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Relational governance strategies for advanced service provision : Multiple paths to superior financial performance in servitization

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Relational governance strategies for advanced service provision:

Multiple paths to financial performance in servitization

Abstract

The ability of manufacturing companies to offer advanced services and achieve financial performance remains an open question within the servitization literature. One central question in this domain relates to how providers govern their customer relationships to realize profits in servitization. To address the question, this study seeks to unravel the complex relations between advanced service provision, relational governance strategies and the financial performance of manufacturing firms. Drawing on a dataset of 50 Swedish advanced service providers, this study utilizes a configurational comparative method – namely, fuzzy-set qualitative comparative analysis (fsQCA) – to identify influential configurations of governance conditions, such as a) service innovation, b) perceived switching costs, c) the attractiveness of alternatives, and d) explicit contracts on firm performance. The main contribution of this study is the identification of three alternative governance strategies that enable the advanced service providers to profit from service provision: 1) innovation governance strategy (high service innovation, low attractiveness of alternatives, and low explicit contracts), 2) relational governance strategy (high service innovation, high perceived switching costs, and low explicit contracts), and 3) market-based governance strategy (high service innovation, low perceived switching costs, as well as high attractiveness of alternatives and high explicit contracts). These results augment the literature on servitization and advance services by explaining the need to apply diverse relational governance strategies in the interests of achieving financial performance.

Keywords: Servitization; product service systems (PSS); relational governance; service innovation; relational contracting; advanced services.

1. Introduction

Increasing competition is driving manufacturing companies into servitization – a transition from standard products to increasingly advanced product-service systems to secure competitiveness (Baines et al., 2009; Gustafsson et al., 2010; Kindström et al., 2013). Companies such as Ericsson, IBM, and GE increasingly offer advanced service solutions rather than the traditional business model of stand-alone physical products with basic add-on services. Advanced services are defined as complex combinations of products, services, software, supporting processes, and knowledge, working together to achieve the outcomes desired by the customer (Baines et al., 2017; Salonen et al., 2017; Sousa & Silveira, 2017). It is commonly argued that creating such advanced product and service combinations enables providers to assume greater responsibility and risk, allowing them to generate higher value for customers, charge premium prices, and achieve financial performance (Parida et al., 2014; Baines et al., 2009, Visnjic et al., 2017). However, in practice, manufacturers that add more services are likely to face significant challenges – namely, the service paradox – as they try to capitalize on advanced service innovation under varying market conditions (Kowalkowski et al., 2017; Gebauer et al., 2005).

Servitization literature provides quite limited and opposing empirical evidence on the performance effects of advanced service provision. Studies suggest that the relationship between servitization and performance is complex, non-linear, and moderated by a variety of factors (Fang et al., 2008; Kohtamäki et al., 2013b; Visnjic Kastalli & Van Looy, 2013). These mixed results indicate the presence of equifinality – i.e. different configurations of factors may lead to optimal outcomes (Fiss, 2007) – and affirm that there is no single path to success but many. Recent studies recognize the shortcomings of a linear approach and call for servitization literature to recognize alternative narratives (Luoto, Brax & Kohtamäki, 2017) and to pursue added variety and depth in the theorizing that pertain to the servitization and performance

relationship (Kowalkowski et al., 2017). In particular, one central question relates to how providers govern their customer relationships to realize profits in servitization (Tuli et al, 2007; Petri and Jacob, 2016; Reim et al, 2018). Several gaps in knowledge make this issue important for further study.

First, servitization research has been criticized for being too phenomena driven and lacking in application of theoretical frameworks to generate novel understanding (Rabetino et al., 2018). To address this shortcoming this study follows recent developments within servitization research which builds on literature on relational governance mechanisms (e.g. Macneil, 1978; Rindfleisch & Heide, 1997; Vesalainen & Kohtamäki, 2015; Dyer et al., 2018; Reim et al., 2018) and institutional theory (Adler, 2001; Hallett & Ventresca, 2006; Powell, 1990) to gain novel insights into alternative governance strategies. Indeed, advanced service provision implies a more relational approach since it requires greater involvement of customers and ecosystem partners in value-creation processes (e.g. Lusch, Vargo & Gustafsson, 2016; Petri and Jacob, 2016). Thus, the servitization literature would benefit from studies providing evidence on alternative viable governance strategies when firms strive to capture value from advanced services, since many different strategies can lead to optimal financial outcomes (Forkmann, Henneberg, Witell, & Kindström, 2017). For example, one governance strategy could tie customers into long-term binding contractual commitments whereas another could adopt a more trust-based relational approach, thus conceivably leading to different performance outcomes.

Second, the understanding of governance of relationships in servitization is still quite limited (Tuli et al, 2007; Petri and Jacob, 2016; Reim et al, 2018). Ideally, advanced services would allow superior value creation in provider-customer relationships through leveraging complementary assets, maintaining high levels of informal trust and knowledge sharing, and making customized investments in each partnership (Dyer et al., 2018; Sjödin et al., 2016).

However, this is not always the case, and there appears to be important tradeoffs in governance depending on market conditions (Reim et al., 2018). Yet, these tradeoffs have not been systematically studied. By focusing on the performance effect of alternate governance strategies for advanced service providers under varying conditions, it is possible to identify important choices that advanced service provider make not only how they create value but also how they capture value (Baines et al., 2013; Huikkola et al., 2013).

Third, there is a need to advance servitization literature beyond overly simplistic, linear explanations, and identify that multiple pathways can lead to successful servitization (Forkmann et al. 2017; Kowalkowski et al., 2017; Rabetino, Harmsen, Kohtamäki & Sihvonen, 2018). This suggest the need of adopting a configurational approach (e.g., Sjödin et al., 2016; Godmischeit and Faullant, 2018), which has several important advantages in exploring how different configurations of governance conditions facilitate the performance of advanced services providers. In particular, the configurational lens facilitates the capture of three types of causal complexity (Greckhamer et al., 2008; Ragin, 2008): conjunction (i.e., different conditions do not act in isolation but rather work in combination), equifinality (i.e., the presence of multiple paths to performance), and causal asymmetry (i.e., low-performing configurations are not necessarily a mirror image of high-performing configurations). This study builds on the configurational perspective to address the above mentioned gaps.

Against this background, the purpose of this study is *to identify diverse configurations of relational governance strategies and their effect on the financial performance of advanced service providers*. Accordingly, the study draws on a configurational approach (e.g., Fiss, 2007; Sjödin et al., 2016), focusing on four theoretical constructs relating to relational governance strategies: service innovation, perceived switching costs, attractiveness of alternatives, and explicit contracts. The theoretical review suggest a model suggesting the presence or absence of these constructs or conditions in various governance configurations to shape the performance

of advanced service providers. To identify such configurations fuzzy set qualitative comparative analysis (fsQCA) (on a e.g., Sjödin et al., 2016; Godmischeit and Faullant, 2018) sub-sample of 50 advanced service providers from a survey dataset of Swedish manufacturing firms.

The results highlight the important role of service innovation in driving financial performance in servitization (present in all three configurations and suggests three alternative governance strategies (ranked in the order of empirical support) that enable the providers to profit from advanced service provision: 1) innovation governance strategy (high service innovation, low attractiveness of alternatives and low explicit contracts), 2) relational governance strategy (high service innovation, high perceived switching costs and low explicit contracts), and 3) market-based governance strategy (high service innovation, low perceived switching costs, as well as high attractiveness of alternatives and high explicit contracts).

This study provides several contributions to the servitization literature. First, the explanation of how advanced service providers achieve financial performance still remains an open issue in servitization research, especially when considering advanced service provision (Fang et al., 2008; Kohtamäki et al., 2013b; Visnjic Kastalli & Van Looy, 2013). Second, this study contributes by adopting a relational theory perspective and highlighting the role of relational governance strategies for servitization performance. This study adds to the dialog of advanced service provision and financial performance by proposing and examining novel relational governance conditions that have not been previously studied together. Third, existing studies within servitization have failed to recognize the importance of a configurational perspective (Godmischeit and Faullant, 2018), i.e. no governance condition on its own is a sufficient condition for achieving performance. Instead, performance is contingent on selecting governance strategies based on combinations of conditions that are either present or absent, such as service innovation, perceived switching costs, attractiveness of alternatives and explicit

contracts, which interact to achieve higher firm performance. By applying fsQCA, we are able to provide a more complex picture of diverse governance strategies adopted by advanced service providers. Thus, our results offer important implications for the literature on servitization generally and on advanced service provision in particular.

2. Theoretical framework

2.1. Advanced service offerings and performance

The servitization literature depicts how firms “transit from being a product manufacturer into a service provider” (Oliva & Kallenberg, 2003, p. 161) by moving increasingly towards advanced service offerings (Baines & Lightfoot, 2014; 2013). Indeed, firms have a strong motivation to progress towards advanced service offerings (e.g., providing outcomes), since it has been suggested that this type of service offering has enabled the highest profit potential and greatest customer satisfaction (Eggert et al., 2013; Parida et al., 2014, Reinartz & Ulaga, 2008). Although multiple views exist on what constitutes advanced service offerings, this study builds upon the studies by Parida et al (2014), Partanen et al (2017), and Sjödin et al. (2016). These studies conceptualize operational services and R&D services as prominent examples of advanced service offering (see also, Baines et al. 2011; Gebauer et al., 2010). Specifically, operational services include services such as selling performance, operating the customer process, operating sold products, and performance guarantees. These advanced services are often part of a result-oriented business model (Anarellie et al, 2016; Raja et al. 2013; Reim et al, 2015; Visnjic et al. 2018), which seek to minimize the total cost of ownership by letting the supplier assume responsibility for managing the solutions. R&D services include advanced industrial services such as conducting feasibility studies, designing and developing prototype solutions, and performing problem analysis to identify potential performance improvements (Kohtamäki et al., 2013a; Rabetino et al., 2015).

Although transformation towards advanced service provision holds out the promise of higher performance gain, existing studies have largely provided mixed results (Fang et al., 2008; Kohtamäki et al., 2013b; Visnjic Kastalli & Van Looy, 2013). This suggest that the governance of advanced service provision may be complex and contingent on multiple factors for optimal outcomes (Fiss, 2007), and that there is no one path to financial success for

advanced service providers. In order to investigate the premise of multiple paths to firm performance, this study applies configurational analysis to identify and examine different relational governance strategies applied by advanced service providers.

2.2. A configurational analysis of governance strategies for performance in servitization

To advance servitization literature, this study adopts the configurational perspective in order to obtain a richer understanding of the interplay between different governance strategies and its implications for financial performance. The study described here represents an attempt to inductively identify different types of high-performing relational governance configurations or strategies. Configurational research applies a holistic mode of inquiry, emphasizing that “parts of a social entity take their meaning from the whole and cannot be understood in isolation” (Meyer, Tsui, & Hinings, 1993, p. 1178). Accordingly, configuration theory (Ragin, 2008) helps to explain complex, multidimensional phenomena – such as ways of realizing financial performance in servitization – that tend to cluster into archetypes or common patterns of coherent causal conditions (e.g., governance strategies). This paper builds on the literature on relational governance and institutional theory in identifying four influential theoretical constructs: 1) service innovation, 2) perceived switching costs, 3) attractiveness of alternatives, and 4) explicit contracts.

These theoretical constructs emerge from the relational governance literature (e.g. Rindfleisch & Heide, 1997; Vesalainen & Kohtamäki, 2015) and institutional theory (Adler, 2001; Powell, 1990) in which alternative governance strategies are suggested. Studies largely agree on the important role of service innovation as a key condition for advanced service providers to achieve performance (den Hertog et al., 2010; de Brentani, 1995; Kindström & Kowalkowski, 2009; Sjödin et al., 2016). However, manufacturers need to complement service innovations by either relational or formal contractual arrangements with their customers to

protect their innovations and to appropriate value. Firms differ regarding their approach to relational governance, e.g. how customer relationships are managed for effectiveness, low transaction costs and high productivity (Kohtamäki, Partanen & Möller, 2013a; Kreye, Roehrich & Lewis, 2015). In certain situations, more formal arrangements (i.e. explicit contracts) seem to have greater validity; in other situations, it is argued that relational governance arrangements are key to performance (Parida et al, 2014; Kohtamäki et al., 2013a; Saccani, 2012). At times, structural and social mechanisms may even interact (Kohtamäki et al., 2012). On other occasions, conditions may even warrant adoption of loose governance models, relying on neither contractual nor relational governance but instead counting on the firm's internal capacity to continuously innovate (Adler, 2001). The governance model constructs the behavioral model for the customer partnership, determining how the firm is to act in those relationships and, hence, how others should operate with the provider firm. Recent studies argue that trust in servitization tends to generate trustworthy behaviors, while very structured contractual arrangements may even facilitate opportunistic behaviors (Ghoshal & Moran, 1996; Reim et al., 2018). Some suggest that in complex, dynamic conditions – such as advanced services – relational contracting is the option to be preferred (Kohtamäki et al., 2013a).

The propositions created from the configurational approach suggest that the presence or absence of these conditions in various governance strategy configurations enable manufacturing firms to capture value from service innovations and facilitate financial performance for advanced service providers.

[Insert figure 1 here]

Figure 1 displays the proposed conditions that shape the configurations explaining financial performance in servitization. This study builds on the foundational premise of configuration theory, which posits that the same set of causal factors can lead to different

outcomes, depending on the arrangement of such factors. Aligned with Figure 1, we suggest that the same conditions may have both negative and positive effects, depending on the nature of other conditions (Greckhamer et al., 2008). Indeed, as posited by configurational theory, outcomes of interest rarely result from a single causal factor, and causal factors rarely operate in isolation; therefore, we seek to identify particular configurations of governance conditions in order to formulate empirically validated governance strategies in servitization. Drawing on configurational theory allows us to study the complex field of advanced service provision and build detailed contributions. Thus, this study contributes to the servitization research by building on the concept of ‘equifinality’, which posits that the same outcome can result from different configurations of causal factors (Fiss, 2011; Ragin, 2008). This implies that advanced service providers can choose from different relational governance strategies. In the following sections, we describe the key conditions of our model and their potential effects on performance.

2.2.1. Service innovation

Several studies highlight the importance of service innovation (den Hertog et al., 2010; Ulaga & Reinartz, 2011). Service innovation strategies involve the ability to develop new service offerings that create value for customers (de Brentani, 1995; Kindström & Kowalkowski, 2009). Successful service innovation enables the creation of new and more customer-focused value propositions that are key in realizing the benefits of advanced service provision (Parida et al, 2015; Sjödin et al, 2016). Because superior service innovation satisfies customer needs by introducing them to new service products and processes that facilitate higher value creation, it often leads to improved business performance and revenue growth. As a strategic stance, focusing on service innovation may allow for greater agility in addressing emerging needs as novel digital technologies provide opportunities for value creation. This development entails extending, repackaging, improving, and introducing new lines of services in accordance with

market opportunities (Chong & Zhou, 2014). In addition, service innovation can allow firms to customize their offerings to meet unique customer needs. Indeed, Eisingerich et al. (2009) argued that firms with greater focus on service innovation are likely to successfully commercialize new service offerings. In consequence, such firms will achieve better performance than those that do not focus on the development and commercialization of new services or service-related processes. Furthermore, service innovation entails high costs and requires significant resource investment by manufacturing firms in a continuous process of understanding and meeting customer needs (Parida et al, 2015); this necessitates finding the right governance strategies to appropriate the value of innovation.

2.2.2. Perceived switching costs

Perceived switching costs relate to the costs (e.g., relational/operational/monetary) incurred by the customer in switching provider (Morgan & Hunt, 1994; Williamson, 1981). In the advanced-service context, the provider's unique resources, processes, and capabilities increase customer dependency, and raise switching times and switching costs. In addition, Sjödin et al. (2017) found that customers of advanced services face loss of operational know-how, which makes them dependent on the provider and exposed to the risk of losing core knowledge if the relationship is terminated. High switching costs can thus increase the provider's bargaining power in relation to the customer and may enable higher profits and financial performance. For providers, high bargaining power may also create stability in existing customer relationships (Morgan & Hunt, 1994), allowing the provider firm to increase revenues rather than to focus on retaining and extending the scope of relationships with customers. For example, Visnjic et al. (2017) identified lock-in as a strategy for advanced service providers to capture value since customers would prefer to stay in relationships for the longer term. On the other hand, as Sjödin et al. (2017) found, when customers perceive that the cost of switching is high, a barrier to adopting advanced services may be created since they would be at the mercy of the provider.

Thus, excessive efforts to lock in customers has the potential to backfire with consequent negative effects on performance.

2.2.3. Attractiveness of alternatives

In the service context, the attractiveness of alternatives is a condition that can spur the switch to an alternative provider or can, on the contrary, increase loyalty to the established provider when the competing alternatives are considered unattractive. The definition of the degree of attractiveness of alternatives is the customer's estimation of the likelihood of obtaining satisfaction from an alternative relationship (Bansal et al., 2005). As the trend of servitization secures greater prominence, even in developing countries such as China (Neely et al., 2011), competition from alternative advanced service providers is on the increase. Higher market-competition, and attractiveness of alternatives create a challenge for advanced service providers who invest in customer loyalty for lower transaction costs and higher financial performance (Kohtamäki et al., 2013a). In the advanced service context, customers will make a comparative evaluation of their provider in relation to alternative competitors utilizing cost-benefit analysis (Hinterhuber, 2017; Sjödin et al., 2017). If the customer perceives the existing provider to be superior, the benefit of changing to an alternate provider will be low. While this evaluation is largely dictated by the customer and the market, providers often continue to improve their attractiveness for better market position. For example, a provider may strengthen its attractiveness by customizing PSS to meet customer expectations in specific operational conditions (Sjödin et al., 2016). Consequently, customers may decide to remain in the relationship given the market structure or because alternative offers are outside the range of options for their operating conditions. Hence, if customers are unaware of attractive alternatives or simply perceive any alternative offer as less attractive than the current provider, they are more likely to remain in the relationship (Patterson & Smith, 2003), thus ensuring stability and profits (Visnjic et al., 2017). For providers therefore, a key to capture the value from advanced

services can be in identification of a customer segment where the provider has comparative advantage in contrast to competition. In search of improved attractiveness of offering, and higher customer loyalty, a need exist to customize both the service-content and service-delivery processes to individual customer needs when selling advanced services (Rabetino et al., 2017; Sjödin et al., 2016; Tuli et al., 2007).

2.2.4. Explicit contracts

In the context of advanced services, contracts can be formulated to explicitly state in the present how various future situations will be handled (Lusch & Brown, 1996; Jap & Gunesan, 2000; Reim et al, 2018). Examples of such contracts include price inflation clauses with regard to actual costs and performance guarantees that address solutions failure or even penalties (Hou & Neely, 2018; Reim et al, 2016; Visnjic et al, 2017). Explicit contracts can increase the potential for financial performance in several ways. For example, they can reduce uncertainty concerning behaviors and outcomes by providing formal rules and procedures to govern the relationship (Reim et al, 2018; Smith et al, 2014). If the parties are able to develop clear guidelines on specifying the roles and obligations of both parties, this can improve coordination and thus increase the potential of developing stable routines that ensure superior performance (Rönnerberg Sjödin et al, 2016). In addition, a customer would have to consider the legal and economic consequences of violating explicitly written contracts. Therefore, explicit contracts serve as deterrence against exploitation in the form of opportunistic behavior by customers (Reim et al, 2018). On the other hand, explicit contracts can also reduce the relational properties (e.g., trust and relational commitment) that facilitate long-term financial performance (Kohtamäki et al, 2012). Contracts that cover many contingencies may be overly complex and may provide little flexibility for both parties seeking to co-create value by constantly improving the underlying processes and activities in pursuit of a win-win outcome (Rönnerberg Sjödin et al,

2016). This may make it difficult for providers to reach optimal outcomes, thereby reducing their potential to retain existing relationships and develop new lines of revenue. Furthermore, since explicit contracts signal to both parties that the one does not trust the other, the parties are likely to be wary of experimenting with new ways of achieving outcomes that stifle innovation and the potential for generating efficiencies (Visnjic et al., 2017). Thus, it is possible to speculate both positive and negative effects of explicit contracts on a provider's potential to achieve higher financial performance.

To summarize our theoretical discussion, we adopt a configurational perspective in order to obtain a richer understanding of the interplay between different governance conditions such as service innovation, perceived switching costs, attractiveness of alternatives and explicit contracts. To study these issues, we apply fsQCA methods to identify empirically validated governance strategies in advanced service provision and to explore its implications for financial performance. In the following chapter, the methods used are further described.

3. Method

3.1. Sample and data collection

To investigate the required capabilities for provision of advanced services, we have based the study on a sample of 1000 manufacturing firms from Sweden. Firms were randomly selected from a population of companies in three diverse manufacturing industry segments. Specifically, firms were selected from the industries with SNI code 26 (manufacture of computer, electronic and optical products) 27 (manufacture of electrical equipment), and 28 (manufacture of machinery and equipment). These segments have been found to be prominent in servitization research (e.g. Baines et al, 2009; Parida et al., 2015; Kohtamäki et al, 2013). Furthermore, to ensure that we do not include micro-enterprises that are not likely to manufacture products and provide advanced services, we selected only those companies with more than 20 employees (Kohtamäki et al., 2013b). This sampling approach enabled us to include small, medium and large manufacturing firms and exclude micro-companies, since they tend to display lower levels of advanced service provision. The researchers sent a cover letter by post, which was designed to encourage participation in the study, and a questionnaire to the manager responsible for services in each firm. After the initial mailing, the researchers sent two further reminder letters to the firms chosen. From the sample of 1000 firms, the researchers received 135 replies from service managers. Three academic researchers and two manufacturing industry managers pilot tested the questionnaire to ensure that each item corresponded to the definition of the intended dimension being measured.

To identify the conditions relevant to revenue growth in advanced service providers, we selected a sub-sample that included only those manufacturing companies actively offering some kind of advanced service. The measure for advanced service offerings were an adaptation of Kohtamäki et al., (2013b) and included 15 items measuring how actively the firm was offering different advanced operational and R&D services. For example, one item captured how actively

the firm was offering the service of managing the customer's maintenance function. In selecting the subsample, we included only firms that had an average advanced-service offering score above 4 (on a 7-point Likert scale). Thus, from a sample of 135, only 50 firms were retained.

The questionnaire used established scales from the literature to measure the different conditions and the level of advanced service offerings in the firms sampled. The scale for service innovation was an adaptation of Menor and Roth's (2007) four-item scale ($\alpha = 0.95$) and included items such as "in comparison with our main competitor, the percentage of service innovation that met customer needs for our company is higher". The scale for attractiveness of alternatives was an adaptation of Picon et al., (2014) and included four items ($\alpha = 0.72$) measuring, for example, the extent to which "our customer believe that another company could benefit them more than my current company in achieving their product-service requirements". This study's measure of explicit contracts was an adaptation of Jap & Gunesan (2000) and included three items ($\alpha = 0.73$) measuring, for example, the extent to which their relationship with customers was governed primarily by written contracts. Finally, the scale for perceived switching costs was an adaptation of Picon et al., (2014) and included 4 items ($\alpha = 0.74$) such as "our customer would lose a lot of relational capital and other benefits that they have already paid for, if they switch to a new product-service provider". For all multiple-item measures, the questions were prepared on a 7-point Likert-type agreement scale, using the anchors 'strongly disagree' and 'strongly agree'. The outcome revenue growth variable was measured by secondary data from Orbis database by comparing calculations of the percentage growth in revenues from 2014 to 2015. Focusing on sales growth provides one key to advanced service providers and indicates a strong market presence (Kohtamäki et al., 2013b)

3.2. *Data analysis using fsQCA*

The study used fuzzy-set qualitative comparative analysis (fsQCA) to analyze the relationship between the set of causal variables (service innovation, attractiveness of alternatives, explicit contracts, and perceived switching costs) and the outcome variable (revenue growth). The software used was fsQCA 2.5 (Ragin & Davey, 2014).

Qualitative comparative analysis has two key advantages over traditional analysis techniques. First, QCA supports equifinality, which means that different paths or combinations can produce the same outcome. More specifically, using Boolean algebra, fsQCA identifies the configurations of conditions that lead to a specific outcome. Second, QCA allows asymmetry, which means that the presence and the absence of the outcome, respectively, may require different explanations.

fsQCA requires the calibration of all conditions and outcomes (Ragin, 2008). Calibration draws on theoretical and substantial knowledge to produce a fuzzy-set score that relates to the degree of membership in a set. To generate these scores, the study specifies the threshold for full membership of the condition (which obtains a fuzzy score of 0.95), full non-membership (fuzzy score of 0.05), and the crossover point (fuzzy score of 0.5), where the condition is present and absent in the same measure. Following Fiss (2011) and Ford et al., (2013), this analysis calculated the cut-off points for each of the conditions and outcomes on the 10th, 50th, and 90th percentiles respectively.

4. Results

4.1. Necessity analysis

The first step in a study using fsQCA is the analysis of necessary conditions. Conventionally, a condition or a combination of conditions is ‘necessary’ or ‘almost always necessary’ if the consistency score exceeds the threshold of 0.8 (Schneider et al., 2010). Table 1 shows the results of this analysis. Notably, none of the conditions is necessary for the presence of advanced service offerings because they do not exceed the threshold of 0.8.

[Insert Table 1 here]

4.2. Sufficiency analysis

In the next step, a fsQCA study carries out a sufficiency test through the truth table in order to obtain the possible configurations that explain the outcome of advanced service offerings’ presence. In this study, the frequency threshold is 1 and a consistency threshold is 0.79, which means that only those configurations that have at least one case are empirically relevant.

Table 2 shows the possible causal configurations leading to the presence of financial performance for advanced service providers. These solutions incorporate all the logical remainders that, lead to the presence of the result (Ragin, 2008). The analytical models present three casual configurations that lead to the presence of financial performance. These three configurations show a consistency score ranging from 0.79 to 0.77, which means that they are sufficient to produce the outcome. Ragin (2008) recommends using a consistency cutoff of 0.75, which means that any causal configuration with a consistency greater than or equal to 0.75 is sufficient. Coverage, which ranges from 0 to 1 (Ragin, 2008), measures the extent to which the solutions explain all cases of presence of advanced service offerings. The overall solution coverage for the presence of financial performance is 0.44, implying the coverage of a

substantial part of the sample. This analysis also reports measures of consistency and coverage for each individual configuration.

[Insert Table 2 here]

Table 2 organizes the configurations according to their rank in terms of raw coverage, since higher coverage values indicate greater empirical relevance. For the description of the configurations below, the symbol * represents the logical operation AND, the symbol ~ represents the absence of the condition (e.g., low level of condition).

Service innovation strategy configuration ($si * \sim aoa * \sim ec$) shows that a combination of high service innovation, low attractiveness of alternatives and low explicit contracts is a sufficient condition for financial performance.

Relational strategy configuration ($si * psc * \sim ec$) shows that a combination of high service innovation and high perceived switching costs and low explicit contracts is a sufficient condition for financial performance.

Market-based strategy configuration ($si * \sim psc * aoa * ec$) shows that a combination of high service innovation but low perceived switching costs and high attractiveness of alternatives along with high explicit contracts is a sufficient condition for financial performance for advanced service providers.

5. Discussion and implications

Servitization is becoming an increasingly prevalent trend in practice as well as in academic research (Baines et al., 2017) yet insights into the specific paths that advanced service providers take to achieve financial performance are still largely lacking (Rabetino et al., 2018). To address this gap, this study ties into the relational view that competitive advantage in servitization is a result of inter-firm relations and the joint inputs from partners (Eloranta & Turunen, 2015; Dyer and Singh, 1998; Dyer et al., 2018). From this perspective, a key question concerns how providers can govern relationships with customers to enable the creation and capture of superior value.

This study applies a configurational perspective (i.e. fsQCA) to augment understanding of governance strategies that advanced service providers utilize in order to capture value from advanced service provision and to achieve superior financial performance. The configurational model proposes four conditions – service innovation, perceived switching costs, attractiveness of alternatives, and explicit contracts – whose presence or absence in various governance configurations shapes the performance of advanced service providers (e.g., Fiss, 2007; Sjödin et al., 2016). The analysis demonstrates that none of the four proposed governance conditions are necessary or sufficient on its own without considering other conditions, but rather that achieving financial performance for advanced service providers requires a more complex interplay among multiple conditions.

The analysis reveals three configurations or governance strategies followed by advanced service providers that achieve high financial performance. Aligned with insights from servitization (den Hertog et al., 2010; de Brentani, 1995; Kindström & Kowalkowski, 2009), we find strong support for the influential role of service innovation, which is present in all three configurations. This demonstrates the importance of superior service innovation in satisfying customer needs by continuously introducing new service products and processes – potentially,

a key to building profitable advanced service relationships with customers (Parida et al., 2015; Sjödin et al., 2016). However, capturing the value from service innovation can be a challenge, and it is not sufficient to focus solely on innovation; rather, successful advanced service provision may require the formulation of governance strategy configurations that take cognizance of varying conditions (Forkmann, Henneberg, Witell, & Kindström, 2017; Rönnerberg Sjödin et al., 2016; Vesalainen & Kohtamäki, 2015). This study makes a contribution by identifying three different strategies that advanced service providers use to achieve financial performance. Table 3 describes the key insights from these three strategies.

[Insert Table 3 here]

First, *innovation governance strategy* ensures competitiveness by building on superior service innovation capabilities (e.g. Sjödin et al., 2016). Hence, in this configuration, the level of service innovation is high, while the attractiveness of alternatives and explicit contracts are at low levels. Thus, firms following this strategy continuously deliver novel advanced service combinations that clearly distinguish them from competitors without requiring the support of formal contracts to capture value from innovation (Visnjic et al., 2017). Profiting from this strategy is possible given the rapid commercialization of innovation and the limited competition seeking to match the agility of the solution provider in producing new service innovations. Thus, the firm's capacity to effectively generate service innovations enables it to govern its partner network loosely (Adler, 2001), since the provider firm relies on its capacity to innovate and react quickly.

Second, we have identified a *relational governance strategy* where the advanced service provider capitalizes on high service innovation by tying the customer into longer relationships characterized by trust and openness, indicated by the high perceived switching costs and low

level of explicit contracts. Indeed, profiting from advanced service provision often requires repetitive interactions, trust, and openness that facilitate effective and efficient relational service transactions (Heide, Wathne & Rokkan, 2007; Kohtamäki et al., 2012; Nordin & Ravald, 2016; Reim et al., 2018). In a relational strategy, trust replaces explicit contracts as a governance mechanism, enabling relational learning and value co-production. Typically, these types of interaction are characterized by high switching costs due to co-specialization of assets and, in consequence, significant dependencies. Relational strategy may facilitate the creation of an interactive collaboration platform that enables value co-creation between manufacturer and customers in the interests of coping with dynamic market demands. In these types of instance, relying on contractual agreements that are too detailed could even hinder relationship development and adaption (Sjödin et al., 2016). Thus, in the context of advanced service provision characterized by complex exchanges and uncertainty, contractual mechanisms are difficult, ineffective and costly to utilize and, hence, firms have to rely on relationships, goodwill, trust, and judgement to capture the value of service innovation.

Finally, we have earmarked a *market-based governance strategy* in which the firm utilizes arm's-length market mechanisms to govern its network relationships. This strategy seems to work in conditions with low partner switching costs and multiple attractive alternative partners; it favors the use of explicit contracts to control relationships. Thus, instead of trust, this strategy relies on contractual mechanisms to control and capture value from high service innovations. Notably, this was the least prevalent of the configurations identified, working only in specific market conditions. For example, a greater emphasis on contracts may be advisable when customer relationships are new or there is a high risk of opportunistic behavior (Reim et al., 2018) In this case, providers are encouraged to govern customer relationships through standard agreements and templates to minimize the governance costs created by the use of contracts. Standard agreements and templates enable the customer and service provider to form

and manage agreements efficiently, but they require the exchanged advanced service solutions to be relatively simple and well defined ex-ante with relatively little information asymmetry – which is rarely the case. More often though, relational governance may be the preferred choice since the increasing pace of service innovation driven by digitalization is increasing volatility and dynamism in service provision (Cenamor et al., 2017).

5.1 Theoretical contributions

Drawing on the above discussion, this study offers several contributions to the literature on servitization and relational governance. By applying fsQCA, we are able to provide a more complex picture of diverse relational governance strategies adopted by advanced service providers. Thus, our results carry important implications for the literature on servitization generally and advanced service provision in particular.

First, we contribute to the servitization literature by illustrating how *applying the configurational approach helps explain complex linkages between advance service provision and financial performance*. Indeed, explaining how and why servitization leads to financial performance still remains an open issue in research, especially when considering the specific context of advanced service provision (Fang et al., 2008; Kohtamäki et al., 2013b; Visnjic Kastalli & Van Looy, 2013). For example, servitization researchers often refer to a service paradox where rising revenues from services are accompanied by decreasing profits, as increasing costs of service delivery erode margins (Gebauer et al, 2005). To add further insight into this domain, this paper builds on the foundational premise of configuration theory, which posits that the same set of causal factors can lead to different outcomes, depending on how such factors are arranged (Greckhamer et al., 2008). A strong argument can be advanced that drawing on configurational theory and fsQCA methods can further assist servitization researchers in studying the complex field of advanced service provision (Godmischeit and Faillant, 2018;

Sjödín et al., 2016) and in formulating detailed contributions concerning boundary conditions and performance links (Rabetino et al., 2018; Kowalkowski et al., 2017). For example, we contribute to this dialogue by indicating that focusing on understanding different relational governance strategies adds a critical piece to this complex puzzle of financial performance in servitization by suggesting how providers can structure their relationships to profit from continuous innovation and joint value creation with customers. Thus, this present study augments the emerging servitization literature by utilizing a configurational approach (Godmischeit and Faullant, 2018; Sjödín et al., 2016).

Second, this study contributes by adopting a relational theory perspective and *highlighting the role of relational governance strategies for servitization performance*. Although servitization research has been evolving steadily, reaching a significant number of publications, the literature is often criticized for being too phenomenon driven and lacking in explanatory theoretical perspectives (Rabetino et al., 2018). In this study, we contribute by applying the theoretical lens of relational governance to delineate varying conditions (e.g. explicit contracts, perceived switching costs) and configurations of relational governance strategies for advanced service provision. The diversity of governance choices inherent in these strategies demonstrates that advanced service providers can follow diverse paths to successful servitization. Notably, service innovation seems to be a key element in profiting from advanced service provision since it is present in all three governance strategies. Nevertheless, the way firms govern customer relationships in their efforts to capture value from service innovation does vary. For example, innovation governance and relational governance strategies are the most prevalent paths to performance. Yet, they follow different relational governance approaches – whereas innovation governance strives for loose governance and agile and continuous innovation leadership, relational governance seeks to profit from long-term reciprocal relationships and strong ties. By uncovering these various governance strategies, this

study complements the relational view that competitive advantage in servitization is a result of inter-firm relations and joint input from partners (Eloranta & Turunen, 2015; Dyer and Singh, 1998; Dyer et al., 2018).

Third, this study contributes by showing how *market-based governance strategies can leverage explicit contracts to profit in conditions of high competition*. A common research argument in the servitization literature rests on the need to build trust and to work closely with customers and partners to achieve higher performance (Reim et al., 2018; Kohtamäki et al., 2013). In contrast, our findings provide an alternative explanation to achieving higher performance through advanced service provision, i.e. a market-based governance strategy building on the use of strong contracts. There may be conditions where this strategy is particularly advantageous. For example, Reim et al. (2018) suggest that certain customers of advanced services are known to act opportunistically and that having explicit contracts can provide a much-needed control mechanism to mitigate such behavior and secure financial performance. Nevertheless, this strategy is the least prevalent of the three identified, and it may also be interpreted as a stepping stone for new customer relationships where the processes of designing and fulfilling contracts can usefully help to build trust over time (Reim et al., 2018)

5.2 Managerial implications

In terms of managerial implications, this study offers several recommendations. First, innovation must be placed at the top of the agenda for any servitization manager. Besides benefitting from innovation leadership, it is also a way to establish a brand image as a reliable long-term partner for advanced services, extending and adapting offerings in collaboration with partners.

Second, focus should be placed on improved analysis of tradeoffs with each strategy, especially when superior innovation is not feasible. Importantly, the tradeoff between

governing relationships based on trust and relational strategies versus contractual control is a key strategic dilemma for servitizing managers. This study provides further guidance on this governance choice by suggesting the primacy of relational strategies as a way to diversify offerings based on advanced service offerings. When such diversification is not possible given the presence of multiple attractive alternative partners, the use of explicit contracts may still shore up competitive positions and generate profits for a time.

Third, the attractiveness of alternatives is not really a controllable condition, but it nevertheless plays an important role and, so, managers need to take it into consideration when they enter a specific market with advanced service options, adopting stronger contractual safeguards to ensure that profits accrue in a competitive marketplace. Still, as customer relationships mature, providers can strive to become more actively involved in their customers' processes and to make their offerings more attractive over time.

5.3 Limitations and future research

Although the results of the present study open possibilities for future research, our contribution does have certain limitations. Future studies could benefit from including additional conditions that have the potential to influence servitization at the firm level (e.g., customer types, capability sets). Extending the present research by means of a longitudinal study would also facilitate the investigation of path dependencies in the development of relational governance strategies, explaining trajectories of organizational change in servitization (Lenka et al, 2018) and evaluating the impact of digitalization (Lerch and Gotsch, 2015). In addition, we invite future servitization research to include other performance variables such as customer satisfaction and loyalty to validate how certain service strategies are perceived by customers. Finally, this study underlines the importance of adopting a relational view on servitization both at the relational and ecosystem levels to study service interactions, knowledge

processing, value-creating processes and performance in ecosystems (Sjödin, 2018; Visjnic et al., 2018). Accordingly, this article seeks to encourage servitization researchers to build on the present findings in forging a better understanding of relational governance strategies and their relationship to advanced service offerings.

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TABLES AND FIGURES

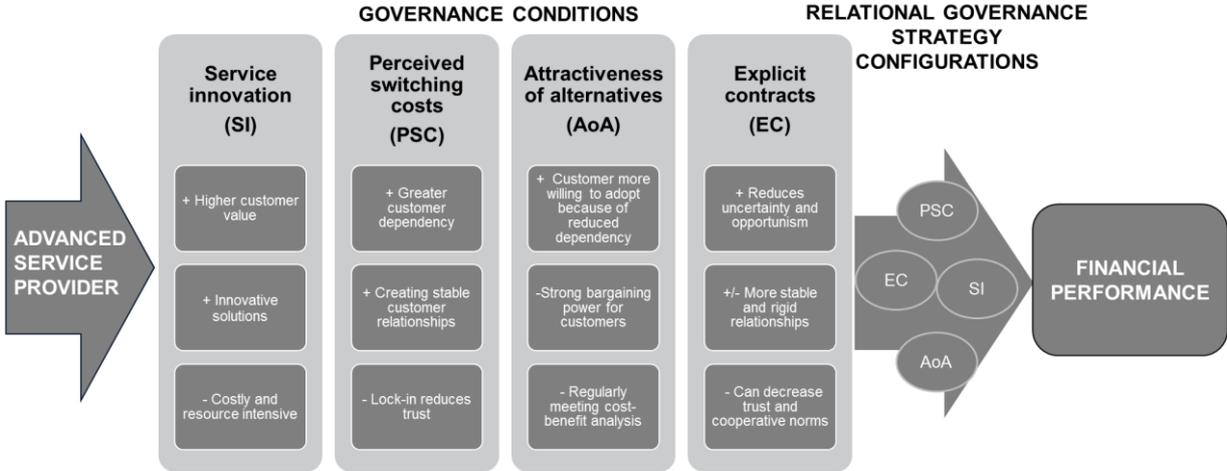


Figure 1. A configurational model of relational governance strategies and performance in servitization

Table 1 Analysis of necessary conditions.

	<i>Financial performance</i>	
<i>Conditions tested</i>	<i>Consistency</i>	<i>Coverage</i>
Service innovation	0.64	0.62
~Service innovation	0.62	0.65
Perceived switching costs	0.62	0.61
~ Perceived switching costs	0.64	0.66
Attractiveness of alternatives	0.60	0.64
~ Attractiveness of alternatives	0.64	0.60
Explicit contracts	0.59	0.61
~ Explicit contracts	0.65	0.64

Table 2: Governance configurations for presence of financial performance among advanced service providers

<i>Configurations for financial performance of advanced service providers</i>	Innovation governance strategy	Relational governance strategy	Market-based governance strategy
<i>Conditions</i>			
Service innovation	●	●	●
Perceived switching costs		●	○
Attractiveness of alternatives	○		●
Explicit contracts	○	○	●
<i>Consistency</i>	0.78	0.77	0.79
<i>Raw Coverage</i>	0.35	0.30	0.22
<i>Unique Coverage</i>	0.09	0.02	0.04
<i>Overall solution consistency</i>	0.76		
<i>Overall solution coverage</i>	0.44		
Black circles ‘●’ indicate the presence of conditions, and unfilled circles ‘○’ indicate their absence.			

Table 3. Summary of governance strategy configurations and their paths to financial performance

Governance strategy configuration	Description	Path to financial performance
<i>Innovation governance strategy</i>	Capturing value from high service innovation by continuously creating new value whilst keeping ahead of alternatives and limiting the use of explicit contracts.	<p><i>Most common path to performance</i></p> <p>*Agile and fast in introducing new service innovations adapted to customer needs.</p> <p>*Relying on loose governance requirements.</p>
<i>Relational governance strategy</i>	Capitalizing on high service innovation by tying the customer into longer relationships characterized by trust and openness, indicated by high perceived switching costs and low level of explicit contracts.	<p><i>Next most common path to performance</i></p> <p>*Relying on high trust and openness between provider and customer for value co-creation.</p> <p>*Ensuring co-specialization and relational adaptation with customer to create stable relationships.</p>
<i>Market-based governance strategy</i>	Capturing value from service innovation by utilizing arm's-length market mechanism in the form of explicit contracts to govern relationships in the presence of low switching costs and multiple attractive alternatives.	<p><i>Least common path to performance</i></p> <p>*Relying on contracts to govern and lock-in relationships in environments characterized by greater competition.</p> <p>*Ensuring stability and rules for interaction via contractual agreements to keep partnerships productive.</p>