. This reduces the robustness of results obtained with PLS-SEM [34]. An additional point of criticism is the fact with the easy to use software available for applying PLS-SEM, little statistical knowledge is required [3]. This facilitates the calculation and reporting of results, even if the model is, for example, incorrectly specified [77].

**Unobserved heterogeneity and PLS-SEM:** The presence of unobserved heterogeneity when applying PLS-SEM can be a substantial threat to the validity of the analysis [9; 42]. For example, when two groups with equal size exist in the dataset, potential differences between the groups would rather stem from latent classes in the data and not from an observable characteristic tested in the analysis [88]. This topic was rather neglected by previous researchers using PLS-SEM and also in guidelines discussing PLS analysis for a long time [42; 46], thus ignoring potential biases from unobserved heterogeneity. However, researchers applying PLS-SEM are recommended to analyze if unobserved heterogeneity has an impact on the obtained results [9]. For example, researchers can follow the procedure introduced by [89], which builds on the finite mixture (FIMIX)-PLS method developed by [39]. Another approach to unveil potential issues with unobserved heterogeneity, prediction-oriented segmentation (POS)-PLS, was introduced by [9]. Both FIMIX-PLS and POS-PLS are integrated in SmartPLS 3, and were applied within this research to test for unobserved heterogeneity.

**Methodological advancements:** In addition to the call towards an increased consideration of potential unobserved heterogeneity when using PLS-SEM, there are further methodological developments worth mentioning. For example, in 2015 [27] introduced an extension of PLS, the consistent PLS (PLSc) algorithm. The intention behind this extension was to correct for inconsistency issues in the cases that the common factor model holds for the theoretical construct [28], especially for reflective constructs [87]. However, there is an ongoing discussion amongst academics whether the application of PLSc is beneficial, especially compared to an alternative application of CB-SEM [42]. As our model contains a construct which was operationalized as a formative construct, we did not apply the PLSc algorithm but rather the PLS algorithm as recommended by [40] and [87]. [55] propose a further extension, the so-called regularized PLSc, to correct for potential multicollinearity issues connected to PLSc. They successfully showed that in the case of high multicollinearity, the combination of PLSc with a ridge-type regularization approach leads to better results. Additionally, [92] introduced the ordinal consistent partial least squares (OrdPLSc), a new variance-based estimator aiming to capture the benefits of PLSc and ordinal partial least squares (OrdPLS). Originally, OrdPLS was developed to estimate factor models which are operationalized with categorial indicators, and OrdPLSc aims to enhance it to be able to consistently estimate common factor models as the PLSc algorithm [91].

A further example of a methodological advancement in the PLS area is the quantile composite-based path modeling (QC-PM) by [24]. The goal of QC-PM is to explore the entire dependence structure by analyzing if and how relationships between observed and latent variables change based on the quantile of interest [23]. QC-PM aims to complement PLS-SEM if the average effects are insufficient to explain the relationships between the variables [24].

Looking at the increase in academic publications using PLS-SEM across different research disciplines and the ongoing methodological advancements, we expect proficient application of PLS-SEM to unfold even further.

# CONCLUSIONS

Due to the high share of non-significant results, the contributions arising from this paper are limited. However, we can confirm previous research suggesting a clear focus on achieving low switching costs, e.g., already during the design of the outsourcing contract and later during the outsourcing relationship. This would avoid switching costs from impeding a backsourcing decision, although it would otherwise be beneficial for the company. Looking at the managerial implications behind this finding, we see this as especially relevant given the high strategic value that the IT function is gaining within various industries. Companies should not be tempted to remain in a situation where the IT support for their business units is unsatisfactory, and potentially worse than at their competitors, to not lose a highly relevant competitive advantage.

Additionally, we have presented a theoretical argumentation why and how a decision maker's preference could influence IT backsourcing decisions. This extends the main reasons for backsourcing discussed in previous research and suggests additional insights into the mechanisms during a backsourcing decision process. Especially, it provides an outlook on the influence from subjective opinions from executives onto the outcome of the decision. Even though we were not able to confirm our hypothesis with the collected dataset, we still argue that the influence of individual preference on IT sourcing decisions is somewhat underrepresented in current research and should be further investigated.

Further, we observe that we were not able to replicate established results from previous research by [106], who were able to show that all three constructs service quality, relationship quality and switching costs had a significant effect on the backsourcing decision. As our research model and approach differs in some respects from their research setup, e.g., the geographical coverage, the background of participants, and the indicator

selection, our discussed study cannot be seen as a mere replication study. However, given the increasing discussion about the value of replication studies we consider this an interesting finding, which could lead to the conclusion that the importance of different factors on backsourcing decisions has changed over the last decade.

Based on the limitations presented in the discussion section, we see several possibilities for future research on our topic. One option would be to test the proposed research model in a case study approach, thus looking for employees of a company which has backsourced their IT, and who would be willing to provide further insights into the decision process in interviews. This would allow a testing of the introduced research model and especially the effect of the newly introduced effect of a decision maker's personal preference within a specific context without the disadvantage of a repeated, extensive data-collection phase. Alternatively, we see the potential of adapting the applied measurement scales to reflect the discussed limitations. For example, a new measurement scale to assess the satisfaction with a delivered service as a whole could constitute a relevant contribution to the existing body of literature.

# REFERENCES


[1] Akoka, J. and Comyn-Wattiau, I. "Developing a Framework for Analyzing IS/IT Backsourcing," Proceedings of the *AIM'06 11eme Congrès de l'Association Information et Management, Luxembourg,* January 2006, pp. 330–340.

[2] Anderson, J.C. and Narus, J.A. "A Model of Distributor Firm and Manufacturer Firm Working Partnerships," *Journal of Marketing*, Volume 54, Number 1, 1990, pp. 42–58.

[3] Astrachan, C.B., Patel, V.K. and Wanzenried, G. "A Comparative Study of CB-SEM and PLS-SEM for Theory Development in Family Firm Research," *Journal of Family Business Strategy*, Volume 5, Number 1, 2014, pp. 116–128.

[4] Barney, H.T., Low, G.C. and Aurum, A. "The Morning After: What Happens When Outsourcing Relationships End?," in: G.A. Papadopoulos, W. Wojtkowski, G. Wojtkowski, S. Wrycza and J. Zupancic (eds.), *Information Systems Development: Towards a Service Provision Society*, Springer US, Boston, 2010, pp. 637–644.

[5] Barney, H.T., Moe, N.B., Low, G.C. and Aurum, A. "Indian Intimacy Ends as the Chinese Connection Commences: Changing Offshore Relationships," Proceedings of the *Third Global Sourcing Workshop*, Keystone, CO, 22-25 March 2009, pp. 1–24.

[6] Bary, B.v. "How to Bring IT Home: Developing a Common Terminology to Compare Cases of IS Backsourcing," Proceedings of the *24th Americas Conference of Information Systems*, New Orleans, USA, August 16-18 2018.

[7] Bary, B.v. and Westner, M. "Information Systems Backsourcing: A Literature Review," *Journal of Information Technology Management*, XXIX, Number 1, 2018, 62-78.

[8] Bary, B.v., Westner, M. and Strahringer, S. "Adding Experts' Perceptions to Complement Existing Research on Information Systems Backsourcing," *International Journal of Information Systems and Project Management*, Volume 6, Number 4, 2018, 17-35.

[9] Becker, J.-M., Rai, A., Ringle, C.M. and Völckner, F. "Discovering Unobserved Heterogeneity in Structural Equation Models to Avert Validity Threats," *MIS Quarterly*, Volume 37, Number 3, 2013, pp. 665–694.

[10] Becker, J.-M., Ringle, C.M. and Sarstedt, M. "Estimating Moderating Effects in PLS-SEM and PLSc-SEM: Interaction Term Generation*Data Treatment," *Journal of Applied Structural Equation Modeling*, Volume 2, Number 2, 2018, pp. 1–21.

[11] Benaroch, M., Webster, S. and Kazaz, B. "Impact of Sourcing Flexibility on the Outsourcing of Services under Demand Uncertainty," *European Journal of Operational Research*, Volume 219, Number 2, 2012, pp. 272–283.

[12] Benedikt von Bary "What Makes Companies Backsource IT Services? Exploring the Influence of Decision Makers' Preferences," Proceedings of the *25th Americas Conference of Information Systems*, Cancun, Mexico, August 15-17 2019.

[13] Bhagwatwar, A., Hackney, R. and Desouza, K.C. "Considerations for Information Systems "Backsourcing": A Framework for Knowledge Re-Integration," *Information Systems Management*, Volume 28, Number 2, 2011, pp. 165–173.

[14] Bommadevara, N., Del Miglio, A. and Jansen, S. "Cloud Adoption to Accelerate IT Modernization," https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/cloud-adoption-to-accelerate-it-modernization, 2018.

[15] Bughin, J. and van Zeebroeck, N. "The Best Response to Digital Disruption," *MIT Sloan Management Review*, Volume 58, Number 4, 2017, pp. 80–86.

[16] Butler, N., Slack, F. and Walton, J. "IS/IT Backsourcing - A Case of Outsourcing in

Reverse?," Proceedings of the *44th Hawaii International Conference on System Sciences*, Kauai, HI, USA, January 4-7, 2011, pp. 1–10.

[17] Cenfetelli, R.T. and Bassellier, G. "Interpretation of Formative Measurement in Information Systems Research," *MIS Quarterly*, Volume 33, Number 4, 2009, p. 689.

[18] Cha, H.S., Pingry, D.E. and Thatcher, M.E. "Managing the Knowledge Supply Chain: An Organizational Learning Model of Information Technology Outsourcing," *MIS Quarterly*, Volume 32, Number 2, 2008, pp. 281–306.

[19] Chakrabarty, S., Whitten, D. and Green, K. "Understanding Service Quality and Relationship Quality in is Outsourcing: Client Orientation & Promotion, Project Management Effectiveness, and the Task-Technology-Structure Fit," *Journal of Computer Information Systems*, Volume 48, Number 2, 2008, pp. 1–15.

[20] Chin, W. "The Partial Least Squares Approach to Structural Equation Modeling," in: G.A. Marcoulides (ed.), *Methodology for Business and Management. Modern Methods for Business Research*, Lawrence Erlbaum Associates Publishers, Mahwah, NJ, US, 1998, pp. 295–336.

[21] Cohen, J. "Statistical Power Analysis," *Current Directions in Psychological Science*, Volume 1, Number 3, 1992, pp. 98–101.

[22] Daub, M. and Wiesinger, A. "Acquiring the Capabilities You Need to Go Digital," https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/acquiring-the-capabilities-you-need-to-go-digital, Mar 2015.

[23] Davino, C., Dolce, P. and Taralli, S. "Quantile Composite-Based Model: A Recent Advance in PLS-PM," in: H. Latan and R. Noonan (eds.), *Partial Least Squares Path Modeling. Basic Concepts, Methodological Issues and Applications*, Springer International Publishing; Imprint: Springer, Cham, 2017, pp. 81–108.

[24] Davino, C. and Vinzi, V.E. "Quantile composite-based path modeling," *Advances in Data Analysis and Classification*, Volume 10, Number 4, 2016, pp. 491–520.

[25] Diamantopoulos, A., Riefler, P. and Roth, K.P. "Advancing Formative Measurement Models," *Journal of Business Research*, Volume 61, Number 12, 2008, pp. 1203–1218.

[26] Diamantopoulos, A., Sarstedt, M., Fuchs, C., Wilczynski, P. and Kaiser, S. "Guidelines for Choosing Between Multi-Item and Single-Item Scales for Construct Measurement: A Predictive Validity Perspective," *Journal of the Academy of Marketing Science*, Volume 40, Number 3, 2012, pp. 434–449.

[27] Dijkstra, T.K. and Henseler, J. "Consistent and Asymptotically Normal PLS Estimators for Linear Structural Equations," *Computational Statistics & Data Analysis*, Volume 81, 2015, pp. 10–23.

[28] Dijkstra, T.K. and Henseler, J. "Consistent Partial Least Squares Path Modeling," *MIS Quarterly*, Volume 39, Number 2, 2015, pp. 297–316.

[29] Eisingerich, A.B. and Bell, S.J. "Perceived Service Quality and Customer Trust," *Journal of Service Research*, Volume 10, Number 3, 2008, pp. 256–268.

[30] Ejodame, K. and Oshri, I. "Understanding Knowledge Re-Integration in Backsourcing," *Journal of Information Technology*, 2017, pp. 1–15.

[31] Farr, L. and Lind, M. "Motivating Language and Intent to Stay in a Backsourced Information Technology Environment," *Journal of Global Information Management*, Volume 27, Number 3, 2019, pp. 1–18.

[32] Farrell, J. and Shapiro, C. "Dynamic Competition with Switching Costs," *The RAND Journal of Economics*, Volume 19, Number 1, 1988, pp. 123–137.

[33] Gefen, D., Rigdon, E. and Straub, D. "Editor's Comments: An Update and Extension to SEM Guidelines for Administrative and Social Science Research," *MIS Quarterly*, Volume 35, Number 2, 2011, iii.

[34] Goodhue, D.L., Lewis, W. and Thompson, R. "Does PLS have Advantages for Small Sample Size or Non-Normal Data?," *MIS Quarterly*, Volume 36, Number 3, 2012, pp. 981–1001.

[35] Goodwin, V.L. and Ziegler, L. "A Test of Relationships in a Model of Organizational Cognitive Complexity," *Journal of Organizational Behavior*, Volume 19, Number 4, 1998, pp. 371–386.

[36] Gorla, N. and Lau, M.B. "Will Negative Experiences Impact Future IT Outsourcing?," *Journal of Computer Information Systems*, Volume 50, Number 3, 2010, pp. 91–101.

[37] Grönroos, C. "A Service Quality Model and its Marketing Implications," *European Journal of Marketing*, Volume 18, Number 4, 1984, pp. 36–44.

[38] Grover, V., Cheon, M.J. and Teng, J.T.C. "The Effect of Service Quality and Partnership on the Outsourcing of Information Systems Functions," *Journal of Management Information Systems*, Volume 12, Number 4, 1996, pp. 89–116.

[39] Hahn, C., Johnson, M., Herrmann, A. and Huber, F. "Capturing Customer Heterogeneity Using a Finite Mixture PLS Approach," *Schmalenbach Business Review*,, Volume 54, 2002, pp. 243–269.

[40] Hair, J.F., Hult, G.T.M., Ringle, C. and Sarstedt, M., *A Primer on Partial Least Squares Structural Equation Modeling*, Sage, Los Angeles. 2017.

[41] Hair, J.F., Risher, J.J., Sarstedt, M., Ringle, C.M. and Svensson, G. "When to Use and How to Report the Results of PLS-SEM," *European Business Review*, Volume 31, Number 1, 2019, pp. 2–24.

[42] Hair, J.F., Sarstedt, M. and Ringle, C.M. "Rethinking some of the Rethinking of Partial Least Squares," *European Journal of Marketing*, Volume 53, Number 4, 2019, pp. 566–584.

[43] Hall, J.A. "Financial Performance, CEO Compensation, and Large-Scale Information Technology Outsourcing Decisions," *Journal of Management Information Systems*, Volume 22, Number 1, 2005, pp. 193–221.

[44] Heltzel, P. "9 Forces Shaping the Future of IT," http://www.cio.com/article/3206770, Jul 2017.

[45] Henseler, J. and Chin, W.W. "A Comparison of Approaches for the Analysis of Interaction Effects Between Latent Variables Using Partial Least Squares Path Modeling," *Structural Equation Modeling: A Multidisciplinary Journal*, Volume 17, Number 1, 2010, pp. 82–109.

[46] Henseler, J., Hubona, G. and Ray, P.A. "Using PLS Path Modeling in New Technology Research: Updated Guidelines," *Industrial Management & Data Systems*, Volume 116, Number 1, 2016, pp. 2–20.

[47] Henseler, J., Ringle, C.M. and Sarstedt, M. "A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling," *Journal of the Academy of Marketing Science*, Volume 43, Number 1, 2015, pp. 115–135.

[48] Hirschheim, R. and Lacity, M. "Backsourcing: An Emerging Trend?," http://www.outsourcing-center.com/1998-09-backsourcing-an-emerging-trend-article-38943.html, Sep 1998.

[49] Ho, C.-T. and Wei, C.-L. "Effects of Outsourced Service Providers' Experiences on Perceived Service Quality," *Industrial Management & Data Systems*, Volume 116, Number 8, 2016, pp. 1656–1677.

[50] Holmbeck, G.N. "Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures," *Journal of Consulting and Clinical Psychology*, Volume 65, Number 4, 1997, pp. 599–610.

[51] Hu, Q., Saunders, C. and Gebelt, M. "Research Report: Diffusion of Information Systems Outsourcing: A Reevaluation of Influence Sources," *Information Systems Research*, Volume 8, Number 3, 1997, pp. 288–301.

[52] Hutzschenreuter, T. and Kleindienst, I. "Strategy-Process Research: What Have We Learned and What Is Still to Be Explored," *Journal of Management*, Volume 32, Number 5, 2006, pp. 673–720.

[53] Jeong, J., Kurnia, S., Samson, D. and Cullen, S. "Enhancing the Application and Measurement of Relationship Quality in Future IT Outsourcing Studies," Proceedings of the *26th European Conference on Information Systems*, Portsmouth, United Kingdom, Jun 23-28 2018.

[54] Jones, M.A., Mothersbaugh, D.L. and Beatty, S.E. "Why Customers Stay: Measuring the Underlying Dimensions of Services Switching Costs and Managing their Differential Strategic Outcomes," *Journal of Business Research*, Volume 55, Number 6, 2002, pp. 441–450.

[55] Jung, S. and Park, J. "Consistent Partial Least Squares Path Modeling via Regularization," *Frontiers in Psychology*, Volume 9, 2018, p. 174.

[56] Könning, M., Westner, M. and Strahringer, S. "Multisourcing on the Rise: Results from an Analysis of more than 1,000 IT Outsourcing Deals in the ASG Region," Proceedings of the *Multikonferenz Wirtschaftsinformatik 2018*, Lüneburg, Germany, March 06-09, 2018, 1813-1824.

[57] Kraemer, H.C., Kiernan, M., Essex, M. and Kupfer, D.J. "How and Why Criteria Defining Moderators and Mediators Differ Between the Baron & Kenny and MacArthur Approaches," *Health Psychology*, Volume 27, 2, Suppl, 2008, 101-108.

[58] Lacity, M.C., Khan, S.A. and Yan, A. "A Review of the Empirical Business Services Sourcing Literature: An Update and Future Directions," *Journal of Information Technology*, Volume 31, Number 3, 2016, pp. 269–328.

[59] Lacity, M.C., Khan Shaji, Yan, A. and Willcocks, L.P. "A Review of the IT Outsourcing Empirical Literature and Future Research Directions," *Journal of Information Technology*, *Number* 25, 2010, pp. 395–433.

[60] Lacity, M.C. and Willcocks, L.P. "Relationships in IT Outsourcing: A Stakeholder Perspective," in: R.W. Zmud (ed.), *Framing the Domains of IT Management. Projecting the Future Through the Past*, Pinnaflex Educational Resources, Inc, Cincinnati, OH, 2000, pp. 355–384.

[61] Lacity, M.C., Willcocks, L.P. and Feeny, D.F. "The Value of Selective IT Sourcing," *Sloan Management Review*, Volume 37, Number 3, 1996, pp. 13–25.

[62] Law, F. "Breaking the Outsourcing Path: Backsourcing Process and Outsourcing Lock-in," *European Management Journal*, Volume 36, Number 3, 2018, pp. 341–352.

[63] Lee, J.-N. and Kim, Y.-G. "Effect of Partnership Quality on IS Outsourcing Success: Conceptual Framework and Empirical Validation," *Journal of Management Information Systems*, Volume 15, Number 4, 1999, pp. 29–61.

[64] Lu, I.R.R., Kwan, E., Thomas, D.R. and Cedzynski, M. "Two new methods for estimating structural equation models: An illustration and a comparison with two established methods," *International Journal of Research in Marketing*, Volume 28, Number 3, 2011, pp. 258–268.

[65] MacKenzie, S.B., Podsakoff, P.M. and Podsakoff, N.P. "Construct Measurement and Validation Procedures in MIS and Behavioral Research: Integrating New and Existing Techniques," *MIS Quarterly*, Volume 35, Number 2, 2011, p. 293.

[66] Marcoulides, G.A. and Saunders, C.S. "Editor's Comments: PLS: A Silver Bullet?," *MIS Quarterly*, Volume 30, Number 2, 2006, iii.

[67] Matthews, L., Hair, J. and Matthews, R. "PLS-SEM: The Holy Grail for Advanced Analysis," *Marketing Management Journal*, Volume 28, Number 1, 2018, pp. 1–13.

[68] McLaughlin, D. and Peppard, J. "IT Backsourcing: From 'Make or Buy' to 'Bringing it Back in-House'," Proceedings of the *14th European Conference on Information Systems*, Gothenburg, Sweden, June 12-14, 2006, pp. 1–12.

[69] Miller, C.C. and Ireland, R.D. "Intuition in Strategic Decision Making: Friend or Foe in the Fast-Paced 21st Century?," *Academy of Management Perspectives*, Volume 19, Number 1, 2005, pp. 19–30.

[70] Moe, N.B., Šmite, D., Hanssen, G.K. and Barney, H. "From Offshore Outsourcing to Insourcing and Partnerships: Four Failed Outsourcing Attempts," *Empirical Software Engineering*, Volume 19, Number 5, 2014, pp. 1225–1258.

[71] Morgan, R.M. and Hunt, S.D. "The Commitment-Trust Theory of Relationship Marketing," *Journal of Marketing*, Volume 58, Number 3, 1994, pp. 20–38.

[72] Nicholas-Donald, A. and Osei-Bryson, K.-M.A. "The Economic Value of Back-sourcing: An Event Study," Proceedings of the *10th International Conference on Information Resources Management*, Santiago, Chile, May 17-19, 2017, pp. 1–8.

[73] Nujen, B., Halse, L. and Solli-Saether, H. "Backsourcing and Knowledge Re-Integration: A Case Study," Proceedings of the *IFIP International Conference on Advances in Production Management Systems (APMS)*, Sophia Antipolis, France, June 29 - July 3, 2015, pp. 191–198.

[74] Papadakis, V.M., Lioukas, S. and Chambers, D. "Strategic Decision-Making Processes: the Role of Management and Context," *Strategic Management Journal*, Volume 19, Number 2, 1998, pp. 115–147.

[75] Parasuraman, A., Zeithaml, V.A. and Berry, L.L. "SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality," *Journal of Retailing*, Volume 64, Number 1, 1988, pp. 12–40.

[76] Park, J., Lee, J., Lee, H. and Truex, D. "Exploring the Impact of Communication Effectiveness on Service Quality, Trust and Relationship Commitment in IT Services," *International Journal of Information Management*, Volume 32, Number 5, 2012, pp. 459–468.

[77] Petter, S. "'Haters Gonna Hate': PLS and Information Systems Research," *SIGMIS Database*, Volume 49, Number 1, 2018, pp. 10–13.

[78] Petter, S., Straub, D. and Rai, A. "Specifying Formative Constructs in Information Systems Research," *MIS Quarterly*, Volume 31, Number 4, 2007, pp. 623–656.

[79] Peukert, C. "Determinants and Heterogeneity of Switching Costs in IT Outsourcing: Estimates from Firm-Level Data," *European Journal of Information Systems*, Volume 42, Number 3, 2018, pp. 1–27.

[80] Rajamani, N., Mani, D., Mehta, S. and Chebiyyam, M. "Quality, Satisfaction and Value in Outsourcing: Role of Relationship Dynamics and Proactive Management," Proceedings of the *31st International Conference on Information Systems 2010*, Saint Louis, USA, Dec 15-18 2010.

[81] Reger, R.K. and Huff, A.S. "Strategic Groups: A Cognitive Perspective," *Strategic Management Journal*, Volume 14, Number 2, 1993, pp. 103–123.

[82] Richter, N.F., Sinkovics, R.R., Ringle, C.M. and Schlägel, C. "A Critical Look at the Use of SEM in International Business Research," *International Marketing Review*, Volume 33, Number 3, 2016, pp. 376–404.

[83] Ringle, C.M., Sarstedt, M. and Straub, D. "A Critical Look at the Use of PLS-SEM in MIS

Quarterly," *MIS Quarterly*, Volume 36, Number 1, 2012, pp. iii–xiv.

[84] Ringle, C.M., Wende, S. and Becker, J.-M., *SmartPLS 3*, SmartPLS, Bönningstedt. 2015.

[85] Rounds, M. "Modernizing IT: Out with the Old, in with the Cloud," in: *State of the CIO 2019*, pp. 22–23.

[86] Salge, C. "Pulling the Outside in: A Transactional Cost Perspective on IT Insourcing," Proceedings of the *21th Americas Conference on Information Systems*, Puerto Rico, August 13-15 2015.

[87] Sarstedt, M., Hair, J.F., Ringle, C.M., Thiele, K.O. and Gudergan, S.P. "Estimation Issues with PLS and CBSEM: Where the Bias Lies!," *Journal of Business Research*, Volume 69, Number 10, 2016, pp. 3998–4010.

[88] Sarstedt, M. and Ringle, C. "Erfassung Unbeobachteter Heterogenität in Varianzbasierter Strukturgleichungsmodellierung mit FIMIX-PLS," in: M. Schwaiger and A. Meyer (eds.), *Theorien und Methoden der Betriebswirtschaft. Handbuch für Wissenschaftler und Studierende*, Vahlen, München, 2009, pp. 603–627.

[89] Sarstedt, M., Ringle, C.M. and Hair, J.F. "Treating Unobserved Heterogeneity in PLS-SEM: A Multi-Method Approach," in: H. Latan and R. Noonan (eds.), *Partial Least Squares Path Modeling. Basic Concepts, Methodological Issues and Applications*, Springer International Publishing; Imprint: Springer, Cham, 2017, pp. 197–217.

[90] Schroiff, A., Beimborn, D. and Brix, A. "The Role of Interaction Structures for Client Satisfaction in Application Service Provision Relationships," Proceedings of the *19th European Conference on Information Systems*, Helsinki, Finland, June 9-11 2011.

[91] Schuberth, F. and Cantaluppi, G. "Ordinal Consistent Partial Least Squares," in: H. Latan and R. Noonan (eds.), *Partial Least Squares Path Modeling. Basic Concepts, Methodological Issues and Applications*, Springer International Publishing; Imprint: Springer, Cham, 2017, pp. 109–150.

[92] Schuberth, F., Henseler, J. and Dijkstra, T.K. "Partial least squares path modeling using ordinal categorical indicators," *Quality & Quantity*, Volume 52, Number 1, 2018, pp. 9–35.

[93] Solli-Saether, H. and Gottschalk, P. "Stages of Growth in Outsourcing, Offshoring and Back-sourcing: Back to the Future?," *Journal of Computer Information Systems*, Volume 55, Number 2, 2015, pp. 88–94.

[94] Stackpole, B. "CIOs Get Strategic," in: *State of the CIO 2019*, pp. 12–21.

[95] Stettner, A. "Xing vs. LinkedIn: Welches Karriere-Netzwerk Brauche Ich?," https://www.merkur.de/leben/karriere/zr-8399154.html, Jun 2017.

[96] Tenenhaus, M., Vinzi, V.E., Chatelin, Y.-M. and Lauro, C. "PLS Path Modeling," *Computational Statistics & Data Analysis*, Volume 48, Number 1, 2005, pp. 159–205.

[97] Thakur-Wernz, P. "A Typology of Backsourcing: Short-Run Total Costs and Internal Capabilities for Re-Internalization," *Journal of Global Operations and Strategic Sourcing*, Volume 12, Number 1, 2019, pp. 42–61.

[98] Tyrer, S. and Heyman, B. "Sampling in Epidemiological Research: Issues, Hazards and Pitfalls," *BJPsych Bulletin*, Volume 40, Number 2, 2016, pp. 57–60.

[99] Veltri, N.F., Saunders, C.S. and Kavan, C.B. "Information Systems Backsourcing: Correcting Problems and Responding to Opportunities," *California Management Review*, Volume 51, Number 1, 2008, pp. 50–76.

[100] Webster, F.E. and Wind, Y. "A General Model for Understanding Organizational Buying Behavior," *Journal of Marketing*, Volume 36, Number 2, 1972, pp. 12–19.

[101] Weiss, A.M. and Anderson, E. "Converting from Independent to Employee Salesforces: The Role of Perceived Switching Costs," *Journal of Marketing Research*, Volume 29, Number 1, 1992, p. 101.

[102] Westner, M. "Antecedents of Success in IS Offshoring Projects - Proposal for an Empirical Research Study," Proceedings of the *17th European Conference on Information Systems*, Verona, Italy, June 8-10, 2009.

[103] Westner, M. and Strahringer, S. "Determinants of Success in IS Offshoring Projects: Results from an Empirical Study of German Companies," *Information & Management*, Volume 47, 5-6, 2010, pp. 291–299.

[104] Whitten, D. "Adaptability in IT Sourcing: The Impact of Switching Costs," Proceedings of the *15th Americas Conference on Information Systems 2009*, San Francisco, CA, USA, August 6-9, 2009, pp. 1–10.

[105] Whitten, D., Chakrabarty, S. and Wakefield, R. "The Strategic Choice to Continue Outsourcing, Switch Vendors, or Backsource: Do Switching Costs Matter?," *Information & Management*, Volume 47, Number 3, 2010, pp. 167–175.

[106] Whitten, D. and Leidner, D. "Bringing IT Back: An Analysis of the Decision to Backsource or Switch Vendors," *Decision Sciences*, Volume 37, Number 4, 2006, pp. 605–621.
[107] Wiener, M. and Saunders, C. "Forced Coopetition in IT Multi-Sourcing," *The Journal of Strategic Information Systems*, Volume 23, Number 3, 2014, pp. 210–225.
[108] Wong, S.F. "Bringing IT Back Home: Developing Capacity for Change," Proceedings of the *27th International Conference on Information Systems*, Milwaukee, Wisconsin, USA, December 10-13, 2006, pp. 591–608.
[109] Wong, S.F. "Drivers of IT Backsourcing Decision," *Communications of the IBIMA*, Volume 2, 2008, pp. 102–108.
[110] Zeithaml, V.A., Berry, L.L. and Parasuraman, A. "Communication and Control Processes in the Delivery of Service Quality," *Journal of Marketing*, Volume 52, Number 2, 1988, pp. 35–48.

# AUTHOR BIOGRAPHIES

**Benedikt von Bary** is a PhD candidate at TU Dresden, Germany. His research focuses on IT backsourcing in the context of strategic IT management. Previously, he worked as a management consultant for McKinsey & Company in their Munich Office, focusing on clients within the advanced industry sector around strategic and IT topics.

**Markus Westner** is Professor of IT Management at the Technical University of Applied Sciences Regensburg, Germany. He is the author of several journal articles and conference papers. His work focuses on IT strategy and IT sourcing. His research interests are in IT offshoring as well as the application of Lean Management methods to IT organizations. He acts as an Associate Editor for Information & Management. He acted as reviewer for numerous conferences and renowned journals. Before he started his academic career he worked as a management consultant in a project manager position for Bain & Company, one of the world's largest management consultancies, in their Munich office.

**Susanne Strahringer** is a professor of Business Information Systems, especially IT in Manufacturing and Commerce at TU Dresden (TUD), Germany. Before joining TUD, she held positions at the University of Augsburg and the European Business School. She graduated from Darmstadt University of Technology where she also obtained her PhD and completed her habilitation thesis. She has published in – amongst others – Information & Management, Journal of Information Technology Theory and Application, Information Systems Management, Journal of Information Systems Education. Her research interests focus on IT management, ERP systems, and enterprise modeling.