Servitization 2.0: Evaluating and advancing servitization-related research through novel conceptual and methodological perspectives (Guest Editorial).

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1. Introduction

The transformation of manufacturing towards the integration of products and services has received increasing attention since the inception of servitization research over thirty years ago. After the publication of the opening article of Vandermerwe and Rada (1988), the field began to grow through the seminal publication by Oliva and Kallenberg (2003) and many other foundational contributions (Brax, 2005; Davies, 2004; Gebauer et al., 2005; Mathieu, 2001; Matthyssens & Vandenbempt, 1998). In the following years, servitization became nearly synonymous with companies moving from selling products and basic services to selling advanced offerings such as advanced services, customer solutions, and product-service systems (PSS) (Baines et al., 2007, 2009). These complex offerings, conceptualized within different streams with multiple disciplinary bases, typically include life-cycle services and involve changes in companies' business logic (Rabetino et al., 2015, 2017, 2018; Sousa & da Silveira, 2017). Recently, servitization research has increasingly incorporated contemporary topics such as digitalization, the Internet of Things, Industry 4.0, and circular economy business models. Digital servitization (Kohtamäki, Parida, et al., 2019; Paschou et al., 2020), an evolving substream, has emerged in the last five years and has brought new concepts from the incorporation of advanced services enabled by digital technologies (Sklyar et al., 2019) and platforms (Jovanovic

et al., 2021; Tian et al., 2021), which involves the adoption of an ecosystem perspective. Indeed, digital servitization accounts for a large part of the latest servitization-related publications.

As a phenomenon, servitization has inspired an increasing quantity of problem-driven studies that provide understanding and opportunities for future research, whereas knowledge has accumulated within related scholarly communities (Lightfoot et al., 2013; Rabetino et al., 2018). Although servitization seems to be moving from a problem-centered phase and entering a consolidation phase, it can still be considered a theoretically nascent field with dynamic boundaries (Kowalkowski, Gebauer, & Oliva, 2017). Alternative micronarratives emerged a few years ago after a period in which the debate was led by a contingent (strategy-structure-environment-performance) approach (Kohtamäki et al., 2020), later reinforced by the notion of business models and the need to fit different building blocks together to build different configurations. However, servitization research is dominated by exploratory studies (Rabetino et al., 2018) that propose tentative answers to "how" and "why" questions and possible new connections among phenomena, drawing on inductive qualitative research methods. Overall, multidisciplinary concepts and vocabularies have been converging but are not harmonized (Rabetino, Kohtamäki, Brax, et al., 2021); theoretical constructs are underdeveloped or ill-defined and are not widely shared. Under these circumstances, theoretical contributions often consist of opening new issues and encouraging their further study, proposing, at best, a suggestive theory through inductive theory building (Edmondson & McManus, 2007).

How should servitization research develop in the future? After a phase of explosive research accumulation, any scholarly field must take stock of its development (Bull & Thomas, 1993). Servitization is no exception, and this need is reflected in the recent steep growth in the number of papers critically reflecting on the past and future development of the servitization literature (Luoto et al., 2017; Rabetino et al., 2018; Raddats et al., 2019). Indeed, there is a need to discuss how to

consolidate the growing servitization literature even further. Acknowledging these circumstances, a plurality of voices have contemporaneously expressed the need to introduce new perspectives, question the dominant underlying assumptions, and endow servitization-related research with a more significant conceptual component (Kowalkowski et al., 2015; Luoto et al., 2017; Rabetino et al., 2018). Bigdeli et al. (2017, p. 12) identified two paths for conceptually developing servitization-related research: 1) moving towards "a stronger infusion of generic theory into the servitization debate" and 2) remaining focused on the exploration of "servitization in action through the lens of the theoretical framework". Scholars have also called for building bridges across servitization-related communities while looking for synergies, a shared understanding of the key research themes, and more significant knowledge accumulation within and across research streams (Lightfoot et al., 2013; Rabetino et al., 2018; Tukker & Tischner, 2006).

While there seems to be explicit agreement among community members concerning the need to develop the servitization literature further, different perspectives also exist on how that development should progress. Consequently, servitization research is simultaneously seen as requiring more theory-driven approaches, more methodological rigor, more practical relevance, and more forward-looking approaches (Baines et al., 2017; Bigdeli et al., 2017; Rabetino et al., 2018). However, no single correct answer exists; alternative paths should be mapped and discussed (Kohtamäki, Henneberg, et al., 2019), and concrete platforms for the debate are needed. The debate becomes even more relevant when understanding the critical issues related to the domain's evolution implies integrating perspectives from various servitization-related streams, such as PSS (Tukker & Tischner, 2006), complex product systems (CoPS) (Davies & Brady, 2000), and customer solutions (Macdonald et al., 2016). Indeed, academic domains progress through social processes from which their members collectively build and legitimate the field (Whitley, 1983, 1984). Domains "…are broad categories of study within which specific constructs, theories, and/or procedures can be

articulated. Different domains often have 'different purposes, questions, information, concepts, theories, assumptions, and implications' (Elder & Paul, 2009, p. 21). Domains are socially constructed, meaning that the academic or practitioner communities decide what a domain entails" (MacInnis, 2011, p. 141).

This Special Issue (SI) aims to discuss future ways to develop the field, including the debate on alternative theoretical lenses, opportunities for theory development, the interplay between servitization-related fields, and approaches with which to address key research questions/issues in the field. In this context, this guest editorial integrates servitization scholars' opinions and presents some avenues to support the servitization domain's collective construction concerning its future conceptual and methodological development. After this introduction, Section 2 discusses some central elements determining research orientation, knowledge accumulation, and the development of scientific domains, such as the notion of theoretical contribution and the tension with practical relevance in problem-driven fields, approaches to theorizing, and how the evaluation standards for assessing such contributions emerge in different scientific communities and impact theorizing strategies. In Section 3, we present the methodology for identifying the key informants among the servitization community members and collecting information based on a questionnaire structured in line with the topics introduced in Section 2. Next, Section 4 presents an analysis of the community members' opinions, including issues related to the theoretical and methodological development of future research on servitization and the identification of issues of practical and managerial relevance. Section 5 introduces the articles in this special issue. Finally, Section 6 offers concluding remarks and proposes potential avenues for guiding the future development of servitization research.

We hope that this special issue provides one of many possible platforms for stimulating dialogue and constructive debate. The goal is to offer insights and trigger discussions into the opportunities and challenges for further developing servitization-related research.

2. On the development of problem-driven scholarly domains

2.1 Theory development in applied and multidisciplinary scholarly domains

Although they play different roles in different scientific domains, theory and theory development are essential for understanding how research progresses, knowledge accumulates, and, in turn, how scientific fields evolve. The literature discussing what a theory is or what it is not, defining what a theoretical contribution is, or describing alternative theorizing and theoretical contribution assessment approaches is vast, and it involves many publications (DiMaggio, 1995; Sutton & Staw, 1995; Weick, 1995; Whetten, 1989). Indeed, concepts such as theory development and theoretical contribution are also part of an applied domain agenda, with nuances and controversies, as it makes its way towards more mature research. Thus, even in applied disciplines, "…theory is the fundamental engine that drives the creation of knowledge" (Boer et al., 2015, p. 1246), and "…is an important part of what separates management researchers from management practitioners or from business journalists" (Makadok et al., 2018, p. 1542).

Alternative approaches exist for theory development (Suddaby et al., 2011), grounded in different paradigmatic assumptions (Gioia & Pitre, 1990; Rabetino, Kohtamäki, & Federico, 2021) and methods for constructing research questions (Alvesson & Sandberg, 2011). Diversity results in various types of science and creates a variety of implications for new knowledge production (Kilduff et al., 2011). In this context, theory development may involve incremental and revelatory insights

(Corley & Gioia, 2011) from theory building, theory testing (Colquitt & Zapata-Phelan, 2007; Sutton & Staw, 1995; Thomas & Snow, 1994), or theory elaboration (Fisher & Aguinis, 2017).

Thomas and Snow (1994) characterize theory building as the step before theory testing and suggest a typology concerning both the purpose (description, explanation, or prediction) and the focus (theory building or testing) of theory generation. For theory building, description implies identifying the key concepts, variables, or constructs (the "what"). Explanation, instead, relates to the specification of how and why these key concepts are related. Third, prediction implies the determination of the boundaries of the theory and the conditions under which a theory holds (the "who", "where", and "when"). In theory testing, description implies the measurement and validation of key constructs, while explanation entails establishing relationships among concepts (variables or constructs) through hypothesis testing and large samples. Prediction involves a confrontation between alternative competing theoretical perspectives by implementing crucial experiments.

Alternatively, Colquitt and Zapata-Phelan (2007) suggest that an empirical article can provide a significant theoretical contribution by being robust in theory building, theory testing, or both, and they recognize various degrees of theory building (Whetten, 1989) and testing (Sutton & Staw, 1995). They develop a bidimensional taxonomy of articles vis-à-vis their contribution, which includes five categories: reporters (low theoretical contribution in both dimensions), testers (high contribution only in theory testing), qualifiers (partial contribution in both dimensions), builders (high contribution only in theory building), and expanders (high contribution in both dimensions).

Although both theory and observation can be a starting point for theorizing (Boer et al., 2015), field research methods (e.g., interviews, participant observations, surveys, archival analyses) dominate theory development in applied fields (Thomas & Snow, 1994). Under these circumstances, a

distinction emerges between developing indigenous theories and borrowing theories from the parent domain for use in the focal domain (Floyd, 2009; Oswick et al., 2011; Whetten et al., 2009; Zahra & Newey, 2009). Regardless of the mode of theorizing—top-down deductive or bottom-up inductive (Shepherd & Sutcliffe, 2011)—the combination of gap-spotting to construct research questions (Alvesson & Sandberg, 2011) and theory borrowing (Oswick et al., 2011) seems to be the most common and even an unavoidable approach to theory development in applied and problem-driven fields (Oswick et al., 2011; Whetten et al., 2009).

There are three forms of theory integration when borrowing theory (Floyd, 2009): (1) a simple application or replication with no substantial change; (2) a theoretical extension of the borrowed ideas into the new context; and (3) a transformation of the original ideas based on what was learned in the new domain. In any case, theories cannot remain unchanged when borrowing; otherwise, they may suffer from a lack of contextualization and low sensitivity to the level of analysis (Whetten et al., 2009), which can create blind spots for researchers, fail to capture the empirical complexity of the phenomenon studied, and be somehow detached from practical relevance (Suddaby et al., 2011). Moreover, an overdependence on borrowing may involve some shortcomings, such as limiting the generation of original conceptual contributions and excessively domesticating the imported theory for consumption within the field of knowledge that borrows the theory (Oswick et al., 2011).

With this in mind, Boer et al. (2015) describe the attempt to contribute to high-level theories borrowed from other fields (e.g., major management theories) as a common mistake in applied fields. They instead suggest focusing on mid-range or focal theories, which may be more relevant and specific. In addition, Edmondson and McManus (2007) link the theoretical maturity of previous research in the field (e.g., nascent, intermediate, and mature) and the research options for methodological design (including research questions, data and data collection methods, the goals of data analysis, constructs

and measures, and the expected theoretical contribution) and propose three archetypes of methodological fit in field research. While mature and nascent research are the opposite ends of a continuum characterized, respectively, by deductive and inductive (exploratory) theory building, intermediate research embodies a transition in which tentative propositions and models are offered, and hybrid methods are applied (quantitative and qualitative). Edmondson and McManus (2007, p. 1169) argue that "methodological fit promotes the development of rigorous and compelling field research". The fit of elements in the research design complements Boer et al.'s (2015, p. 1231) suggestion that "consistency between ontology, epistemology, and claimed contribution" is essential.

2.2 The contribution and its assessment: rigor vs. practical relevance

Regardless of the target publication outlet, academic studies are assessed based on how they contribute knowledge to their scientific discipline and how that knowledge can be applied to a profession's practice (Van de Ven, 1989). However, there is no explicit agreement on what a contributive piece of research is (Colquitt & Zapata-Phelan, 2007). Although many scholars have suggested that a good theory offers conceptual and practical value (Ketchen Jr & Hult, 2011), what is meant by contribution varies from discipline to discipline. In the social sciences, a robust theoretical contribution calls for predictive value instead of the principle of solving a given problem that drives research in engineering domains (Boer et al., 2015). Moreover, unavoidable trade-offs between theory-oriented and empirical research (Sutton & Staw, 1995) create tension between rigor and practical relevance (Bartunek & Rynes, 2014; Kieser et al., 2015; Toffel, 2016). Furthermore, divergences might lead to tension in applied multidisciplinary areas in which academics from both traditions, driven by different incentives, work together, leading to the paradox of the field being criticized by both insiders and outsiders due to dissatisfaction with the state of the theory and its practical relevance (Boer et al., 2015).

A theoretical contribution does not necessarily mean a paradigm shift (Kuhn, 1970) in Kuhnian terms or an entirely new theory; it can be an extension of an existing theory made at different levels and with varying degrees of radicalness or a combination of existing theories (Makadok et al., 2018). A contribution typically requires explaining how and why relationships between variables change, challenging the underlying assumptions supporting accepted knowledge, and clarifying the causal mechanisms that operate in particular conditions to explain the observed empirical events (Tsoukas, 1989; Whetten, 1989).

There are different conceptions of what relevant or contributive knowledge means (Carton & Mouricou, 2017). Bacharach (2009) suggests falsifiability (the possibility of empirical refutation) and utility (usefulness) as the most 'traditional' criteria. Nevertheless, this list might also include popularity (Zahra & Newey, 2009), novelty or uniqueness (Locke & Golden-Biddle, 1997), and interestingness (Davis, 1971). Ketchen Jr. and Hult (2011) suggest newness and relevance (what is new and why does it matter?). From a practical viewpoint, Bazerman (2005) highlights the need for practical and prescriptive implications. Thus, one key question emerges when considering the relevance dimension of managerially oriented research: are sections on managerial implications practical and useful for managers? (Bartunek & Rynes, 2010; Kieser & Leiner, 2009). In this regard, many papers fail to explain the importance of the research outcomes for practice. In contrast, many ideas are managerially irrelevant even before conducting the research (Caniato et al., 2018). Shapiro, Kirkman, and Courtney (2007) referred to these challenges as lost before and lost in translation.

In management, discussions on theoretical contributions and their scope are often organized based on Whetten's (1989) six elements of theory development (what, how, why, who, where, and when). Makadok et al. (2018) add two more elements and describe theorizing as a process that moves through

a theoretical space composed of eight elements: 1) research questions (the input), 2) modes of theorizing (how?), 3) levels of analysis (who?), 4) understanding of the underlying phenomenon (where?), 5) causal mechanisms (why?), 6) constructs/variables (what?), 7) boundary conditions (when?), and 8) outputs (explanations, predictions, prescriptions). Most contributions are incremental and based on changing one or two elements simultaneously (Makadok et al., 2018).

A contribution can first imply introducing new research questions (the input), which can be done, for example, by shifting from using problematization instead of gap-spotting (Alvesson & Sandberg, 2011). Another option (how?) involves a shift between inductive and deductive modes of theorizing, process-based and variance modes, static and dynamic modes, formal and informal modes, and analytical and numerical modes (Makadok et al., 2018). A third option introduces a new level of analysis (who?) or questions the utility/validity of a theory when applied to a particular level of analysis. Fourth, a contribution can change our understanding of a phenomenon or of where a theory is relevant (in which context). Fifth, contributions can introduce new causal mechanisms (why?), question the utility/validity of causal mechanisms, or compare or synthesize multiple causal mechanisms (for mediating/moderating effects). A sixth option includes introducing, questioning, or redefining the role of constructs/variables (what?). Seventh, both the options exposing inconsistencies in a theory or between theories and exposing, restricting, or relaxing a theory's assumptions impact boundary conditions (when?), an open avenue for a contribution (Makadok et al., 2018). Finally, the contribution may come from deriving initial outputs from a new theory, new outputs from existing theories or a combination of theories, and specific outputs from particular cases.

2.3 Scholarly communities, knowledge development and its implications for the consolidation of scholarly domains

The origin of much of the consummated research is found in the informal collegial networks among scientists (Crane, 1972) that enable the social organization and intellectual development of the domain (Vogel, 2012). In this context, a nascent community is formed around a phenomenon and attracts scholars who share interests (Hambrick & Chen, 2008), and the collective construction of common ground and boundaries for the scholarly domain materializes through social processes through which scientific community members contribute to building and legitimating the domain (Whitley, 1984).

The status of a scholarly field is determined through admittance-seeking movements. Such a process is built on three fundamental axes. First, the mobilization of the members (socialization and collective action) enables collective community building and domain structuration (Déry & Toulouse, 1996). The dialogical construction of vocabularies constitutes a prerequisite for collective dialogue to exist (Loewenstein et al., 2012). The second axis is differentiation from the parent and adjacent disciplines, and the third is legitimization as a scholarly domain vis-à-vis the adjacent disciplines (Hambrick & Chen, 2008). For the last two to occur, theorizing and producing contributive and impactful research may play a central role (Rabetino et al., 2018).

In the above dialogical relationships, theories and theoretical contributions are socially constructed between authors, editorial teams (Gabriel, 2010; Vogel, 2012), and readers (DiMaggio, 1995) in constitutive and contingent forums (Carton & Mouricou, 2017). Evaluative criteria are also socially generated by the community based on habits, practices, and conventions (Welch & Piekkari, 2017). "*Ultimately, the best assurance of quality is a lively, reflective and open debate about the standards by which we as a research community judge what is warrantable knowledge*" (Welch & Piekkari, 2017, p. 714). In this context, both the assessment of a contribution and the rigor-relevance debate also become subjective, even artificial. These discussions are perpetuated by tribes conformed to each

of the either/or positions. There is a definitional aspect to approaching the debate since the definition of rigor and relevance is socially constructed (Gulati, 2007).

Against this background, understanding how a scholarly domain such as servitization has evolved in the past and may evolve in the future requires recognizing the basic assumptions of the members of the various tribes, which will guide future theorizing and evaluation criteria (Rabetino, Kohtamäki, Brax, et al., 2021). In short, this editorial is a step forward to investigate these assumptions and instigate collective dialogue. Starting from the conceptual discussion and the general themes/dimensions we presented in this section, we asked community members for their views and thoughts and reflected on their feedback. The goal of the empirical study we conducted among the community members was to understand how servitization research has developed in the past and should be developed further. Below, we present the methodology we followed.

3. Methodology

Our analysis focuses on the viewpoints of scholars who actively publish in the servitization domain. To identify our community's most active members, we searched in Google Scholar by entering "label:servitization" in the search panel. We also used the "servitisation" variant, which returned three hits. These are the researchers who self-identify as members of the community. First, we selected the 65 scholars who, at the beginning of 2020, had more than 99 citations (to ensure a minimum level of academic involvement and experience). From this list, we excluded the five editors of this special issue and 20 other names after analyzing their publication lists (e.g., if servitization papers explain a minor share of their total number of citations, we consider them to be PSS scholars, or they do not publish in the English language). Second, we searched in Google Scholar by entering "label:product_service_system" in the search panel for cross-checking. We found two researchers

who use "product-service system" rather than "servitization" as a keyword but can be considered servitization scholars based on their publications. Finally, we added 25 scholars who contribute to the field but do not have a Google Scholar profile or do not use any servitization-related keywords in their profile (they use either generic or discipline-related labels such as marketing or operations management). We checked the most-cited scholars from an updated version of the database used in a previous bibliometric analysis (Rabetino et al., 2018). As a result, we identified 65 active servitization scholars whom we invited to a collective conversation.

A semistructured online questionnaire was designed to evaluate the state and future development of servitization research concerning theoretical, methodological, and managerial matters. The aim was to explore academics' views concerning the servitization domain's present and future development. We collected information based on the guidelines provided by similar endeavors in various fields of knowledge to understand the viewpoints of the servitization community's core members (Lyles, 1990; Schwenk & Dalton, 1991; Wilden et al., 2016; Zahra & Pearce III, 1992). In addition to some general personal questions (country, title, experience, and the servitization streams in which you work), the proposed questions are aligned with the concepts and typologies presented in Section 2. The questionnaire includes two main parts: 1) assessing the methods of theorizing and theory building in servitization and 2) exploring opportunities for developing contributive servitization research. The questions inquired about challenges and ways to develop and integrate the domain. The challenges include theoretical and methodological dimensions, relevance-related limitations, and ways to overcome them, and relevant issues and conceptual frameworks for the future. Most of the items include a closed question based on Section 2 to motivate brainstorming (Likert-type) and an open-ended question (through which academics can express their opinion freely). In addition, Colquitt and Zapata-Phelan's (2007) typology was included, and, based on that typology, scholars were asked to

evaluate the state of the current research on servitization concerning two dimensions: theory building and theory testing.

The survey was launched in the last week of January 2020. After four reminders, 45 researchers (13 full professors, 17 associate professors, 14 assistant professors, and 1 other position) responded to our questionnaire between January 27 and August 13. Respondents work in countries such as the United Kingdom (9), Sweden (7), Italy (7), Spain (5), Finland (4), and other countries (13). Two individuals stated that they are not servitization scholars but acknowledged having publications in this field. Except for two researchers, all respondents acknowledged having more than five years of experience in the research field, 18 of whom had more than ten. The responses were coded in Nvivo 13, although the coding was basic and mostly followed the questionnaire structure. Therefore, the content analysis did not include a data structure but was constructed from matrices. Next, we analyze the answers to our open-ended questions.

4. Quo vadis servitization? In search of a collective vision among the community members

We inquired about the significant developmental challenges in the future evolution of the servitization scholarly domain through different questions and identified two central themes. The first theme (Section 4.1) relates to servitization as a research domain in its own right. It includes discussions about the domain's boundaries, knowledge accumulation and integration, and the legitimization of the servitization domain. The second theme (Section 4.2) relates to the state of servitization research and involves debates about theorizing, methodological variety, and practical relevance.

4.1 Servitization as a scholarly domain

As shown in Table 1, two critical dimensions of this theme relate to 1) defining the domain's boundaries, knowledge accumulation, and integration of different service-related research streams and 2) legitimizing the domain.

Table 1 Sample verbatim extracts concerning boundary definitions, knowledge accumulation, domain integration, and legitimization.

Key areas	Specific issues	Main suggestions
Definition of boundaries, knowledge accumulation, and domain integration	"Lack of precision in describing the phenomena." (Associate Professor 5) "Development of a unified body of knowledge." (Assistant Professor 2). "… getting a consistent theoretical underpinning—currently I feel there are too many competing/rival streams of research in the area." (Professor 7) "Theoretical development of the field has been spotty and fragmented, which is understandable given the cross-disciplinary nature of the field and complexity of the phenomenon." (Associate Professor 2) "Lack of using existing contributions as a background for new contributions." (Associate Professor 16) "…servitization literature refers to concepts without defining them properly, and that generates confusion." (Associate Professor 17) "We now have specific conferences dealing with servitization, which contributes to integrating different research fronts: business models, service innovations, operations, digitalization. However, we do not have formal structures like a journal devoted specifically to servitization topics." (Associate Professor 7)	"The creation of 'boundaries' to state more clearly which cases, offerings, and business models can be considered as servitized and which not." (Assistant Professor 2) "First of all, the clarification of terms used in this field of research. Unification of different synonyms (e.g., hybrid product, functional sale)." (Assistant Professor 2) "Try to develop a common lexicon, so at least everyone is talking about the same thing when words such as 'advanced services', 'servitization', 'service infusion', 'solutions', and product-service systems are discussed. Make authors aware that related research is published in different streams from the one they may currently be trying to publish in." (Associate Professor 4) "Supporting already extant research. It seems to me that researchers on servitization just look at the servitization literature instead of comparing their findings with those from other operations management literature." (Professor 1) "…further elaboration of connections to base disciplines as well as within the servitization literature might help." (Associate Professor 2) "Consolidating research output by combining or juxtaposing results from existing studies." (Assistant Professor 9) "…a more interdisciplinary approach may be needed." (Associate Professor 17) "…further maturing of the methodologies and theory will enable combining insights between qualitative and quantitative studies and hence moving the field forward." (Associate Professor 13) "…through research done by multidisciplinary teams." (Other 1) "…with journals accepting cross-fertilization." (Professor 5)
Legitimization of the domain	"It will be to overcome the validity challenge. Servitization needs to follow other examples like TQM. There is a necessity to clarify its principles, conceptual frameworks, and tools." (Associate Professor 7)	"In order for servitization research to gain wider recognition also beyond the core field, theory building is crucial." (Assistant Professor 4) "That said, trying to better use existing theories (from outside servitization) also seems important to receive attention from prestigious journals (hence I 'agree' with the middle question)." (Associate Professor 4) "…increasing the quality at subject-specific conferences. We also need to consider how we have special sessions/tracks in other conferences to draw attention." (Assistant Professor 7) "Invite reviewers from research fields that have applied the theories in depth." (Assistant Professor 9)

4.1.1 Definition of the domain's boundaries, knowledge accumulation, and domain integration

The servitization community was formed around a particular phenomenon that attracted scholars with a shared interest. Service growth strategy "…was identified as a recurring phenomenon, and the boundary of the research domain was established during the last two decades of the last century" (Kowalkowski, Gebauer, & Oliva, 2017, p. 2). In this context, servitization research finds its roots at the intersection of different disciplines: marketing, operations management, innovation strategy, and engineering. Shaped by the legacy of these disciplines, servitization was born primarily as an applied domain in which pioneering studies leveraged the knowledge, style, and vocabularies of the above disciplines. Although some bridging and integration work exists, mostly done through literature reviews and bibliometric analyses, servitization-related research is still fragmented (Rabetino et al., 2018). Consequently, servitization scholars recurrently mentioned the lack of a clear definition of servitization as a phenomenon, an imprecise definition of its boundaries, and the evident fragmentation with many weakly connected streams, attributes that harm knowledge accumulation.

> "A key challenge might be that of giving a clear view of what is servitization and what is not. An example can be the relationship between servitization and the sharing economy." (Assistant Professor 2)

> "Researchers should try to integrate more research from all streams (also including the integrated solutions literature). [*The*] PSS community stands a bit apart, and efforts should be made to bridge the gap, perhaps a SI." (Associate Professor 5)

Some proposed mechanisms to address the situation include increased definitional effort (including a common lexicon), interdisciplinary work (e.g., coauthorship within multidisciplinary teams), and the creation of new collaboration platforms or the strengthening of existing ones (e.g., conferences and special issues with a multistream spirit).

> "More interdisciplinary 'cross-stream' teams, acknowledge relevant literature from all streams in one's own research." (Assistant Professor 4)

There is concern regarding the demarcation of domain boundaries, the idea that the boundaries with other domains have become blurred, and the potential impact on the evolution of the servitization research.

> "Servitization is fundamentally a change in the business model. I am not sure how long it will remain a separate concern—rather we might start to see new ideas evolving that it is a smaller part of." (Professor 4)

> "For example, is servitization only a trend or a significant theoretical contribution? Will digital transformation or ecosystems overcome servitization research? Therefore, the most important challenge is to overcome the validity challenge." (Associate Professor 7)

4.1.2 Legitimization of the servitization domain

Scholars are concerned about conceptual development, which is linked to goals such as servitization gaining legitimacy as a scientific domain and servitization scholars developing their academic careers. Although many highly cited servitization-related papers are published in highly ranked (e.g., AJG4) journals (Raddats et al., 2019), most of the published papers do not exceed the AJG3 level, and many are published in low-impact journals (Rabetino et al., 2018). For many (young) scholars, the legitimacy gap can make it challenging to publish in top journals and can affect their career development.

> "Unless theoretical rigor improves, servitization research is likely to remain largely irrelevant to more fundamental disciplines, as it is difficult to formulate contributions without having a deep understanding of the base discipline." (Associate Professor 2)

> "Getting more servitization research published in A-level discipline-based journals." (Assistant Professor 3)

> "Potential for publishing in level 4 journals is still not high. This may lead some scholars to consider more general management positioning of their works. SIs like the current IJOPM help." (Associate Professor 5)

> "Academic rigor and the lack of 4* journal publications and hence, acceptance of this subject among the top tier." (Associate Professor 8)

The above challenges may even have a common denominator. Researching topics that are also

trending topics in the root disciplines (e.g., digitalization) might create a predisposition for young

community members to return to these disciplines and could turn servitization into a blurred notion.

This tendency may be reinforced by the need for a clear long-term agenda among scholars who work

within the servitization domain but belong to—and whose promotion depends on publishing in—the

root disciplines' journals.

> "A major issue is that servitization does not form a domain that is acknowledged in business
> schools to be relevant for professor chairs. This makes it hard to find employment in an
> academic career if you are an expert in this field. One thing is that we identify so strongly
> with the term servitization; to get chairs, we should talk about management of industrial
> services or industrial service business or something like that." (Associate Professor 16)

Other critical issues emerging from the responses to the survey questions are related to theoretical

development, methodological variety, and practical relevance (Table 2).

4.2. State of servitization research

Although servitization research has a solid managerial component, theory development and

theoretical contribution are part of the agenda of the servitization community. However, there seems

to be no complete agreement on the meaning of and ways for developing theory in the future

(Kowalkowski et al., 2015; Luoto et al., 2017; Rabetino et al., 2018).

Table 2 Sample verbatim extracts concerning theory development, methodological variety, and practical relevance

Key areas	Specific issues	Main suggestions
Theory development	"Too much focus on the context." (Assistant Professor 11) "…too much useless theory, the necessity of always publishing novel proposals 'inventing' the connection to new procedures." (Professor 12) "…theories used to address different parts of the phenomenon and not taking a holistic approach." (Associate Professor 3) "There should be more theoretical foundations to servitization research. Also, lots of research presents a discrepancy between conceptual argumentation and methodological application by not considering causal complexity." (Assistant Professor 4) "Research works should be more strongly grounded in the theoretical perspective/perspectives they seek to adopt." (Assistant Professor 9) "…not linking the insights to fundamental disciplinary insights, such as service operations management (in general)." (Associate Professor 13) "The research is not using existing theoretical backgrounds, creating distance with other management communities. There are no conceptual papers published in top American journals, indicating that the research is still focusing on empirical questions." (Associate Professor 6) "A major limitation comes from the way the current academic system works; people need small victories all the time to succeed, rather than reward from major leverage of ground-breaking research." (Associate Professor 16)	"Bringing the different perspectives together. Theoretical openness. Let us use theory for explanation and relevance." (Professor 10) "To contribute to discipline-based theory, servitization would need to be positioned as a context for study, but this rarely is the case in prior research. I suggest teaming up with discipline-based scholars and adopting discipline-based theory to address the topic to be studied." (Assistant Professor 3) "To solve this, do what you are doing by having a special issue that makes authors return to these baseline theories and build upwards, rather than 'bolt on' a theory to some empirical data." (Associate Professor 4) "I believe the field has a lot to gain from a wide array of economic and sociological theories. Also, the field itself would strongly benefit if it would move from the somewhat descriptive servitization case studies to look at the phenomenon through different theoretical lenses." (Assistant Professor 4) "…to discriminate what really works, and to understand the whys, in order to move from descriptive and diagnostic research to predictive/prescriptive and normative frameworks." (Associate Professor 12) "Building on psychological theories to better understand the underlying psychological assumptions." (Professor 6) "…trying to better use existing theories (from outside servitization) also seems important to receive attention from prestigious journals...." (Associate Professor 4) "…more efforts could be developed for conceptual papers that systematize (rather than just review) the knowledge developed so far." (Assistant Professor 9) "Theoretical development and the use of more rigorous techniques." (Associate Professor 6)
Methodological variety	"…methodological rigor, lack of mixed methods." (Assistant Professor 11) "There is already enough descriptive qualitative research on the phenomenon." (Assistant Professor 1) "…over-reliance on case studies due to difficulty of access to data." (Associate Professor 3) "…hard to measure the effect/success of servitization initiatives, as it is a large and long-lasting transformational process." (Associate Professor 12) "Challenges in finding good and reliable measures/informants for quantitative studies (due to the complexity of the transformation)." (Associate Professor 5) "Availability of quantitative data and measures." (Associate Professor 8) "Too many papers based on case studies. Limited number of quantitative papers. Lack of scales (no agreement of definition)." (Associate Professor 9)	"Longitudinal and cross-level research." (Professor 6) "Many of the models are static in nature—we need more processual models and therefore need more longitudinal studies." (Professor 7) "In my view, that requires doing more extensive studies—either by numbers or depth. To not only talk about new phenomena—but actually study in-depth data." (Professor 8) "We need more rigorous methods that have high explanatory power." (Assistant Professor 3) "More rigorous application of methods, adopting of experiments." (Professor 6) "We need to do more extensive studies—where the positive bias in results is not evident. More critical studies—where we embrace results that are not positive towards servitization." (Professor 8) "…data access; an agreed common framework; and agreed measurement/indicators." (Associate Professor 3)

Key areas	Specific issues	Main suggestions
	"Conducting quantitative studies with secondary sources due to the lack of a good proxy for servitization activities." (Professor 13)	"More empirical (quantitative) studies needed. Measurement scales developed and widely adopted." (Associate Professor 9) "Developing empirical analysis with large samples in different countries. Longitudinal analysis to base tendencies." (Assistant Professor 6)
Practical relevance	"Managerial relevance is under pressure." (Professor 10) "Further evidence is still needed to convince practitioners of the basic premise of servitization: that it has implications for firm strategic and financial outcomes." (Associate Professor 2) "Finding novel and practically relevant research questions to explore." (Assistant Professor 9) "Managers often want to see 'numbers' and 'hard evidence' when you argue a point." (Assistant Professor 3) "…most learning on servitization stems from fairly articulated/bigger firms with a structured organigram and financial resources, either internally or with access to external financial resources. A lot of smaller to micro-firms in the industrial realm have difficulties emulating lessons from such companies." (Other 1) "Scientific journals are not read by the business community." (Associate Professor 9)	"Making it suitable for day-by-day actions. The topic is still studied with a theoretical perspective." (Associate Professor 15) "Aligning to emerging topics of high practical value such as AI, smart cities, the sharing economy, etc." (Associate Professor 5) "…more focus on real problems, less focus on 'publish or perish' academic imperatives; more initiatives for bridging the academia-industry gap, working together on real servitization projects." (Associate Professor 12) "…the research needs to involve more managers actively." (Assistant Professor 6)

4.2.1 Theory development

Servitization scholars agree that servitization research has been directed towards the 'relevance end' of the relevance-rigor continuum; servitization is an applied and problem-driven scholarly domain. At the opposite end, academics interpret rigor in terms of theoretical contribution and methodological sophistication. In this regard, empirical articles can contribute by building or testing theory (Colquitt & Zapata-Phelan, 2007). With noticeable nuance, participants seem to concur that most theoretical contributions to servitization are still 'low-level' and can be categorized as 'qualifiers' in the taxonomy proposed by Colquitt and Zapata-Phelan (2007). This type contains moderate levels of theory building and theory testing. Theory building is mainly done based on examining effects that have been the subject of prior theorizing, introducing a new mediator or moderator of an existing relationship or process, or explaining a previously unexplored relationship or process. In contrast, theory testing is based on grounding predictions regarding past findings or existing conceptual arguments, models, diagrams, or figures.

> "There is not much theory development or theory testing studies. Case studies still dominate, with an increase in empirical studies." (Professor 11)

> "Theorizing, since it is still a very practical field. Borrowing theories from other fields could be one way to do it." (Assistant Professor 8)

Indeed, as in many other problem-driven research fields, servitization scholars often borrow theories from parent disciplines. According to the respondents, theory borrowing frequently results in applying or replicating theories from the parent discipline to the servitization domain, where neither is changed very much from a theoretical viewpoint. Only occasionally can the outcomes be described as an extension or elaboration of theories and ideas from the parent discipline into the servitization domain. Rarely does borrowing result in theory elaboration or extension into the parent discipline based on what is learned from its application in the servitization domain.

In this context, several theoretical limitations are recurrently pointed out by servitization scholars. According to our interpretation, the following excerpt summarizes several of the recurring issues (other complementary opinions are shown in Table 3).

> "Overreliance on the servitization literature, rather than viewing servitization as a context within which to apply and extend theory. Alternatively, overreliance on the same theoretical frameworks (e.g., dynamic capabilities)." (Assistant Professor 1)

When thinking about the future of theorizing in servitization, the strongest but far from unanimous opinion among the respondents emerged around the idea that the field must prioritize deeper theory building. For many servitization scholars, there is a real need to publish more and in top-ranked journals, and as discussed above, scholars believe that theory building is the path to increasing the external visibility and legitimacy of the servitization domain and, in turn, advancing in their careers. Accordingly, this option could generate a virtuous circle, where the more publications in top-ranked journals there are, the more legitimacy and acceptance there is, and the more opportunities there are to publish articles in these journals. That is, it is a path that could also benefit the servitization community as a whole and not only some individual researchers. A widely agreed-upon way to prioritize theory-building suggests that the field must move towards a more substantial infusion of generic theory from parent disciplines into the servitization debate.

> "In order for servitization research to gain wider recognition also beyond the core field, theory building is crucial. There is much we can learn about organizational transformation through a servitization lens, but the theoretical underpinnings are sometimes lacking. Also, the field itself would strongly benefit if it would move from the somewhat descriptive servitization case studies to look at the phenomenon through different theoretical lenses." (Assistant Professor 4).
>
> "Supporting already extant research. It seems to me that researchers on servitization, just look at the servitization literature instead of comparing their findings with those from other literature." (Professor 1)
>
> "Using established theories to explain important phenomena in practice rather than making marginal contributions to theory." (Associate Professor 5)

The infusion of generic theories from parent disciplines is a viable choice that many respondents supported, but many scholars also offered some advice for implementing this approach.

"…research must go on also with exploration, since servitization in practice is evolving very rapidly and we need to maintain a clear view of what is going on and how the practice evolves, by mean of existing theoretical lenses but also by mean of newly developed ones." (Assistant Professor 2).

"Servitization should take advantage of generic theories, but not all theories are suitable. I think servitization scholars should keep the best frameworks and theoretical legacies from servitization research as they continue to explore servitization in action. However, the research should not focus on explorative action types of research work unless the context has something unique to offer." (Associate Professor 16).

Although it has many adherents, the idea that the field must remain focused on exploring servitization in action through the lens of a theoretical framework based on the existing servitization research had the smallest consensus.

"It's a field that is practical, and theory is good, but it's not so central. Application is all—if we happen on new theory, great, but it's not essential to being useful." (Professor 4)

Interestingly, various options are open and can coexist, and most likely, there is no single correct approach. The final path will also depend on the outcome of the collective decisions of the servitization community.

"It depends on what the primary goal is—if it is to publish in prestigious journals, then the first two [*deep theory building and theory infusion*]. If it is to increase managerial contributions, then the last [*theoretical frameworks based on servitization research*]. I believe we did fairly well with the last; I think it is time to focus on the first two" (Associate Professor 8)

As in other applied and problem-driven fields (Oswick et al., 2011; Whetten et al., 2009), the combination of gap-spotting to construct research questions and theory borrowing seems to be the standard approach to theory development in servitization research (Kowalkowski et al., 2015; Luoto et al., 2017; Rabetino et al., 2018). Gap-spotting and problematization through challenging the

established assumptions in the field (Alvesson & Sandberg, 2011) have received similar acceptance among servitization scholars as suitable theorizing options. However, the latter seems to receive slightly more support and slightly less disagreement among servitization scholars.

Finally, we also asked the participants to mention alternative conceptual approaches for developing future servitization research. Different theories and conceptual approaches from strategic management and information systems were briefly proposed as relevant for servitization research, including agency theory, transaction cost economics, institutionalism, paradox theory, microfoundations, organizational boundaries, and digital platform and ecosystem approaches.

4.2.2 Methodological variety

Concerning methodological issues and their limitations, the need for methodological variety emerges from the responses (Table 3). The transition from exploratory qualitative research to quantitative research is a recurring point among the respondents. Although servitization scholars acknowledge the significant obstacles of the lack of accepted scales/measurements and difficulty in data collection, many scholars call for more quantitative research. Alternatively, many scholars suggest using mixed methods and single case studies to perform more in-depth analyses of embedded mechanisms and microfoundational aspects. Perhaps there is some room for more discursive approaches (Korkeamäki & Kohtamäki, 2020), and there is also urgency linked to processual multilevel approaches based on longitudinal studies since servitization is a dynamic process, and the relations between different elements require special attention. Moreover, the use of mixed methods could accelerate passage towards the second stage of the progression pointed out by Edmondson and McManus (2007) in terms of methodological fit. The following excerpts

illustrate and somewhat summarize the opinions of the servitization community members (other complementary opinions are shown in Table 3).

> There is still an overwhelming dominance of qualitative, case study-based research. Of course, these are valuable contributions, but we need more large-N, quantitative research as well as longitudinal studies which can capture the dynamic, processual nature of servitization. On a more practical note, it is not always easy to get access to a sufficiently large number of organizations to conduct a quantitative study, and the long timespan for longitudinal studies is often prohibitive for researchers at the Ph.D. or Postdoc level." (Assistant Professor 4)
>
> "We need more quantitative analysis and longitudinal analysis regarding traditional servitization research topics. Regarding new research fronts, we need deeper case analysis." (Associate Professor 7)
>
> "There should be more emphasis on analyzing relationships between topics; I am not saying it should be causal, but we need more information about the mechanisms, impact, and so on. Not just concepts 'as is'." (Associate Professor 16)
>
> "There is always a problem with quantitative data, as it can often give answers that do not hold true for real-world businesses. We must keep mixed methods to retain rigor and relevance." (Professor 4)

Finally, scholars from adjacent applied disciplines have advocated action research studies as a promising methodological alternative (Coughlan & Coghlan, 2002; Oliva, 2019). A few respondents identified this methodological option as a potential avenue for the future of servitization research. Some see it as a necessity, while others have pointed to it as an option under certain conditions.

> "…to apply the theory in real cases and to increase action research projects to show results considering the financial evaluation of the new proposals (PSS) integrated into development/change projects to transform product-oriented companies into PSS providers." (Professor 12)
>
> "I think servitization scholars should keep the best frameworks and theoretical legacies from servitization research as they continue to explore servitization in action. However, the research should not focus on explorative action types of research work unless the context has something unique to offer." (Associate Professor 16)

The servitization domain is still theoretically and methodologically nascent (Kowalkowski, Gebauer, and Oliva, 2017). There is a need to move beyond qualitative, exploratory research (e.g., inductive case studies). While the field has proliferated across different disciplines, many studies replicate existing knowledge in an exploratory and descriptive manner. Therefore, it is no surprise that too much of the research still lacks a solid theoretical foundation (substantial theoretical extensions are rare) and lacks methodological rigor. Simultaneously, however, there is growing methodological pluralism, which suggests that the research field is maturing. In parallel to studies using quantitative methods to allow for formal hypothesis testing to add specificity, new mechanisms, or new boundaries to existing knowledge (cf. Edmonson & McManus, 2007), there are still opportunities (and a need) for rigorous—and innovative—inductive research, such as Colm et al.'s (2020) exploratory single case study on governance matching in solution development. Such research is also helpful for extending extant perspectives about a particular construct or challenging established assumptions that exist within the servitization domain.

4.2.3 Practical relevance

Although most articles discuss their managerial implications, managerial implications vary considerably in terms of their practical utility (Polzer et al., 2009). Servitization is an applied and problem-driven domain, but many scholars believe that research on servitization should increase the potential for responding to the challenges faced by enterprises and should offer managerial contributions with practical utility.

> "A lot of the guidance provided by academics is quite generic (necessarily to build theory), but this may not help companies with context-specific issues to address as well as more general ones." (Associate Professor 4)

"Managerial suggestions are not sufficiently actionable and 'concrete.' Research efforts may not be focusing sufficiently on the most pressing issues for managers." (Assistant Professor 9)

"Existing managerial contributions are applicable at a strategic level. Research needs to move to the operational level, creating tools and methods supporting managers in the daily application of servitization strategies." (Associate Professor 15)

While these limitations may hurt the credibility or legitimacy of servitization in the eyes of managers and people in industry, many academics also believe that most results and recommendations generally apply to the case of large corporations and that much more needs to be done to support the servitization processes of small and medium-sized enterprises. Here, service design, which has its origin in business practices but has made significant inroads into the academic sphere in the last decade, may serve as an example of a discipline with a strong focus on practical utility (e.g., Yu & Sangiorgi, 2018).

Finally, we also asked the community to identify relevant managerial topics for developing future servitization research. Not surprisingly, the most frequently mentioned topics are digital servitization (including AI, VR, and autonomous solutions) and platforms, modularity, configurations, sustainability, ecosystems and business models, and organizational change and change management. Surprisingly, traditional topics such as the service paradox and the relationship between servitization and financial performance may experience a revival in the new context dominated by digitalization. Additionally, two contexts, B2C and SMEs, received particular attention.

"…integrating the final customer and developing servitization in a B2C context." (Professor 5)

"Challenge to investigate servitization in SMEs and nonmanufacturing companies." (Associate Professor 9)

4.3 The rigor-relevance debate

The analysis presented above regarding theory development, methodological variety and rigor, and practical relevance opens a window for a short note on the rigor-relevance debate. According to our informants, rigor and relevance are both seen as necessary for moving servitization research forward in this context.

> "We need a combination of both pushing higher theoretical relevance while still retaining high practical relevance." (Associate Professor 5)

> "Combine rigor and relevance, adopt methodologies that accurately capture the complex nature of organizational reality, more large-N, quantitative research, more conceptually innovative research, e.g., applying sociological theories to explain the service transformation." (Assistant Professor 4)

> "It is sometimes seen as a field lacking rigor—so how to increase rigor while still being relevant to managers." (Professor 8)

Of course, there are also contrasts and nuances, and some servitization scholars believe that the debate may, unfortunately, represent an either/or issue.

> "This is a difficult issue, as to make research relevant to practitioners, it needs to not become too obsessed with 'deep' theory." (Associate Professor 4)

> "I would argue that they are the same problems management research faces in general, i.e., the trade-off between conceptually and methodologically complex, highly ranked publications, which practitioners rarely read, and the need for practical, implementation focused research, which is not as popular in highly ranked journals." (Assistant Professor 4)

"Academic relevance and practical relevance serve different subcommunities" (Daft & Lewin, 2008: 181). However, we concur with Gulati (2007: 775), who "…believe that the either/or debate is moot". "*[P]*ursuing separate tracks is a fine idea. In fact, it has the potential to provide greater opportunities to pursue synergies between rigor and relevance. But … we … should at the same time continue to look for a middle ground and seek out room for reconciliation between the rigor and the relevance tribes and subtribes." (Gulati, 2007: 781). An ideal position along the rigor-relevance continuum does not exist, as the continuum is collectively constructed. Although it is the community that ultimately defines its positioning, this definition will affect the possibility of publishing in specific journals and

the construction of legitimacy (vis-à-vis other disciplines and the industry). Gulati (2007: 775) proposes a way of "…bridging the artificial rigor-relevance divide through problem-oriented research grounded in theory."

Finding the right rigor-relevance balance is not a straightforward issue in any scientific domain, and the balance point may be found at various places along the rigor-relevance continuum for distinct scientific domains (Daft & Lewin, 2008). Thus, the servitization community must collectively find the answer that will ensure its healthy growth. For this, appropriate platforms that stimulate and enable dialogue are crucial (e.g., special issues and reputable scientific conferences). Thus, the community should strengthen participation and discussion in existing platforms (e.g., the Spring Servitization Conference and the International Conference on Business Servitization) and continuously promote new platforms for meeting and collaboration (e.g., special issues to address relevant topics and the inclusion of servitization-related tracks at reputable management conferences). Moreover, our community should seek rigor and relevance through boundary-spanning research focused squarely on phenomena of interest to managers, which calls for the joint development of a common agenda.

> "It would be nice to have a clear agenda (e.g., in conferences, special issues and cross-national surveys) regarding the future development of servitization." (Associate Professor 7)

Thus far, we have presented a succinct analysis that interprets the opinions of scholars. Extending opportunities for dialogue is at the core of our survey and the articles included in the present special issue of IJOPM.

5. The papers in this special issue.

The papers in this special issue mirror the collective views of the servitization community members during 2020. Thus, these articles address many of the issues discussed above, such as the need to build bridges among servitization-related communities and the adoption of multilevel and process-oriented approaches and alternative research methods. In doing so, the authors also propose many ways to advance the research on servitization. Next, we introduce these contributions.

A first theme identified in our inquiry among the servitization academics relates to the definition of domain boundaries and the avenues for integrating diverse research streams. Three papers in this special issue address these issues. First, Johnson et al. (in this issue) aim to conceptually reconcile research on PSS and integrated solutions. They offer an agenda that incorporates recent conceptual developments on platforms, ecosystems, risk, governance, and modularity and consider them to be primary underpinnings for theorizing. Second, the paper by Kreye et al. (in this issue) employs two cases to tackle a matter related to the domain's boundaries. They investigate supply chain impacts when manufacturers engage in business-to-consumer (B2C) servitization. Less frequent in manufacturing, B2C servitization-based business models have gained relevance in many industries, such as music (Vendrell-Herrero et al., 2017) or the electricity sector (Helms, 2016; Korkeamäki & Kohtamäki, 2020). Third, Brax et al. (in this issue) implement a literature review to examine the connection between (the degree of) servitization and performance and present a measurement framework based on configurational analysis, which sheds some additional light on the service paradox (Brax, 2005; Gebauer et al., 2005). The operationalization of relevant constructs brings definitional clarity, increases theoretical parsimony, and has become a necessary condition for supporting knowledge accumulation based on quantitative research in a field dominated by case studies (an issue related to methodological variety to which we return below).

Regarding the relevant emerging topics in the comprehension of servitization as a phenomenon, understanding firm boundary-related dimensions has become essential to the servitization community (Huikkola et al., 2020; Salonen & Jaakkola, 2015). Accordingly, the contribution of Bigdeli et al. (in this issue) uses a multiple-case study to develop an integrative conceptual framework based on the concepts of power, competency, and identity to examine how servitization disrupts organizational boundaries (internal and external) while connecting them to the root causes of primary boundary-related servitization challenges. Furthermore, drawing on modularity, paradox, and systems theory, Davies et al. (in this issue) develop a single case study from the defense industry to develop a process framework concerning firm boundary negotiations that considers the interplay between firm boundary decisions and the management of both efficiency and flexibility and their implications for the design of efficient and flexible modular systems in the context of advanced service delivery.

Likewise, digital servitization and platforms have become hot topics in servitization research (Rabetino, Kohtamäki, Brax, et al., 2021). Several articles in this special issue focus and report on these developments and consider related topics such as modularity and the role of configurations. Thus, Hsuan et al. (in this issue) develop an exploratory study to inductively build a theory on the strategic trajectories of product-service-software (PSSw) configurations, in which architectural design and modularity play a central role. In addition, Eloranta et al. (in this issue) conceptually connect servitization research with complexity management and explore complexity management mechanisms and the role of digital platforms in creating synergies between reduction and absorption mechanisms and as crucial instruments for managing and leveraging complexity in servitization.

As discussed above, the members of the servitization community agree on the need to use a wider variety of approaches and methods and to move the research to a stage at which multilevel and process-based designs and quantitative methods are extensively applied, observations that are also

part of the current debate in the field (Rabetino et al., 2018). Several articles in this special issue seek to address these calls. For instance, Golgeci et al. (in this issue) propose a cross-disciplinary conceptual multilevel framework that connects the servitization and global value chain (GVC) literature streams and illustrates the processes by which servitization may influence the structure and governance of GVCs, including the formation of new ecosystems. In another contribution, Struyf et al. (in this issue) combine a problematization approach and critical incident technique to develop a longitudinal multiple-case study resulting in a multilevel and holistic conceptual framework to scrutinize the complexity inherent in digital servitization, examine its primary persistent challenges and set conceptual bases for a mid-range theory. In addition, drawing upon a longitudinal single case study that involves a Chinese air conditioner manufacturer operating in the B2C and B2B contexts, Chen et al. (in this issue) analyze business model adaptation and innovation and build a process-based explanation of how digital servitization evolves and how to manage this process.

Complementarily, Gomes et al. (in this issue) introduce the role of history and present an integrative conceptual framework based on history-based management theories that highlights the need to include different levels of analysis to better comprehend servitization. This historical approach and the consideration of the industry's life cycle in explaining strategic moves (pivots) towards servitization/deservitization and its impact on performance are necessary dimensions typically neglected by the servitization literature.

Finally, Salonen et al. (in this issue) conceptually discuss how experiments relying on an interventionist logic and the application of fuzzy-set qualitative comparative analysis (fsQCA), a method that has recently gained traction among servitization scholars (Bustinza et al., 2019; Sjödin et al., 2016), can support theory building and testing in the servitization domain and generate better

causal explanations. They develop a set of potential research questions to be addressed in the future and provide guidelines on how these methods could answer many critical managerial questions.

6. Concluding remarks.

Servitization research seems to be moving out of the problem-centered phase and entering a phase of consolidation (Kowalkowski, Gebauer, & Oliva, 2017) characterized by a deeper examination of traditional topics (Brax & Visintin, 2017; Finne et al., 2013; Kowalkowski, Gebauer, Kamp, et al., 2017), the incorporation of theories from consolidated disciplines (Valtakoski 2017; Lee, Yoo, and Kim 2016; Reim, Sjödin, and Parida 2018), an increase in methodological and theoretical rigor without losing practical relevance, and more active mobilization of the members as manifested in the consolidation of influential conferences and an increase in international coauthorships (Rabetino, Kohtamäki, Brax, et al., 2021).

Servitization has reached a certain level of maturity and recognition as an established scholarly domain. However, some inhibitory (countering) forces may prevent servitization from becoming a fully consolidated field, which has happened during the evolution of other scholarly domains (Berry & Parasuraman, 1993). These forces will determine whether servitization will move towards either consolidating as a field, being reabsorbed by the root disciplines from which the domain was drawn, or falling into ostracism (Hambrick & Chen, 2008). Ultimately, the development of scientific communities involves a "dynamic cycling of adaptive exploration [*open to novelty*] and exploitation [*looking for rigor*]" (Augier et al., 2005, p. 93). Thus, a domain's consolidation involves risk-taking efforts from its members (Brown, Fisk, and Bitner 1994).

Although servitization will probably develop as a cross-disciplinary domain, consolidation calls for the strengthening of a shared identity, which requires a clear vision of what the domain is in terms of boundaries and where the domain is moving while supporting cross-disciplinary research and avoiding segmentation and dispersion, which might even end in a reversal of the consolidation process. It is necessary to strengthen existing platforms and create new opportunities for dialogue. Member mobilization played a fundamental role in constructing the domain's identity. Therefore, the further development of structures to assure mobilization and socialization is essential for defining the direction and speed of the domain's progress and constructing the domain's identity, boundaries, and content (MacInnis & Folkes, 2010). Strong structures will also enable the advancement and revision of the shared vocabulary and agenda, which is key to avoiding segmentation and dispersion while fostering differentiation from parent disciplines.

Servitization remains a theoretically nascent field. Consolidation also calls for increasing the domain's differentiation based on solid arguments about the domain's contributions (Merton, 1973) through rigorous and relevant research, which implies that leading researchers must convince other scholars that the domain's agenda is long-term (Hambrick & Chen, 2008). Indeed, collectively creating a vision shared by community members is crucial to avoiding segmentation and dispersion while fostering the scholarly domain's consolidation. While offering a complete agenda for the domain goes beyond this essay's objectives, we aim to provide a diagnosis of the state of the servitization literature to build the future collectively based on community members' interactions. Thus, we want to highlight some critical points and potential avenues for development that have emerged from the opinions of community members, which we summarize below.

- In recent years, there has been an apparent convergence in the terminology and vocabulary used by servitization community members (Rabetino, Kohtamäki, Brax, et al., 2021).

However, definitional aspects are still seen as a problem for the accumulation of knowledge, and there is a need to increase definitional efforts (including building a common lexicon). Conceptual clarity regarding definitions in terms of process, offerings, activity/practice concepts, etc., may support knowledge accumulation and increase the number of quantitative studies in the servitization field. Clarity includes the definition of relevant concepts and constructs (Brax et al., in this issue), which will enable a certain degree of replicability in the future, particularly when quantitative research increases its presence among publications in the servitization domain. Homogenization is also implicit and can bridge different streams of research within the domain, as discussed by Johnson et al. (in this issue). Additionally, establishing new collaboration platforms, strengthening existing platforms, and promoting interdisciplinary work (e.g., coauthorship in multidisciplinary teams) can support both definition and integration efforts.

- Servitization studies should increase their theory building and testing components to advance consolidation and legitimization (Rabetino et al., 2018), moving from being reporters and qualifiers to becoming builders and testers (Colquitt & Zapata-Phelan, 2007). While focusing on mid-range or focal theories (Boer et al., 2015), servitization studies must move away from the simple application or replication of theories with no substantial theoretical extension of the borrowed ideas into the new context or even a transformation of the original ideas by building upon what was learned in the new domain.

- The need to increase methodological variety and pluralism is another relevant issue. Different methodologies allow us to explore new research questions, a clear example being fsQCA, a methodology that has gained weight among researchers in the servitization domain, as exemplified and discussed by Salonen et al. (in this issue). In addition, conducting rigorous

action research studies and design science studies is a promising way forward, given the empirical, applied, and multidisciplinary nature of the servitization field (Coughlan & Coghlan, 2002; Oliva, 2019). This type of research would also address the need for practical relevance.

- As a community, we must have a deeper process-oriented view of servitization and digital servitization, implying a need for multilevel longitudinal studies and a historical approach. Once again, we must develop this view while preserving the rigor-relevance balance. Therefore, we may need to move beyond the simple description of processes towards making process-related theoretical contributions (Cloutier & Langley, 2020). From a methodological viewpoint, this means adopting a processual view and embracing alternative paradigms such as interpretative and critical realism to interpret meanings and deep mechanisms. Of course, a side effect may be a transition from multiple case studies pursuing replication logic towards in-depth single case studies (not always easy to publish, which calls for different, often missing, evaluation standards). Although methodological pluralism can be challenging (Midgley et al., 2017), a constructivist approach is needed to understand practices at the microlevel and link them to macrolevel phenomena. Furthermore, a genuine critical realist approach can help study the microfoundations of alternative configurations that result in equifinal business model options. In either case, context and history may be an essential part of the explanation rather than simple anecdotal dimensions that are candidates for elimination in the pursuit of replicability (Welch et al., 2011).

- The above issues also apply when integrating servitization and digital servitization. Digital servitization is often understood as a new stream or a substream, a stage that begins after servitization. However, servitization and digitalization are two intertwining processes that

evolve contemporaneously. The immersion of digitalization in servitization is complex and involves blending a nonlinear, punctual, and discontinuous digitalization process with a progressive and evolutionary servitization process (Chen et al., in this special issue). Moreover, although servitization is progressive and evolutionary, it may not be a continuous process, and companies can either reduce the pace of the process, freeze it, or even take deservitizing steps. Instead, although digital servitization may be nonlinear and discontinuous, it does not mean that it is necessary and only a disruption. Indeed, the seeds of digital service-based models can be found in history and embedded in past strategic decisions (Gomes et al., in this issue). However, we cannot afford to adopt a simplistic interpretation that assumes that yesterday there was 'traditional servitization,' and today, suddenly (while we were sleeping), there is 'digital servitization.' As concluded by Chen et al. (in this issue), "…*the early stage digitalization efforts on products (e.g., the introduction of PDM) are an indispensable antecedent for the later delivery of smart solutions with ecosystem partners*".

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