

Less Complex than Expected – What Really Drives IT Consulting Value

Severin Oesterle¹, Arne Buchwald², and Nils Urbach³

¹ FIM Research Center, University of Bayreuth, Bayreuth, Germany
severin.oesterle@fim-rc.de

² Center for Digital Transformation (CDT), EBS Business School, Wiesbaden, Germany
arne.buchwald@ebs.edu

³ FIM Research Center, University of Bayreuth, Project Group Business & Information Systems Engineering of Fraunhofer FIT, Bayreuth, Germany
nils.urbach@fim-rc.de

Abstract. Digitalization has a broad impact and the risk of external disruption is omnipresent throughout all industries which also applies to IT consulting firms. One response to this threat is to understand better the determinants of how value is created during the joint work on an IT project. Although previous literature offers valuable starting points for explaining value co-creation, no previous research synthesizes service provider and client perspective in a comprehensive model and empirically explains the co-creation of IT consulting service value. We build on the service-dominant (S-D) logic as the fundamental meta-theory and evaluate our deductively derived structural model based on 113 collected responses from IT consulting projects using structural equation modeling. Our major finding is that IT consulting service value only seems to be determined by consultant capabilities. Our findings provide new insights for S-D logic and service science literature and potential for future research.

Keywords: Value, Value Co-Creation, Service-Dominant Logic, Service Science, IT Consulting Services

1 Introduction

Digitalization has begun to change the rules of competition in many industries. The risk of disruption is omnipresent, and the digital transformation is on everyone's lips which is why organizations need to reconsider and to adjust their business models to remain competitive [1]. In this quest for digitalizing existing business models, creating new ones, or transforming existing services and processes, organizations often draw upon the knowledge of consultancies as external knowledge providers and transformation agents with specialized skills and resources to manage their digital transformation [2]. This way, organizations closely interact with IT consulting firms to achieve business value from such co-creations. In the same vein that regular organizations feel pressured to remain competitive, so do IT consulting firms [3]. While their fundamental business model has not changed for many decades, IT consulting firms are currently facing major

challenges. First, the IT consulting industry is strongly tied to the global economic situation, which means that in times of recession and resulting budget cuts at the clients' organizations, consulting assignments flatten out [2]. Second, IT consulting services are mostly labor intensive and require highly skilled and trained consultants. Particularly in the field of digitalization, IT consulting firms are in a 'war for talents'. Third, the billing model based on daily or hourly rates promotes overstaffed and protracted offerings which nowadays will be realized by clients through their increased experience with consulting offerings. Forth, the client organization's necessary shift to a more customer-centric view is also valid for consulting firms. The increasing experience of the clients with consulting services reinforces this major challenge once again [2]. Furthermore, the progress in digitalization paved the way for digital platforms (e.g., Comatch) in the consulting business that broker between supply (of highly qualified freelance consultants who formerly worked for large consultancies) and demand (organizations of different sizes requiring external advice). In addition, digital platforms offer organizations the opportunity to individually assemble their consulting team, so that the competition continues to increase [4].

To overcome the mentioned challenges, it is also for IT consultancies more essential than ever before to understand their customers' needs and IT literacy as well as to place the clients' requirement at the center of their activities and create value for them. Only a deeper understanding of which determinants drive the client's overall value enables ideal collaboration and co-creation settings and ultimately increases or at least maintains the IT consultancies' sales and profits and is beneficial to the client [2]. Therefore, both parties need to join their forces and individual capabilities. Surprisingly, empirical results on the underlying mechanisms between IT consulting firms' service provisions and client value are scarce. We connect to the research streams of service quality and customer satisfaction which is grounded in marketing literature and based on the distinction of technical and functional quality to measure customer satisfaction [e.g., 5, 6]. This research stream also includes approaches to measure service quality and satisfaction with the SERVQUAL instrument [7] and was adapted and used in information systems (IS) literature [e.g., 8, 9]. However, also the adapted IT-SERVQUAL instruments could not overcome the existing criticism [e.g., 10, 11].

The advent of the S-D logic can be considered as the most impacting shift in marketing and service science literature from a firm- and goods-centric to a customer-centric perspective [12-14]. Within the last years, research studies applied the S-D logic on various disciplines, e.g., service recovery [e.g., 15], service innovation [e.g., 16, 17-20], retailing [e.g., 21], tourism [e.g., 22], and IS [e.g., 23, 24-27]. Furthermore, S-D logic also impacted the service science research stream which is, in particular, relevant for us. The fundamental unit of analysis is service system, such as IT consulting service. Thus, we consider S-D logic as a meta-theory [25, 28] in which we theoretically ground our work, and we embed our work in service science.

We subsequently analyze existing quantitative-empirical studies in research streams which might be helpful for us. Although there are previous empirical IS studies applying SERVQUAL [e.g., 8, 9], they take an outdated firm- and goods-centricity and they focus on customer satisfaction (instead of value). Most literature on the meta-theory of S-D logic are conceptual contributions: First, the conceptual study of

Grönroos and Ojasalo [29] conceptually distinguish between customer-induced and provider-induced contributions to explain service productivity. While we second their suggestion that the service provider and the service recipient create the service in interaction, we disagree with their view that service productivity can be measured solely based on financial measures. Breidbach et al. [18] draw upon the S-D logic and investigate innovations in professional service firms, acknowledging a customer-centric perspective. Furthermore, Tallon [27] framed his study in a service science context and investigated the impact of business and IT strategy on firm performance. While both contributions provide valuable thoughts of value co-creation in a service system, their underlying objective differs.

The Work of Barrutia and Gilsanz [23] who examine electronic service quality and value in a business-to-consumer (B2C) e-commerce context inspired us. They state that “both consumer expertise and electronic service quality directly and positively affect value perception” [23, p.231] and incorporated a consumer and firm resources in their model. Whereas their model and the incorporation of consumer and firm resources serve as a valuable starting point, the investigated B2C-service cannot be compared with the more complex IT consulting services. Concluding, all previous works neglect certain parts central to our research objective: they focus on B2C-relationships, the underlying objective differs, and/or the investigated services are not applicable and transferable to IT consulting services. Hence, no validated quantitative-empirical model synthesized service provider and client capabilities in a business-to-business (B2B) service system. To address this research gap, we investigate the following research question: Which factors determine the IT consulting service value considering both consultant and client capabilities?

2 Theoretical Foundations

We ground our research in the S-D logic of Vargo and Lusch [12] as “philosophical foundation” [28, p.19]. With the occurrence of S-D logic, the dichotomy of goods and services is overcome. Vargo and Lusch [12, p.2] define service “as the application of specialized competences [...] through deeds, processes, and performances for the benefit of another entity or the entity itself”. Hence, goods represent the distributing mechanism for services because service is the fundamental unit of exchange [12, 13]. Taking this into account, S-D logic assumes that “all economies are service economies” [12, p.10] and “enterprises cannot deliver value, but only offer value propositions” [13, p.7] which leads to an enhanced client role.

Moreover, S-D logic, as a meta-theory, can be seen as a theoretical foundation for service science [30]. Maglio and Spohrer [28, p.18] state that the “service-dominant logic may be the philosophical foundation of service science, and the service system may be its basic theoretical construct”. Service science also focusses both on mutual interaction between the service provider and its customers in which specialized competences, such as knowledge and skills (operant resources), are exchanged and posits that a service “is a process of applying the provider’s competences (knowledge and skills) for the benefit [value] of, and in conjunction with [value co-creation], the

customer” [31, p.361]. In this framing, service systems are the basic unit of analysis and are defined “as value-co-creation configurations of people, technology, value propositions connecting internal and external service systems, and shared information (such as language, laws, measures, and methods)” [32, p.72].

2.1 Value Propositions, Value Co-Creation, and Value

The term value proposition is widespread in research as well as in practice. However, scholars realize that the term is yet poorly defined [17], also in the initial work and later revised works of S-D logic [14]. Lusch et al. [33] describe value propositions as a service provider’s promise in which value-in-exchange is linked to value-in-use. Similarly, Grönroos and Voima [34, p.145] consider value propositions as “promises that customers can extract some value from an offering”. However, the actual assessment of whether the service provision contributes to the client’s value in future use can only be made by the client. Therefore, a service provider cannot guarantee an initial value contribution [17], but only make suggestions as to how the client can generate value through the use of the service. Barrutia and Gilsanz [23, p.232] which state that service provider and service recipient “simultaneously access, adapt, and integrate resources to create value for themselves and others” and assume that value is always co-created.

2.2 Consulting and Client Capabilities

Consulting service is defined as a time-limited achievement with the goal of defining, structuring, analyzing, and solving specific business problems interactively with the client [35]. Due to the interactive service provision and the knowledge-intensive industry and in line with Grönroos and Ojasalo [29], it is essential to consider both consulting and client capabilities in the value co-creation process. Furthermore, service science differentiates between operant (intangible, continuous, dynamic) and operand resources (tangible, static resources). We defined operant resources as those that act on operand resources [13]. Within consulting services, the fundamental unit of exchange is operant capabilities, such as knowledge and skills [36]. Thus, we solely focus on operant resources. To ensure a high consulting value, both parties should provide particular skills within the project. Both parties need certain types of expertise, such as social expertise, technological expertise, and functional expertise to maximize the consulting service value. In addition, consultants also need industry expertise and innovativeness to achieve high-quality results. However, IT consultancies can only provide value propositions which consist of their overall skill set. Thus, we integrate IT consulting quality as an operant resource in the consultant capabilities. IT consulting quality represents the overall perception of various underlying factors. Summarizing, the above outlined different types of expertise, as well as the consultant’s innovativeness, contribute to the IT consulting quality which in turn contributes to the overall IT consulting service value.

Similar to the consultant capabilities, the client needs to provide a particular social, technological, and functional expertise. However, the client also needs specialized

skills to handle the provided service [37]. A client who works on a time-limited project with consultants needs to understand how to work together with a consultant [38]. Hence, we consider the past experiences made while working with consultants as an operant client resource. Furthermore, an IT consulting service will only contribute to a client's value if the client has the ability to recognize the provided value and external information, as well as transform, assimilate, and apply it [39]. Thus, the client's required skills contribute to its absorptive capacity which in turn contributes to the overall IT consulting service value. Additionally, we hypothesize that the collaboration of both parties is an additional important determinant that contributes to the overall consulting service value and displays the co-creation of the consultant and the client. A prerequisite for consulting services is the exchange of knowledge and information between the consultant and the client as well as a trustworthy and courteous way of collaborating [40]. These social resources comprise for instance interpersonal trust, know-how exchange, relationship proneness, and social skills. We suggest that each of the parties' social expertise determines the collaboration quality which in turn directly influences the overall consulting service value.

3 Conceptual Development

After having described the theoretical foundations and identified previous works related to consulting service value, we now derive our hypotheses to explain the value co-creation between IT consultancies and clients. Our research aims at explaining and measuring consulting service value by both client and consultant capabilities. Therefore, we built on Oesterle et al. [41] in which we deductively derived a preliminary conceptual model. Whereas the previously published article served as a valuable starting point, we modified the previous model by including the concept of absorptive capacity [39] and by extending the model with additional antecedents. Investigating the value co-creation in the consulting industry, we focus on the project-level and examine the consulting service value that emerges from the mutual work of an IT consultancy and its client on a project level. As introduced in our theoretical foundation, we follow the distinction of Barrutia and Gilsanz [23] and integrate both client and consultant capabilities to capture the co-creation process within the consulting industry. We incorporate collaboration quality as an additional determinant of our dependent variable. Our dependent variable is the consulting service value which is the overall assessment of multiple factors (monetary and non-monetary) and emerges during the use of the provided service [23].

The first determinant that influences the consulting service value is collaboration quality which in turn is influenced by consultant and client capabilities. It refers to the extent to which at least two entities of the IT consultancy and the client worked jointly and coordinated together [42]. Thus, collaboration consists of personal interactions and relations between consultants and clients as well as collaborating aspects like respect and friendliness [43]. The better these qualities, the stronger are the ties between a consultant and its client, and thus, a higher value emerges [44]. Hence, we hypothesize: *H1: Collaboration quality has a positive impact on IT consulting service value.*

3.1 Consultant Capabilities

The consultant should provide high consulting skills to address all relevant tasks in a structured and comprehensible way as well as practical research techniques applicable to the specific project. We define IT consulting quality as the extent to which a consultant has expert knowledge in required project skills such as systematic approach, statistical analysis, project and change management, development of surveys, or software engineering [45]. The necessary consulting skills can vary in each project. It is the consultant's task to assess which skill set is best for the project to achieve a high consulting service value. Hence, we state:

H2: IT Consulting quality has a positive impact on IT consulting service value.

Furthermore, the IT consulting quality depends on the consultants' industry knowledge. Consultants with high industry expertise better understand the specific needs of the client and have a thorough understanding of how business is conducted in the client industry [46]. We define industry expertise as the extent to which a consultant possesses expert knowledge in the domain of the client. We hypothesize:

H3: Industry expertise has a positive impact on IT consulting quality.

Moreover, consultants also need technological expertise. Especially in light of the ongoing digitalization, there are only a few consulting projects which do not include technology issues which stresses the importance of consultants possessing technological skills. The contracting of a consultant seems to be an easy way for clients to get access to new technologies. We define technological expertise as the extent to which a consultant possesses expert knowledge in technology and related areas [47] which facilitates the overall IT consulting quality. We hypothesize:

H4: Technological expertise has a positive impact on IT consulting quality.

Consultants also need functional expertise to complete consulting projects successfully. Consulting projects require a heterogeneous set of expert knowledge. We follow the definition of Hoffman [48, p.85] who defines a functional expert as "one who has special skills or knowledge derived from extensive experience with subdomains". Hence, we hypothesize:

H5: Functional expertise of the consultant has a positive impact on IT consulting quality.

Within the consulting industry, clients rely on consultants to figure out new ways of dealing with a specific issue. Especially in the light of the digitization of services, a certain level of innovative approaches is necessary. We define innovativeness as the degree to which consultants provide an innovative and novel service and are able to influence the client organization positively [49]. Hence, we hypothesize:

H6: Innovativeness of the consultant has a positive impact on IT consulting quality.

Finally, we define social expertise of the consultant as "interpersonal perceptiveness and the capacity to adjust one's behavior to different situational demands and to effectively influence and control the responses of others" [50, p.1076]. This conclusion also remains valid in a B2B context. Within a consulting project, there are various types of actors with different kinds of expertise and attitudes. Hence, the consultant must cope and collaborate with all of them to successfully complete the project. Thus, social expertise will facilitate the quality of the collaboration and furthermore contribute to

the IT consulting quality. Therefore, we hypothesize:

H7: Social expertise of the consultant has a positive impact on IT consulting quality.

H8: Social expertise of the consultant has a positive impact on collaboration quality.

Summarizing, we hypothesize that the determinants introduced above positively influence the client's perception of the overall IT consulting quality.

3.2 Client Capabilities

We now introduce the client capabilities through which the consulting service value emerges. Some determinants of the client capabilities are similar to the consultant capabilities but are assessed from the client's perspective (social, technological, and functional expertise). Also, we include the determinants experience with consultants and the client's absorptive capacity.

Absorptive capacity is a firm's ability to identify, assimilate, transform, and apply valuable external knowledge [39] which is also applicable to consulting services. The client has to be able to identify, assimilate, transform, and apply the consultant's external knowledge (as seen by the client) to create value. Therefore, we hypothesize:
H9: Absorptive capacity has a positive impact on IT consulting service value.

The client's social expertise, while similar to the consultant capabilities, takes the client's perspective. According to Ferris et al. [50, p.1076], social expertise is defined as the "interpersonal perceptiveness and the capacity to adjust one's behavior to different situational demands and to effectively influence and control the responses of others". In the same vein, client employees have to work jointly together with consultants. These skills will also help clients to conduct business with consultants jointly and absorb the provided solutions. Hence, we hypothesize:

H10: Social expertise of the client has a positive impact on collaboration quality.

H11: Social expertise of the client has a positive impact on absorptive capacity.

Like the consultant's technological expertise, also clients need to provide technological expertise. Otherwise, the client does not have the abilities to absorb the externally provided knowledge [47]. The client needs technological expertise to evaluate if the provided service is applicable and valuable. Therefore, we propose:
H12: Technological expertise has a positive impact on absorptive capacity.

Like the consultant's functional expertise, the client needs to understand all functional aspects of the project and provide expert knowledge. Due to the interactive service provision, the client requires these skills to assess if the externally provided service fits into the client company and is beneficial [51]. Hence, we conclude:
H13: Functional expertise has a positive impact on absorptive capacity.

Besides, we also integrate the determinant experience with consultants which we define as the extent to which client project members have developed empirical knowledge based on past interactions with consultants. This determinant is vital for clients since it reflects the learning process of how to interact, govern, judge, and transform the relationship with consultants [38]. Hence, we hypothesize:

H14: Experience with consultants has a positive impact on absorptive capacity.

4 Research Method

To analyze our model, we opted for quantitative-empirical methods for our research project because of their advantage regarding statistical generalization [52] and used structural equation modeling. The online questionnaire had the advantage that respondents were more likely to state their true unbiased opinion compared to a face-to-face interview. To empirically validate our theoretical model, we had to develop a suitable survey instrument.

4.1 Construct Operationalization

While existing measurement scales served as a good starting point, we had to adapt them in wording, language, and formality. In the cases that no suitable measurement scales were found or did not fit to our context, we developed additional items. After a first analysis of the initial item pool, we shortened our long-list and continued with the resulting item pool. After having adjusted the raw items in several rounds, we conducted two rounds of card-sorting procedures proposed by Moore and Benbasat [53] to assess the construct validity. In the first round, we achieved a satisfying overall hit ratio of 82.96%. However, the spread of the continuum was quite broad, so that we had to sharpen and to elaborate on some construct definitions and items. After a thorough revision of the items with the lowest scores and the highest cross-loadings and the construct definitions, we conducted a second round of card-sorting procedure. With an overall hit ration of 95.14% in the second card-sorting round, the score of the revised measurement model was satisfying.¹ After having successfully developed the measurement instrument, we conducted a pre-test with 20 participants (researchers, consultants, clients) which showed no need for further action. We measured all items with a seven-point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’.

4.2 Data Collection

Having developed our survey instrument, we proceeded with the data collection. Our target population were consultants and employees who were jointly working on an IT project or an IT-related project. We used the convenience sampling approach when we approached potential participants in our professional business networks with an individual email including a personalized link for participation. The invitation contained a short description of our research endeavor as well as the assurance that we will handle all gathered data confidentially. The survey period lasted four weeks. The survey was provided in English to apply to a high number of participants. All participants answered the complete questionnaire and therefore, assessed own capabilities, the project partner’s capabilities, the collaboration quality, and the consulting service value according to their perspective.

¹ We provide the final measurement model online:
<https://www.dropbox.com/s/e687qo8gcte6ja5/WI2019sub.pdf?dl=0>

487 participants were invited, and 113 fully completed the questionnaire. Of the 113 participants, 67 were consultants and 46 clients and were mainly located in the German-speaking area. Most of the projects had one to five full-time equivalents and also one to five consultants working on the project. The client participants can be mostly assigned to higher management, and the consultant participants were mainly senior consultants or above. The client role within the projects can be considered as project managers and can be assigned to the area of IT. Most of the client participants were from the consumer goods industry (21.7%), followed by the financial service industry (19.6%), and manufacturing (15.2%). Regarding the consultancies, 59.7% were IT consultancies, followed by IT management consultancies (14.9%). 47.8% of the participants had a relationship above two years with their project partner.

5 Data Analysis and Results

First, to assess our measurement model, we tested for unidimensionality, internal consistency, indicator reliability, convergent validity, and discriminant validity [54, 55]. To measure unidimensionality, we conducted an exploratory factor analysis (EFA) using SPSS 20 with a principal component analysis in combination with the Varimax rotation. All of the identified factors had an Eigenvalue above 1.0 and loaded on their corresponding factor. We dropped one item of each of the constructs *functional expertise* and *absorptive capacity*, not meeting the threshold of 0.600 [56]. After these corrections, all factor loadings were above 0.600 and unidimensionality was shown. Furthermore, we tested our measurement model for internal consistency. We calculated Cronbach's Alpha (CA) and composite reliability (CR). Both CA and CR values of all constructs were above the threshold of 0.800, suggesting a high degree of internal consistency [57]. Furthermore, we checked our measurement model for indicator reliability. Therefore, all indicators should be greater than 0.707, and significant at the 0.05 level, which was the case for our data [57]. To assess convergent validity, we checked the average variance extracted (AVE), which should be higher than 0.500, which also applied to our data. Finally, we tested for discriminant validity. We calculated the Fornell-Larcker criterion [58], the heterotrait-monotrait ratio (HTMT) [59], and checked the cross-loadings [57]. Assessing the Fornell-Larcker criterion, all constructs had the highest correlation with themselves.² Furthermore, all constructs had an HTMT ratio below the threshold of 0.850 [59]. The cross-loadings also met the requirement to have the highest correlation with its corresponding construct. Hence, we conclude that the discriminant validity of our measurement model is given.

After having discussed the measurement model, we focused on the structural model by assessing path coefficients and coefficients of determination (R^2 values). To check our model for significance, we applied the Bootstrap procedure [57] with 5,000 subsamples. As we only considered completed questionnaires in our analysis, we did not have to cope with missing values. Figure 1 presents our findings showing R^2 values, path coefficients, and the level of significance.

² We provide the Fornell-Larcker Criterion online:

<https://www.dropbox.com/s/e687qo8gcte6ja5/WI2019sub.pdf?dl=0>

Eight of our fourteen hypotheses could be confirmed on the 1% - or the 5%-level of significance and have weightings higher than 0.200 [57]. The coefficients of determination (R^2) indicated how much variance of a latent variable was explained by its preceding constructs [54]. Chin [57] distinguished between three groups of coefficients of determination (R^2): $R^2 \geq 0.670$ could be considered as substantial, $R^2 \geq 0.330$ as moderate, and $R^2 \geq 0.190$ as weak. Based on this classification, our structural model explained a moderate amount of variance of our dependent variable.

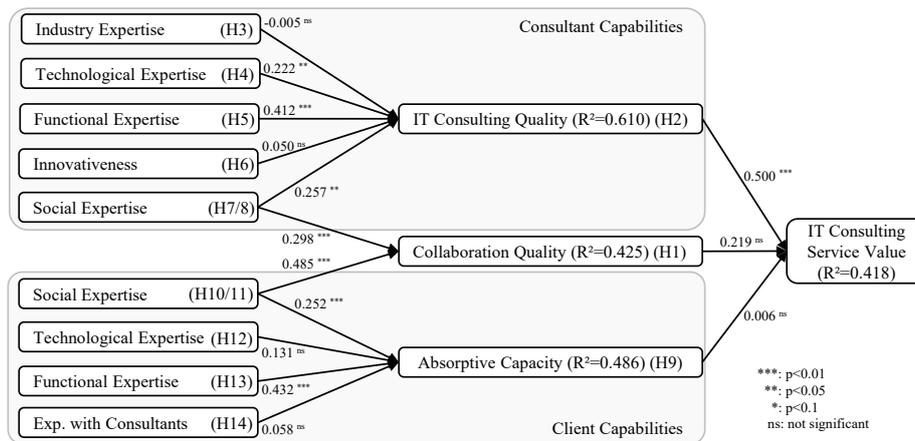


Figure 1. Assessment of the structural model

6 Discussion

Within the meta-theory of S-D logic and the service science research stream, there are numerous theoretical contributions and some qualitative-empirical studies. The number of quantitative-empirical studies which draw on the co-created emergence of value is surprisingly scarce. In this light, our major finding is that consulting service value only seems to be determined by consulting capabilities, while client capabilities, in contrast to our conceptualization, do not show any significant influence on consulting service value, neither in the overall data set nor in the subsamples. These results contradict the limited number of quantitative-empirical studies which suggest that service providers and their clients jointly co-create value. These studies, however, do not focus on a B2B service system [23], do not explain consulting service value but different dependent variables, such as loyalty, or do not focus on the consulting industry but other industries, such as hospitality [22]. As all these previous quantitative-empirical studies provide support for the co-creation of value within a B2C context, we argue that these service beneficiaries are always individual persons who have a high intrinsic motivation to co-create value and thus may have a higher priority to extract value from the service system. At a business level, the obtained value does not directly affect a tangible individual [60] which is why we propose that the client's intrinsic motivation in a B2B service system is lower than in a B2C service system. To the best of our knowledge,

there is no previous quantitative-empirical study in a B2B service system that found support for the applicability of value co-creation.

Whereas IT SERVQUAL [8] as a measuring instrument for service quality relies on the gap model and focuses on how the service is delivered, our measurement model is not based on the disconfirmation paradigm. Thus, we concur with the various criticisms [10, 11] concerning both theoretical and operational aspects of the instrument. A second study is a conceptual model to explain customer satisfaction without an empirical validation [6]. Our empirical results provide support for their assumption that the functional expertise of the consultant positively contributes to service quality, which we included as IT consulting quality. IT consulting quality, as already briefly mentioned above, is a strong and significant determinant of consulting service value in our study, which means that IT consulting quality, such as addressing tasks in a structured and understandable way as well as providing the right project skills, contributes to the overall consulting service value. This result is in line with previous research [23]. Focusing in more detail on what IT consulting quality determines, our data show support for some of our hypotheses. We found support for our hypotheses that technological expertise (H4) and functional expertise (H5) are needed to provide a high IT consulting quality. Also, consultants need functional expertise to fully understand all facets of the project and apply their specialized skills to the actual problem. Hence, they can proceed their consulting competences. Next, we hypothesized that the IT consulting quality is influenced by the social expertise of the consultants (H7). The more a consultant possesses personal skills which help to direct its actions from an individual to a common action orientation, the higher is the IT consulting quality. Our data shows support for the hypothesis.

In contrast to our conceptualization, we also need to reject a few hypotheses. We hypothesized that consultants need to possess specific industry expertise that they leverage in projects for the success of the project, i.e., have a thorough understanding of how business is conducted in the client industry (H3). Our data shows no support for this hypothesis, and we reason that consultants and clients consider themselves smart enough to work in any given industry and context so that industry expertise is not viewed as a relevant determinant of IT consulting quality. Furthermore, we hypothesized that consultants need a certain degree of innovativeness to be able to provide unique and problem-solving solutions to the client (H6), which, however, is not supported by our data. This result is surprising, and we can only assume that there was no need for highly innovative solutions in the projects in our dataset or the client wanted standardized solutions.

Finally, we hypothesized that collaboration quality positively influences consulting service value (H1), which we cannot confirm. This finding is quite surprising. We posit that the value of the consulting service is determined by the mutual interaction and hence, the co-creation within the service provision. Especially in knowledge-intensive industries such as the consulting industry, mutual interactions of the service provider and the service recipient concerning information exchange and communication openness seem to be important. However, contrary to our hypothesis and based on the empirical findings, the relationship between collaboration quality and consulting service value is not supported. We assume that this non-significant relationship (H1)

depends on the incorporated different types of consulting project types. Whereas consultants can provide some IT consulting projects with a low collaboration level (e.g., IT strategy projects, IT audit), some others need a high collaboration level (e.g., IT implementation, IT transformation).

Summarizing, our data set does not support one of the main assumptions of S-D logic, the co-created determination of value in the domain of IT consulting services. It seems as if the consulting industry is still service provider-centric, not only in the perception of the consultants but also in the perception of the client. Our findings show consulting capabilities solely determine the consulting service value.

7 Conclusion

With our work, we set out to empirically identify determinants which explain the emergence of co-created value in consulting relationships from both the perspective of IT consultancies and clients. To achieve this objective, we adopted and further developed a conceptual model [41]. Our key contributions are twofold. First and foremost, our study showed that consulting service value is determined by consultants only, neglecting any influence of the client. Second, the consultant's functional, technological, and social expertise mainly predict IT consulting quality.

Before we conclude this paper by outlining our recommendations for future research and by highlighting our contributions to both theory and practice, we briefly discuss our study's limitations. Our study only focuses on perceived value, which can be considered as a key determinant of consulting service success. Success in that respect may also be influenced by additional factors such as price, political connections, and sales capabilities which, however, is beyond the study's scope. Furthermore, the participants completed the whole survey, i.e., also the assessment of own capabilities which could be biased, and thus, participants might have overestimated them. This bias could be minimized by collecting matched pairs.

Regarding the next steps, we will follow a dyadic data analysis approach [61] to overcome the possibly biased self-assessment of the participants. Within the dyadic analysis, clients will evaluate their consultants and vice versa on a project level. Through this measurement, it will be possible to get an objective judgment of the incorporated consulting and client capabilities. Thus, we will obtain more profound insights. To account for the particularities of the consulting domain, we aim to strengthen our statistical analysis by carrying out multi-group comparisons. Especially, multi-group comparisons regarding the different IT consulting project types may lead to new insights on the underlying mechanisms.

Keeping the limitations in mind, our results contribute to both theory and practice. Our contribution to the research stream of service science is the advancement of the theoretical discourse on value emergence by providing an empirically validated theory. Furthermore, we account for the value co-creation model in a service system which is the fundamental basis of analysis in service science. Our study indicates that value co-creation in an IT consulting service system is still service provider centric. The fact that

our data do not support the co-creation of value provides new insights into a service system as well as foster the discussion of the meta-theory S-D logic.

From a practical point of view, we provide meaningful insights to both consultant and client organization. IT consultancies may learn which determinants lead to a high consulting service value and can be used internally for human resources development purposes. In addition to consultancies, our results equip clients with information which determinants matter most in the selection of a consultancy to maximize the value they gain from contracting a consultancy.

References

1. Veit, D., Clemons, E., Benlian, A., Buxmann, P., Hess, T., Kundisch, D., Leimeister, J.M., Loos, P., Spann, M.: Business Models. *Bus Inf Syst Eng* 6, 45-53 (2014)
2. Poulfelt, F., Olson, T.H.: The Changing Global Consulting Industry. In: Poulfelt, F., Olson, T.H. (eds.) *Management Consulting*, vol. 2, pp. 5-36. Routledge, New York (2018)
3. Nissen, V., Seifert, H.: Digital Transformation in Business Consulting. In: Nissen, V. (ed.) *Digital Transformation of the Consulting Industry*, pp. 153-190. Springer, Cham (2018)
4. Nissen, V.: Consulting Research: A Scientific Perspective on Consulting. In: Nissen, V. (ed.) *Advances in Consulting Research*, pp. 1-27. Springer, Cham (2019)
5. Grönroos, C.: A Service Quality Model and its Marketing Implications. *European Journal of Marketing* 18, 36-44 (1984)
6. Das, A., Soh, C.W.L., Lee, P.C.B.: A Model of Customer Satisfaction with Information Technology Service Providers. *Proceedings of the Conference on Computer Personnel Research* 190-193 (1999)
7. Parasuraman, A., Zeithaml, V.A., Berry, L.L.: A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing* 49, 41-50 (1985)
8. Yoon, S., Suh, H.: Ensuring IT Consulting SERVQUAL and User Satisfaction: A Modified Measurement Tool. *Information Systems Frontiers* 6, 341-351 (2004)
9. Kettinger, W.J., Lee, C.C.: Pragmatic Perspectives on the Measurement of Information Systems Service Quality. *MIS Quarterly* 21, 223-240 (1997)
10. Buttle, F.: SERVQUAL: review, critique, research agenda. *European Journal of Marketing* 30, 8-32 (1996)
11. Dyke, T.P.v., Leon, A.K., Prybutok, V.R.: Measuring Information Systems Service Quality. *MIS Quarterly* 21, 195-208 (1997)
12. Vargo, S.L., Lusch, R.F.: Evolving to a New Dominant Logic for Marketing. *Journal of Marketing* 68, 1-17 (2004)
13. Vargo, S.L., Lusch, R.F.: Service-Dominant Logic: Continuing the Evolution. *Journal of the Academy of Marketing Science* 36, 1-10 (2008)
14. Vargo, S.L., Lusch, R.F.: Institutions and Axioms: An Extension and Update of Service-Dominant Logic. *Journal of the Academy of Marketing Science* 1-19 (2016)
15. Dong, B., Evans, K., Zou, S.: The effects of customer participation in co-created service recovery. *Journal of the Academy of Marketing Science* 36, 123-137 (2008)
16. Lusch, R.F., Nambisan, S.: Service Innovation: A Service-Dominant Logic Perspective *MIS Quarterly* 39, 155-175 (2015)
17. Skälén, P., Gummerus, J., von Koskull, C., Magnusson, P.R.: Exploring Value Propositions and Service Innovation. *Journal of the Academy of Marketing Science* 43, 137-158 (2015)

18. Breidbach, C.F., Smith, P., Callagher, L.J.: Advancing Innovation in Professional Service Firms: Insights from the Service-Dominant Logic. *Service Science* 5, 263-275 (2013)
19. Barrett, M., Davidson, E., Prabhu, J., Vargo, S.L.: Service innovation in the digital age: key contributions and future directions. *MIS quarterly* 39, 135-154 (2015)
20. Breidbach, C.F., Maglio, P.P.: A Service Science Perspective on the Role of ICT in Service Innovation. *Proceedings of the 23rd European Conference on Information Systems*, paper 33 (2015)
21. Karpen, I.O., Bove, L.L., Lukas, B.A., Zyphur, M.J.: Service-Dominant Orientation: Measurement and Impact on Performance Outcomes. *J of Retailing* 91, 89-108 (2015)
22. Blazquez-Resino, J.J., Molina, A., Esteban-Talaya, A.: Service-Dominant Logic in tourism: the way to loyalty. *Current Issues in Tourism* 18, 706-724 (2015)
23. Barrutia, J.M., Gilsanz, A.: Electronic Service Quality and Value. *Journal of Service Research* 16, 231-246 (2013)
24. Alter, S.: Does Service-Dominant Logic Provide Insight about Operational IT Service Systems? In: *AMCIS 2010 Proceedings*, paper no. 138. AIS, (2010)
25. Brust, L., Breidbach, C., Antons, D., Salge, T.-O.: Service-Dominant Logic and Information Systems Research. *Proceedings of the 38th International Conference on Information Systems* (2017)
26. Kutsikos, K., Sakas, D.: A Framework for Enabling Service Configuration Decisions. *Procedia - Social and Behavioral Sciences* 148, 604-610 (2014)
27. Tallon, P.P.: A Service Science Perspective on Strategic Choice, IT, and Performance in U.S. Banking. *Journal of Management Information Systems* 26, 219-252 (2010)
28. Maglio, P.P., Spohrer, J.: Fundamentals of service science. *Journal of the Academy of Marketing Science* 36, 18-20 (2008)
29. Grönroos, C., Ojasalo, K.: Service productivity: Towards a conceptualization of the transformation of inputs into economic results in services. *Journal of Business Research* 57, 414-423 (2004)
30. Vargo, S.L., Lusch, R.F., Akaka, M.A.: Advancing Service Science with Service-Dominant Logic. In: Maglio, P.P., Kieliszewski, C.A., Spohrer, J.C. (eds.) *Handbook of Service Science*, pp. 133-156. Springer, New York (2010)
31. Chew, E.K.: Service Science. In: Maglio, P.P., Kieliszewski, C.A., Spohrer, J.C. (eds.) *Handbook of Service Science*, pp. 359-386. Springer, New York (2010)
32. Spohrer, J.C., Maglio, P.P., Bailey, J., Gruhl, D.: Steps toward a science of service systems. *Computer* 40, 71-77 (2007)
33. Lusch, R.F., Vargo, S.L., O'Brien, M.: Competing through Service: Insights from Service-Dominant Logic. *J of Retailing* 83, 5-18 (2007)
34. Grönroos, C., Voima, P.: Critical Service Logic: Making Sense of Value Creation and Co-creation. *Journal of the Academy of Marketing Science* 41, 133-150 (2013)
35. Nissen, V.: Consulting Research. In: Nissen, V. (ed.) *Consulting Research*, pp. 3-38. DUV, Wiesbaden (2007)
36. Chandler, J.D., Vargo, S.L.: Contextualization and Value-in-Context: How Context Frames Exchange. *Marketing Theory* 11, 35-49 (2011)
37. Løwendahl, B.R., Revang, Ø., Fosstenløkken, S.M.: Knowledge and Value Creation in Professional Service Firms. *Human Relations* 54, 911-931 (2001)
38. Gentile, C., Spiller, N., Noci, G.: How to Sustain the Customer Experience. *European Management Journal* 25, 395-410 (2007)
39. Cohen, W.M., Levinthal, D.A.: Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly* 35, 128-152 (1990)

40. Wurst, K.M., Hoegl, M.M., Gemuenden, H.G.: Collaboration within and between teams in multi-team R&D projects. *Proceedings of the Portland International Conference on Management of Engineering and Technology* 545-552 (2001)
41. Oesterle, S., Buchwald, A., Urbach, N.: Understanding the Co-Creation of Value Emerging from the Collaboration between IT Consulting Firms and their Customers. *Proceedings of the 37th International Conference on Information Systems* (2016)
42. Pereira, C.S., Soares, A.L.: Improving the Quality of Collaboration Requirements for Information Management through Social Networks Analysis. *International Journal of Information Management* 27, 86-103 (2007)
43. Kelley, S.W., Donnelly Jr, J.H., Skinner, S.J.: Customer Participation in Service Production and Delivery. *J of Retailing* 66, 315 (1990)
44. Boughzala, I., de Vreede, G.-J.: Evaluating Team Collaboration Quality. *Journal of Management Information Systems* 32, 129-157 (2015)
45. Boh, W., Ren, Y., Kiesler, S.: Managing expertise in a distributed environment. *Proceedings of the 23rd International Conference on Information Systems* 173-181 (2002)
46. Goles, T.: Vendor capabilities and outsourcing success: A resource-based view. *Wirtschaftsinf* 45, 199-206 (2003)
47. Kirby, D.A., Dylan, J.-E.: Small Technology-based Professional Consultancy Services in the United Kingdom. *The Service Industries Journal* 17, 155-172 (1997)
48. Hoffman, R.R.: How can Expertise be Defined? Implications of Research from Cognitive Psychology. *Exploring Expertise* 81-100 (1998)
49. Garcia, R., Calantone, R.: A critical look at technological innovation typology and innovativeness terminology. *J of Product Innovation Management* 19, 110-132 (2002)
50. Ferris, G.R., Witt, L.A., Hochwarter, W.A.: Interaction of social skill and general mental ability on job performance and salary. *J of Applied Psychology* 86, 1075-1082 (2001)
51. Richter, A., Niewiem, S.: Knowledge transfer across permeable boundaries. *Scandinavian Journal of Management* 25, 275-288 (2009)
52. Johnson, P., Duberley, J.: *Understanding management research: An introduction to epistemology*. Sage, London (2000)
53. Moore, G.C., Benbasat, I.: Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *ISR* 2, 192-222 (1991)
54. Hair, J.F., Hult, G.T.M., Ringle, C., Sarstedt, M.: *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications (2016)
55. Urbach, N., Ahlemann, F.: Structural equation modeling in information systems research using partial least squares. *JITTA* 11, 5-40 (2010)
56. Gefen, D., Straub, D.: A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *CAIS* 16, 5 (2005)
57. Chin, W.W.: The partial least squares approach to structural equation modeling. In: Marcoulides, G.A. (ed.) *Modern methods for business research*, pp. 295-336. Lawrence Erlbaum Associates, Mahwah, New Jersey, USA (1998)
58. Fornell, C., Larcker, D.F.: Structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18, 382-388 (1981)
59. Henseler, J., Ringle, C.M., Sarstedt, M.: A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science* 43, 115-135 (2015)
60. Roser, T., DeFillippi, R., Samson, A.: Managing your co-creation mix: co-creation ventures in distinctive contexts. *European Business Review* 25, 20-41 (2013)
61. Kenny, D.A., Kashy, D.A., Cook, W.L.: *Dyadic Data Analysis*. The Guilford Press, New York, London (2006)