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B2B market segmentation: A systematic review and research agenda

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ABSTRACT

Segmenting industrial markets is a key challenge for the marketing field. More than 30 years of research has not produced comprehensive guidelines for developing robust B2B market segments; only a few studies have empirically tested the impact of segmentation and the literature today appears to be more fragmented than earlier. The present study integrates prior endeavors via a systematic literature review, scrutinizing 88 papers in detail. It develops a three-layer framework comprised of: (1) conceptualization of B2B market segmentation, (2) segmentation as a process, and (3) context. The authors use the framework to evaluate scholarly efforts during the 1986–2019 period and propose a broader view on segmentation as a continuous process. Marketers can benefit from the study by adopting four activities for segmenting markets: (1) pre-segmentation, (2) segmentation, (3) implementation, and (4) evaluation. Finally, the authors identify several gaps and offer a rigorous, practice-oriented research agenda, providing direction for academicians.

1. Introduction

Market segmentation, while not yet flawless, has provided value for industrial firms and been considered part of modern marketing for more than 40 years (Morgan, Whitler, Feng, & Chari, 2019). The key theoretical underpinning for segmenting the market is the presence of customer heterogeneity, which allows the identification of demand-based segments and firms to shape different offerings for those selected segments (Thomas, 2012). Segmentation provides direction for a firm's marketing strategy and resource allocation. The value of market segmentation lies in helping firms to adopt a position somewhere between the overgeneralized and over customized. Formally, market segmentation is "an ongoing and iterative process of examining and grouping potential and current customers whose needs are within-group similar but between-group different" (Mitchell & Wilson, 1998). B2B market segmentation is the "core of good industrial marketing" (Bonoma & Shapiro, 1983). Despite the perceived usefulness to B2B practice (Mora Cortez & Johnston, 2018), more knowledge about why B2B market segmentation is "particularly difficult to execute" (Boejgaard & Ellegaard, 2010) and "whom to address with which kind of content" is still needed (Müller, Pommeranz, Weisser, & Voigt, 2018).

Research provides three rationales for the hurdles in the domain of B2B market segmentation: (1) the vast majority of the market segmentation literature deals with consumer markets (Hutt & Speh, 2016; Wilson, 1986); (2) industrial marketers have been slower to adopt market segmentation beyond mere traditional industry segments (Clarke & Freytag, 2008); and (3) information searching and purchasing in B2B contexts are more formalized than in consumer (B2C) contexts, resulting in decision-making units (buying centers) with multiple actors (Müller et al., 2018). Such an added complexity in B2B market segmentation is challenging and may have helped to evoke a fragmentation and stagnation of the literature. Indeed, the value of B2B segmentation is pending demonstration, requiring further research inquiries (Thomas, 2012). Thus, it is imperative to develop a conceptual framework to harmonize and extend past research (Palmatier, Houston, & Hulland, 2018).

Uncovering the areas that have received little attention in research and integrating concepts that are commonly analyzed in isolation from one another are the triggers to constructing meaningful theory (Paul & Criado, 2020). One means by which to explore how research endeavors have approached the segmentation domain and how it has changed over time is conducting systematic reviews. This is particularly relevant for advancing extant fragmented B2B market segmentation literature, which neglects the long-term nature of the concept, limiting the progress in recent decades (Goller, Hogg, & Kalafatis, 2002; Thomas, 2016). The last major reviews of B2B market segmentation research were undertaken by Chéron and Kleinschmidt (1985) and Plank (1985), which shed some light on developing a normative model for B2B segmentation and warned about the common limiting view of segmentation as a marketing research issue as opposed to a strategic issue. Moreover, much has

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happened in business in the last 34 years, both in terms of practice and research, which positions the present study as necessary and timely. The specific aim of this article is threefold: (1) to engineer a parsimonious conceptual framework to assess the current state of research in B2B market segmentation; (2) to provide an integrated summary of the state of knowledge in the main aspects of segmenting B2B markets; and (3) to develop a research agenda for aspects of B2B market segmentation that builds on existing gaps and offers direction for future scholarly endeavors.

We address these objectives and provide three significant contributions to the marketing literature. First, we indicate that the B2B market segmentation research published in top-tier, reputable, and specialized journals over the past 34 years (1986–2019) has primarily focused on either particular elements of market segmentation (e.g., methods, segmentation variables, implementation) or emphasized the context for market segmentation (e.g., geographical scope) and provided marginal added depth to the conceptualization of B2B market segmentation, with only one article providing a more integrative view of B2B market segmentation (cf. Goller et al., 2002). The lack of conceptual consolidation in this area should be viewed as a significant gap in marketing knowledge.

Second, we develop a new, holistic framework for understanding B2B market segmentation, determining three theory-based layers (conceptualization, process, context). This provides a framework with which to scrutinize the state of the field, to establish knowledge gaps for both academics and practitioners, and to synchronize prior research efforts to identify elements that have received less attention and can direct future research. For instance, we show that B2B market segmentation is a continuous process that should be disaggregated into four concrete, intertwined stages: (1) pre-segmentation, (2) segmentation, (3) implementation, and (4) evaluation. Conversely, the marketing literature has commonly interpreted B2B market segmentation as a discrete, abstract idea that first becomes tangible in the implementation stage.

Third, building on the most representative findings for theory and practice, we propose a new research agenda for further B2B market segmentation endeavors. Summarizing extant knowledge within a domain of inquiry and assessing the collective evidence in a specific area of business are important phases in knowledge production (Palmatier et al., 2018). Gaining cumulative knowledge serves as a response to the tremendous speed at which marketing practice is changing, fostering the relevance of academic research and its validity to business practitioners (Snyder, 2019). Hence, we consider practical elements as essential to developing and prioritizing the directions for an updated research agenda in the B2B market segmentation realm.

2. Method

A systematic review is defined as “a research method and process for identifying and critically appraising relevant research as well as for collecting and analyzing data from said research” (Snyder, 2019, p. 334). Systematic reviews can be classified as (1) domain-based, (2) theory-based, or (3) method-based (Palmatier et al., 2018). This study represents a domain-based review of the topic of B2B market segmentation. Such reviews scrutinize, synthetize, and extend a body of literature in the same substantive domain (Palmatier et al., 2018). Periodic literature reviews in a domain are useful for consolidating academic efforts and enabling a more integrative view of knowledge. The importance of segmentation for marketing strategy and the number of unanswered marketing strategy questions and opportunities to impact practice have arguably never been greater (Morgan et al., 2019). The effective segmentation of industrial markets is the first step toward designing a marketing strategy, as the characteristics and needs of each segment will define the direction and focus of the B2B marketing plan (Hutt & Speh, 2016). A thorough systematic review in the B2B market segmentation domain is, therefore, more relevant than ever. Following Palmatier et al. (2018) and Snyder (2019), we adopted a rigorous process to conduct the review. The selected approach involved four stages: (1) design, (2) conduct, (3) analysis, and (4) structuring and writing the review (for further detail, see Snyder, 2019). The design stage focused on three key elements: (1) journal selection, (2) article selection, and (3) protocol, coding, and synthesis (see Web Appendix A).

2.1. Journal selection

Our review targeted peer-reviewed journals, which represent the principal source of knowledge regarding B2B market segmentation literature. Hence, practitioner manuscripts, textbooks, business books, and conference papers were excluded from the search.[1] To select an appropriate and representative sampling frame, we examined the most influential marketing journals in Baumgartner and Pieters (2003) in the field of strategic marketing, as identified by Morgan et al. (2019): *Journal of the Academy of Marketing Science* (JAMS), *Journal of Marketing* (JM), *Journal of Marketing Research* (JMR), *Marketing Science* (MS), *Journal of Retailing* (JR), and *International Journal of Research in Marketing* (IJRM). We also included the B2B specialized marketing journals: *Industrial Marketing Management* (IMM), *Journal of Business and Industrial Marketing* (JBIM), *Journal of Business-to-Business Marketing* (JBBM), and *Journal of Business Market Management* (JBMM). Moreover, we considered the ranked 3, 4, and 4* marketing journals (complementary to the previously stated set) in the latest version of the Chartered Association of Business Schools’ Academic Journal Guide (CABS, 2018), which are typical outlets for marketing strategy research: *European Journal of Marketing* (EJM), *International Marketing Review* (IMR), *Journal of Interactive Marketing* (JINM), *Journal of International Marketing* (JIM), *Marketing Letters* (ML), and *Marketing Theory* (MT). Finally, we included the *Journal of Business Research* (JBR; a ranked 3, multidisciplinary journal) for its impressive impact factor, current consideration for joining the FT50 list, and high relevance in marketing strategy research (e.g., Kienzler & Kowalkowski, 2017).

Thus, we formally included 17 journals in this review. We first conducted a keyword-driven search directly from their official websites for the 1986–2019 period, querying for articles containing the search terms “segmentation,” “market segment,” “segmenting,” “targeting,” or “segment” in the title, abstract, or keywords (similar to Kienzler & Kowalkowski, 2017). Due to differences in the search engines, we also explored two leading electronic databases (EBSCO and ABI/INFORM; similar to Watson, Wilson, Smart, & Macdonald, 2018) to supplement the original search based on the same keywords and procedure. We cross-checked the search using Google Scholar. This procedure delivered a total of 836 articles that were retained in an Endnote file for further analysis.

2.2. Article selection

Only research articles (i.e., no editorials or case studies) were included. Two experienced researchers (one of the authors and a senior B2B marketing scholar) independently examined all 836 articles to determine whether they should be coded as B2B market segmentation papers. Following Morgan et al. (2019), the article screening (i.e., title, abstract, conceptual framework, method, etc.) was executed based on four inclusion/exclusion criteria: (1) applicability to B2B or industrial settings, (2) focus on segmentation as a relevant element of the article, (3) the unit of analysis being at the firm or SBU level, rather than at a more granular level (e.g., salespeople), and (4) the article being

[1] Relevant content published in such sources is added throughout the text to complement the discussion but not outlined in the summary tables.

published during the 1986–2019 period.[2] The coders evaluated the four selection criteria using a screening metric (similar to Watson et al., 2018). They assigned 0 (not at all), 1 (medium), or 2 (totally) points representing the level of adequacy of every specified filter. If an article reached a score ≥ 5 (of a possible 8) from at least one of the coders, it was retained in the review. In case of discrepancy at the threshold level (4 vs. 5 points),[3] which was identified for 10 cases, a detailed analysis of the paper was conducted until consensus was reached. The average inter-rater reliability was checked with the proportional reduction in loss method, obtaining a satisfactory level of 0.85 (Rust & Cooil, 1994). A total of 88 articles (see Web Appendix B) remained in the review and established the final sample for further analysis. The final sample was stored in a new Endnote file.

2.3. Protocol, coding, and synthesis

Following the procedures recommended for systematic literature reviews (e.g., Snyder, 2019), we developed a protocol for coding and structuring the key elements provided by the articles in the spirit of advancing B2B market segmentation research. First, we created an Excel document to code (1) the purpose of the study, (2) how the paper relates to segmentation, (3) whether and how the paper relates to a specific stage in segmenting markets, (4) the focus of the paper (i.e., B2B/B2C or purely B2B); (5) segmentation method (if any), and (6) the key findings. Second, one experienced marketing researcher coded a randomly selected sample of 20 articles using the initial protocol to assess this tool with actual data. The reviewer made revisions and suggested the inclusion of a more specific characterization of papers based on: (1) the basic research approach (i.e., theoretical, qualitative, empirical, or analytical), (2) data analysis approach for empirical papers (e.g., regression, analysis of variance (ANOVA), descriptive statistics, etc.), and (3) argumentation approach (e.g., atheoretical/logic or data-driven, single theory, multiple theories). These recommendations are in line with prior literature review coding procedures (e.g., Morgan et al., 2019). Third, to ensure the trustworthiness of our revised protocol, one additional marketing researcher evaluated the tool and reviewed 10 randomly selected articles. The expert agreed with the usefulness and thoroughness of the protocol. We also examined the representativeness of the protocol in practice (Mora Cortez, Gilliland, and Johnston, 2019). Specifically, we presented our protocol in a discussion forum with more than 120 sales, business development, and marketing practitioners. In general, they agreed with our final approach.

Three knowledgeable researchers in B2B segmentation then coded each of the 88 selected articles. Inter-rater agreement ranged from 81 to 94%. Identified discrepancies were discussed until agreement was reached. To enhance the reliability of the evaluation procedure, two independent researchers with extensive knowledge in B2B marketing, both as editors and educators, also coded 15 randomly selected articles. The coding outcome was similar; only the writing and idea structuring styles diverged from the baseline coding. Intercoder reliability was controlled by the proportional reduction in loss statistic and achieved a satisfactory 0.87 level (Rust & Cooil, 1994). The final protocol and procedure, therefore, ensure the validity and reliability of our coding scheme.

Building on the last major reviews (i.e., Chéron & Kleinschmidt, 1985; Plank, 1985), an inductive content analysis approach was adopted (Watson et al., 2018). This process involved a continuous iteration between the extracted data and the proposed framework. Thus, the selected articles provided evidence that supported or weakened the evolving conceptual associations in the framework. Each article influenced the framework, which, in turn, influenced the understanding of the article. Moving toward convergence, a final conceptual framework for B2B market segmentation was developed. This integrative model organizes the concepts in a new, coherent system. The meaningfulness of the framework was assessed by a panel of 21 B2B academics (see Web Appendix C), obtaining an 8.1 average score on an 11-point scale from 0 (not at all) to 10 (completely).

Table 1
Sample overview by journal and period.

Journal	Group	1986–96	1997–2007	2008–19	Total (n)	Total (%)
JBIM	B2B	1	6	3	10	11%
IMM	B2B	14	16	11	41	47%
JBBM	B2B	1	0	4	5	6%
JBMM	B2B	0	0	1	1	1%
JBR	Reputable	2	1	0	3	3%
IJRM	Reputable	1	2	1	4	4%
EJM	Reputable	2	2	1	5	6%
IMR	Reputable	2	0	0	2	2%
ML	Reputable	0	1	0	1	1%
JIM	Reputable	0	0	1	1	1%
JAMS	Top-tier	2	0	0	2	2%
MS	Top-tier	1	1	0	2	2%
JMR	Top-tier	2	2	1	5	6%
JM	Top-tier	2	2	2	6	7%
Total		30	34	25	88	100%

*JR, MT, and JINT did not publish a single article on B2B market segmentation.

3. Findings: Descriptive analysis

3.1. Journals and publications over time

To highlight trends over time, we categorized the articles in the final sample into three balanced time periods:[4] 1986–96, 1997–2007, and 2008–19. As summarized in Table 1, the main outlet for B2B market segmentation research is IMM, with 42 articles, followed by JBIM and JM with 10 and six articles, respectively. In the reputable category, the journal with the most B2B market segmentation papers is EJM, with five. The most productive time period is 1997–2007, with 33 papers (37.5%), followed by 1986–96, with 30 papers (34.1%), and last, 2008–19, with 25 papers (28.4%). The decrement in the most recent period is a sign of waning interest in a topic among academics, while the literature stresses the relevance of B2B market segmentation for both practice and research (e.g., Müller et al., 2018). Fig. 1 also shows that, while publication in B2B journals seems steady over time, the trend lines for the overall sample, reputable journals, and top-tier journals in the period 1986–2019 are clearly downward. On one hand, there is no evident linear trend for B2B journals, since 16 articles were published in the 1986–96 period, 22 in 1997–2007, and 19 in the most recent time period. On the other hand, reputable journals published seven, six, and three B2B market segmentation articles, respectively, and top-tier journals published seven, five, and three articles in the same periods (see Table 1). While Morgan et al. (2019) and Thomas (2012) recently indicated that market segmentation is the heart of marketing strategy, Fig. 1 shows that researchers are abandoning B2B segmentation research. One reason for such a trend is the lack of direction for further research. This situation enhances the value of the current research endeavor, as the agenda developed identifies gaps in extant research. The main advancements on segmentation in modern times are centered on the methodological elements in quantitative research and the challenges for implementation. The following domain-based findings show a more diverse scope for advancement.

[2] We checked the year of publication as we found disparity (e.g., Hlavacek and Reddy's article in Google Scholar is listed in 1993, whereas the actual publication year is 1986).

[3] No other threshold differences were identified (e.g., 3 vs. 5 points).

[4] The last period was extended to September 2019 (the initial point of crafting this article).

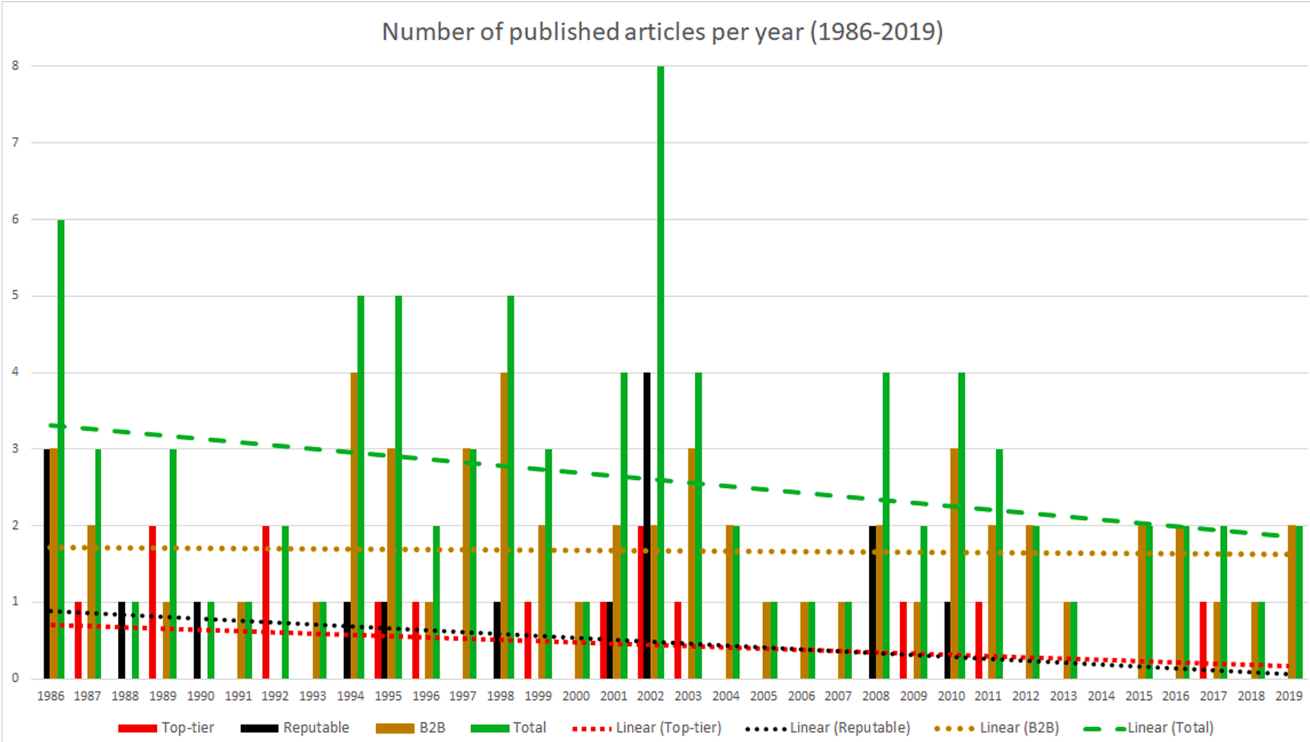

Fig. 1. Trends over time per journal type.

3.2. Article focus

The total initial pool was characterized by 89.5% (748) of the articles coming from general top-tier and reputable marketing journals. The B2B specialized journals represented only 10.5% (88), as shown in Table 2. Once the screening for the article selection was applied, the configuration changed significantly. In the final sample, the most representative group was the specialized B2B journals, which made up 64.8% (57) of the articles. Reputable and top-tier marketing journals only represented 18.2% (16) and 17.0% (15), respectively. The articles solely referring to firms as primary buyers were classified as *B2B*, and those concentrating on both consumer and business markets were classified as *B2C/B2B*.

Table 2
Sample classification according to grouping, focus, approach, and theory.

Sample classification	Total	
Initial journal pool characterization (n = 836)	n	%
Top-tier journals	211	25.3%
Reputable marketing journals	537	64.2%
Specialized B2B marketing journals	88	10.5%
Journal characterization (*n = 88)*		
Top-tier marketing journals (JM, JMR, JAMS, MS)	15	17.0%
Reputable marketing journals (JBR, IJRM, EJM, IMR, JIM, ML)	16	18.2%
Specialized B2B marketing journals (IMM, JBIM, JBBM, JBMM)	57	64.8%
Paper focus (n = 88)		
B2C/B2B	19	21.6%
B2B	69	78.4%
Paper categorization (n = 88)		
Theoretical/conceptual	19	21.6%
Analytical	7	8.0%
Quantitative-empirical	46	52.3%
Qualitative	16	18.2%
Theoretical foundation (n = 88)		
Atheoretical (logic/data-driven)	59	67.0%
Single theory	23	26.1%
Multiple theories	6	6.8%

*Studies with a mixed-method approach are codified as quantitative-empirical

Contrasting the original pool with the final sample, as screening out pure B2C papers was a relevant step in the selection process, shows a sign of the relatively low penetration of B2B research in the mainstream marketing science.

In addition, a non-parametric analysis was conducted to assess the relationship between article focus and CABS journal ranking. Based on Spearman's correlation, research on pure B2B market segmentation is significantly less likely (r: −0.270, $n = 88$, $p < 0.05$) to appear in top-tier publication outlets (i.e., JM, JMR, MS, and JAMS) than was research focusing on both B2B and B2C settings. This is in line with prior research (e.g., Kleinaltenkamp, 2018), which has shown how, in recent years, only 5–10% of the papers in the leading general marketing journals dealt with B2B markets. Fig. 1 also supports this trend in market segmentation, as it is observed that the linear scaling for publications over time is almost convergent for the total and B2B articles in the year 2019.

3.3. Type of research

Most of the studies are quantitative (46), representing more than half of the final sample (52.3%). This type of investigation uses empirical data in the form of surveys, experiments, and secondary data. The second predominant research design is theoretical, with 19 (21.6%) articles involving ad hoc conceptual analysis and incremental extensions from the prior literature. The third representative research design is qualitative, with 16 (18.2%) articles, entailing interviews and case studies. The least representative research design is analytical, with seven (7.9%) articles that are comprised of mathematical models often tested with simulated data or instrumental cases. Thus, empirical studies are the dominant force in B2B market segmentation research, with a total of 62 (69.7%) articles.

Furthermore, a cross-analysis of the research design type and the three structured time periods finds a significant association between the elements (*Likelihood ratio* = 29.21, df = 6, $p < 0.01$). Particularly, the different trends are (1) qualitative research moving from zero articles in 1986–96, through six in 1997–2007, to 10 in 2008–19; (2) quantitative research accounting for 23 articles in 1986–96, 11 in 1997–2007, and 12 in 2008–19; (3) theoretical research, represented by five articles in 1986–96, 12 in 1997–2007, and two in 2008–19; and (4) analytical research accounting for two, four, and one articles, respectively. Overall, the dominance of quantitative and theoretical/conceptual papers suggests that researchers have prioritized dealing with generalization issues rather than the contextual complexity involved in B2B market segmentation. The high embeddedness and rare occurrence of segmentation in practice calls for more case analyses and action research (Möller & Parvinen, 2015), and a benchmarking of the variables used to segment markets (Thomas, 2012).

3.4. Theoretical foundation

Based on Kienzler and Kowalkowski (2017) and Morgan et al. (2019), the classification of the theoretical foundation of articles is threefold: (1) atheoretical, (2) single theory, and (3) multiple theories. To be classified as theoretical (i.e., using one or more theories), articles had to purposively inform their theoretical foundation or anchor their conceptual framework or hypothesis development in a specific theory. Simply offering a brief review of market segmentation literature or mentioning a theory was insufficient. On this basis, 67.0% of the final sample was atheoretical, a high number indicating a rationale for the disconnection of segmentation from strategy (Chéron & Kleinschmidt, 1985; Hutt & Speh, 2016). For the theoretical articles (33.0%), we also examined the specific theories applied. The majority of these (79.3%) were used in a single B2B market segmentation study published in the 1986–2019 period. Thus, only six theories were used in two or more articles: Relationship Marketing Theory (4), Organizational Buying Behavior (4), Business Solutions Theory (2), Customer Portfolio Theory (2), Customer Value Theory (2), and Equity Theory (2).

A cross-analysis of the research design (conceptual, analytical, quantitative, qualitative) and the use of theory shows that there is no association between the elements ($\chi^2 = 0.414$, df $= 2$, p greater than 0.05). However, the groups also display internal heterogeneity. None of the MS articles in the top-tier group uses theory, for instance, and 66.7% of the JM articles use theory in the manuscript development. In addition, a non-parametric analysis indicates a marginally significant correlation ($r = 0.202$, $n = 88$, $p = 0.059$) between the time periods (1986–96, 1997–2007, 2008–19) and the use of theory. Thus, there is a subtle increment in the use of theory for B2B market segmentation articles over time.

4. Findings: Domain-based analysis

Fig. 2 offers the template for our analysis, following a practice-oriented three-layer configuration. The framework is derived from the literature review and based on issues commonly discussed in B2B market segmentation. The framework also shows considerations for which firms should account when segmenting industrial markets. This section follows the structure of the integrative framework. Overall, the framework depicts three layers (conceptualization, segmentation as a process, and context). Key is the four-stage process (middle-layer), which represents the main tenets of cumulative knowledge on conducting B2B market segmentation in the literature during the 1986–2019 period.

First, firms are required to *conceptualize B2B market segmentation*, which needs the establishment of (1) what is the view of the market (static vs. changing) and (2) what is the dynamism of segmenting a market (discrete vs. continuous). Once firms reach such an understanding, they can proceed with a *pre-segmentation* stage, discerning both (1) what is a market and (2) the purpose of segmentation. Then, firms are able to face the *segmentation* stage. Herein, they should (1) identify variables for segmenting, (2) choose a segmentation approach (model), and (3) select target markets. In the third stage, firms can conduct the *implementation* by (1) exercising leadership and assigning resources, (2) executing marketing mix adjustments, and (3) conducting a reorganization (if pertinent). Finally, firms conduct the *evaluation* of segmenting by analyzing changes on (1) customer satisfaction, (2) sales force performance, and (3) financial firm-level performance. The evaluation result affects the next segmentation cycle (see the dotted arrow in Fig. 2). This whole market segmentation system is influenced by (1) the scope of the segmentation (local vs. international), (2) market coverage (horizontal vs. vertical), (3) the type of offering (good, services, and solutions), and (4) offering status (new vs. existing).

4.1. Conceptualization of B2B market segmentation

4.1.1. The view of the market

Many of the existing and well-known *macro*- and micro-segmentation models (e.g., Wind & Cardozo, 1974) and the nested approach (Bonoma & Shapiro, 1983) start out with a “market,” which is assumed to be given (static). Some reviewed articles challenge this assumption by discussing the active influence of the multiple actors present in a market. Industrial markets are characterized by cooperation and adaptation among network actors (e.g., Clarke, 2009). In this vein, market segmentation is more than just a technique for analyzing the environment and allocating marketing resources; it is part of shaping the environment (Freytag & Clarke, 2001, p. 473). Hlavacek and Reddy (1986) stress that business history is replete with cases of existing competitors seeing market boundaries as static and losing the opportunity to identify new or emerging segments. Thus, the market (i.e., buyers, sellers, competitors, environment) itself is an active force influencing B2B market segmentation. Change is reflected in the constant transformation of what value is (Clarke & Freytag, 2008). How customers perceive value is changing over time due to the dynamics in the supply base, self-perception of their needs/wants, competitor activities, and general changes in the environment (Flint, Woodruff, & Gardial, 1997; Homburg, Steiner, & Totzek, 2009).

Ongoing segment monitoring is proposed as being important to capture market evolution (e.g., Dibb & Wensley, 2002). Segment monitoring takes the form of keeping a close watch on the changing conditions within customer industries and the subsequent implications for customer demands, competitor actions, and shifting customer preferences (Freytag & Clarke, 2001). However, monitoring for changes in segments is “inherently reactive” and deals with the past and present only, making no attempt to create a clear picture of how transformations are taking place or to predict “shifts in needs, segment sizes, or segment membership,” nor does it provide recommendations about how to react. Furthermore, such monitoring can be time-consuming and challenging as well as costly, and can be seen as too expensive (Blocker & Flint, 2007). This is in line with Söllner and Rese (2001), who claim that the “uniqueness of each individual makes it impossible to form absolutely homogeneous segments” (p. 23). Thus, they argue for “accepted heterogeneity in segments.” The origin for such differences relates to the principle of value. While value-in-exchange is objective and relatively static, value-in-use is subjective and relatively dynamic (Eggert, Ulaga, Frow, & Payne, 2018). Several studies (e.g., Freytag & Clarke, 2001; Homburg et al., 2009) have pinpointed changes in customer needs as the Achilles heel within segmentation, since a static market view seems to dominate. Blocker and Flint (2007) emphasize the dynamic nature of B2B markets. Even though B2B segments are dynamic, it does not parallel the high evolving pace of consumer segments.[5]

4.1.2. Market segmentation dynamism

The transformational essence of the market calls for a more continuous, process-based view on the temporality of B2B market segmentation. Some recent studies propose a different view on markets as they study a market in the making (e.g., Storbacka & Nenonen, 2012). Moving away from a discrete, event-based segmentation view (e.g., Ferrell, Lucas, & Bush, 1989; Kalafatis & Cheston, 1997; Nakip, 1999;

[5] We thank an anonymous reviewer for this comment.

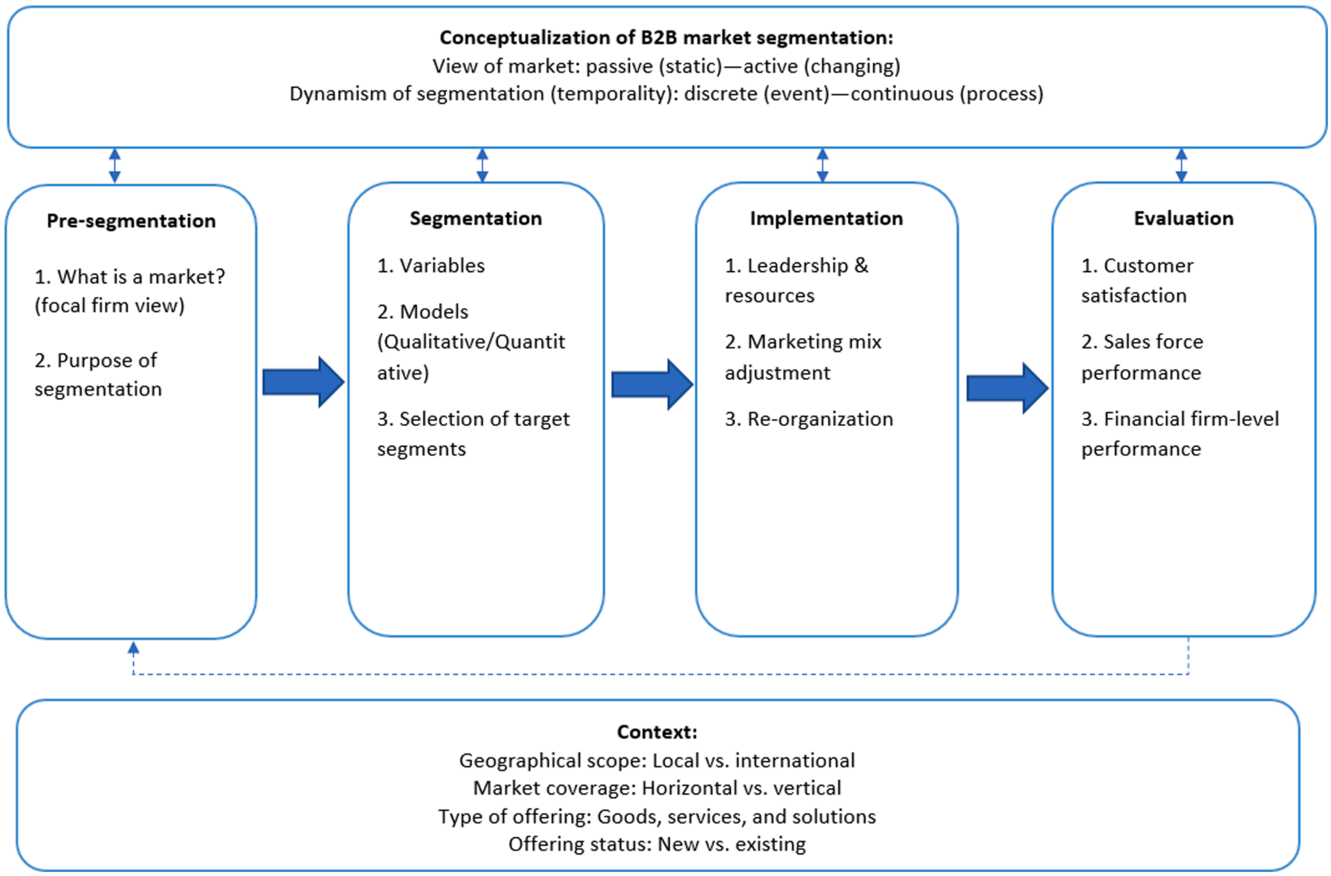

Fig. 2. Overview of B2B market segmentation in marketing strategy.

Sudharshan & Winter, 1998), a fundamentally more integral view on segmentation is needed (Clarke, 2009). The main idea is that segmentation is an "emergent and interactive process of shaping" (Harrison & Kjellberg, 2010, p. 784). Interactivity in market segmentation is based on a dyadic view that proposes that customer responses are being shaped through problem-solving negotiations between buyers and sellers (Freytag & Clarke, 2001). From this perspective, segmentation is constantly occurring as part of the interaction process and the unstable nature of industrial markets (Boejgaard & Ellegaard, 2010). In this vein, Harrison and Kjellberg (2010) raise an interesting question about situations where no markets exist. Here, segmentation foremost becomes a process of construction. Construction rests on interactions with customers and environmental influences, where these early customers develop needs in combination with the innovation of product characteristics.

The consequences of failing to adapt include staying in an unprofitable market, losing a unique position within a market, targeting segments that lack the growth and profitability of other segments, or targeting within-segment customers with an undesirable market offering (Müller et al., 2018; Harrison & Kjellberg, 2010). The literature has, therefore, called for the need to keep market segments under constant review and to gain information about potential changes; and evaluating and estimating how to react to change is a crucial, ongoing process (Clarke & Freytag, 2012; Mitchell & Wilson, 1998). This research stream offers different understandings of how firms interact and change with the market. For example, Blocker and Flint (2007) claim that most segmentation research has depicted static snapshots of a moving marketplace with segmentation as an isolated event. These authors also indicate that to remain competitive in changing markets, it is essential to learn about the ongoing transformations to lead a more dynamic pre-segmentation strategy. Complementing a more recurrent temporality of B2B market segmentation, some authors suggest taking future customer value into consideration (e.g., Balboni & Terho, 2016; Sood & Kumar, 2017). From practice, it is not uncommon to find B2B firms that have not segmented a market in more than 10–20 years. So, adopting a more active view of the market and a more continuous view of segmenting B2B markets is crucial for marketers.

4.2. *Segmentation as a continuous process*

4.2.1. *Pre-segmentation*

What is a market? (focal firm view). While many articles focus on segmenting markets, few explain what a market is or which market they are segmenting. Markets can be viewed differently, whether supply-side, demand-side, or technology-based (Goller et al., 2002; Nenonen & Storbacka, 2013; Storbacka & Nenonen, 2012). The most common view is demand-side, where the customer is in the center. This view can entail customers from diverse industries (De Kluyver & Whitlark, 1986) and differences between direct and indirect customers (Thomas, 2016). In this sense, Hlavacek and Reddy (1986) differentiate between industry and market. An industry refers to a wide group of manufacturers producing a wide, related range of products. A market segment is a more distinct group of customers with similar requirements that might be served by different offerings and technologies (Hlavacek & Reddy, 1986). B2B markets are often characterized by multiple subsequent or multistage markets. Thomas (2016) has proposed a multistage market segmentation alignment concept. Building on "a multistage market champion" (a firm that exerts the most influence on multiple levels), Thomas shows that alignment across multiple levels can create strategic advantages, but not all markets may need to apply such an approach.

An alternative approach is a supply-side view focusing on supply characteristics, including capabilities and the nature of the organization, leading to an upstream market definition based on industry and competition in a given industry (Storbacka & Nenonen, 2012; Söllner & Rese, 2001). Mitchell and Wilson (1998) state that the supply and customer perspective should be balanced. Finally, there is a more technology-based definition, which helps firms that develop new technologies form a sense of identity and technology-based set of competition (Storbacka & Nenonen, 2012). In this vein, Millier (200) indicates that rationalizing segmentation involves the comparison of competing technologies. In summary, it is in defining markets that consideration should be taken in relation to all downstream, upstream, competitor, and other environmental factors. However, the market concept is better characterized when focused on downstream actors (i.e., customers).

Purpose of segmentation. Authors have highlighted how segmentation is both purposive and context-dependent (Clarke, 2009; Clarke & Freytag, 2008; Goller et al., 2002; Hlavacek & Reddy, 1986) and that the selection of variables and the method for segmenting should reflect the purpose and problem to be solved. Nevertheless, few have systematically considered different purposes behind segmentation from a non-tactical perspective.

Some authors state that the purpose behind their proposed variables and segmentation methods is: (1) marketing strategy (Palmer & Millier, 2004), (2) identifying target segments and planning future product offers (Clarke, 2009), (3) management of customer future value potential (Balboni & Terho, 2016), or (4) improved salesperson performance (Terho, Eggert, Hass, & Ulaga, 2015). In this avenue, Clarke and Freytag (2008) are among the few that have explicitly considered different purposes for segmentation. They argue that different purposes have different ramifications and vary in how difficult it is to implement, depending on the degree to which changes in the firm's activities, actors, and resources are needed. Clarke and Freytag (2008) discuss different purposes that distinguish between strategic and operational levels and the degree to which new value is created. Overall, knowledge remains limited regarding the link between segmentation purpose and its influence on the various elements in the segmentation process (e.g., whether there are variables and methods that are more appropriate for different purposes) and further implementation.

4.2.2. Segmentation variables

The literature on industrial segmentation has proposed several variables for creating market segments. In the 1980 s, a conventional categorization of variables was a division into *macro*- and micro-variables. *Macro*-variables include size, industry type, SIC codes, benefits, application, and geographic location; variables that are often easily observable and accessible at low cost or published by governmental statistical series (Chéron & Kleinschmidt, 1985; Powers & Sterling, 2008). Abratt (1993) identified that the most commonly used variables in practice segmentation are at the *macro*-level. The leading approach is industry or vertical segmentation (see more details in sub. section 4.3.2). Industry-based segmentation is often used in practice as a heuristic for needs-based segmentation, since customer needs might vary based on their industry. Another nuance in the *macro*-segmentation stream is based on customer size and strategic importance, classifying customers into strategic accounts, key accounts, or national accounts (Rangan, Moriarty, & Swartz, 1992). Key account management (KAM) is simultaneously a customer-facing activity and a segmentation strategy (Millman, 1996, p. 635). Recent B2B marketing literature has considered KAM a customer-facing activity (e.g., Gupta, Kumar, Grewal, & Lilien, 2019), whereas older literature considered it a segmentation approach using current and potential sales (e.g., Wind & Cardozo, 1974). Not all KAs are large-volume customers, but should fit supplier's strategic intent.

More sophisticated *macro*-segmentation approaches noted in the literature are *benefit* segmentation (i.e., grouping firms by measures of benefits sought; Moriarty & Reibstein, 1986) and *application* segmentation (i.e., grouping firms that have common problems to be solved; Hlavacek & Reddy, 1986). Both *macro* approaches represent the *frontier* with micro-segmentation due to the data requirements. Based on *macro*-segmentation variables, early 1980s and 1990s studies explored how segmentation can be used for communication, product offering, and formulating marketing strategy (e.g., Wilson, 1986). For example, Weerahandi and Dalal (1992) segment based on industry sector and firm size for diffusion and forecasting.

Over the years, there has been a shift from a focus on *macro*-variables to increased attention on micro-variables (i.e., information unique to the customer that can be challenging to acquire, demanding surveys or other forms of data collection). The transition to a micro-segmentation approach gained momentum since the late 1990s, and was dominated by a focus on purchasing or buying behavior (Simkin, 2008). Proposed segmentation variables are purchase responsibilities (Thomas, 1989), purchasing process and firm characteristics (Segal, 1989), customers' actual purchasing behavior (Dowling, Lilien, & Soni, 1994), and purchasing patterns of sourcing strategy (Frear, Alguire, & Metcalf, 1995). Other researchers consider buying behavior to determine price sensitivity (Ferrell et al., 1989) and to describe purchase frequency and brand choice (Uncles & Ehrenberg, 1990). Moreover, File and Prince (1996) consider the psychographic segmentation of family-owned firms. The *macro*-approach was still visible in the 1990s. For example, Griffith and Pol (1994) propose a demographic-based segmentation scheme to measure a manufacturer's penetration across market segments. Researchers have also sequenced *macro*- and micro-variables (e.g., Kalafatis & Cheston, 1997) and integrated "hard" *macro*-segmentation (e.g., industry) with "soft" behavioral micro-segmentation (e.g., Rao & Wang, 1995).

Moving toward the 2000s, micro-variables continued to prevail. Mitchell and Wilson (1998) determined a lack of consideration of customer needs as a prime segmentation variable. Since then, research has proposed more customer-centric variables, including strategy (Sudharshan & Winter, 1998; Verhallen, Frambach, & Prabhu, 1998), understanding of customer needs (Albert, 2003), customer use (Millier, 2000), customer requirements (Dibb & Wensley, 2002), and branding importance (Mudambi, 2002). Others combine *macro*- and micro-variables. For instance, Powers and Sterling (2008) combine demographic and needs-based variables. Several researchers recommend relationship as a prominent segmentation variable (Mark, Niraj, & Dawar, 2012; Ringberg & Gupta, 2003; Windler, Jüttner, Michel, Maklan, & Macdonald, 2017). Particularly, Freytag and Clarke (2001) propose segmenting based on customer intentions toward collaboration, and Ringberg and Gupta (2003) suggest using variables that influence long-term exchange relationships. Windler et al. (2017) propose a methodology consisting of 21 criteria for dimensions of the quality of the relationship and potential for future partnerships. More recently, authors have considered increased digitalization. This stream considers web design, e-commerce, and social media (e.g., Lord & Ford Collins, 2002). In this sense, Müller et al. (2018) research digital, social media, and mobile marketing in industrial buying based on variables such as buying frequency, function of the buyer, and industry sector.

While research has recently focused on micro-segmentation, there is no evidence supporting that B2B firms did the same. Insight is needed into how firms practice and actually use segment variables. One point of criticism raised from the segmentation literature is the scarce guidance on how and when it is appropriate to select different variables as business markets are complex and highly situational (Clarke & Freytag, 2012; Thomas, 2012).

Models. The reviewed literature suggests many models to identify market segments, and such models can be categorized differently. Remarkably prevalent are the differences based on build-up (aggregative) versus breakdown (disaggregative) approaches. Rao and Wang (1995, p. 58) indicate that aggregating individual customers is an *a posteriori* approach (segmentation variables are extracted from a pool, generally via statistical analysis) and disaggregating a large market is an *a priori* approach (segmentation variables and their categories are decided before data are collected).

Quantitative method papers focus on testing and proposing different statistical approaches, often inspired by consumer marketing (Thomas, 2012). Consequently, there is a narrow focus on how firms can apply the statistical procedures in a B2B context (e.g., introducing new variables and more "sophisticated" methods for selecting among the segments). Much less consideration is given to broader issues in the segmentation process in B2B markets. Conversely, qualitative research is more occupied with the full B2B segmentation process and frequently incorporates the practitioner's perspective. Further, most quantitative methods are based on a build-up approach (e.g., conjoint, cluster analysis, and benefit segmentation). These methods are criticized for not considering the practitioner, having overly complex data requirements, and failing to deal with the presence of buying centers and networks in the industrial marketplace (Kalafatis & Cheston, 1997; Palmer & Millier, 2004). In contrast to the quantitative methods, qualitative methods generally propose a breakdown approach (Nenonen & Storbacka, 2013; Simkin, 2008), with Clarke (2009) being the only exception.

Based on the reviewed literature for segment identification, we categorize the models into five groups (similar to Thomas, 2012): (1) network analysis, (2) categorical variables for matrix analysis, (3) cluster analysis, (4) latent class analysis, and (5) optimization procedure by predefined criteria. First, this qualitative stream acknowledges the presence of both direct and indirect customers. Hlavacek and Reddy (1986) three-step model (identification, qualification, and attractiveness) focused on the end-user offering application. The key idea for segmentation is the value-in-use derived from the offering *application*. Thus, segmentation starts by identifying *where* the actual value is co-created by the network actors. Albert (2003) expands this view by pointing toward the question of *who the customer is* and includes both intermediaries and end-users. This author proposes a needs-based model, concluding that intermediaries and end-users have different perceptions of *what value is*. More recently, Nenonen and Storbacka (2013) and Storbacka and Nenonen (2012) work on generating a competitive arena mapping, creatively combining supply- and demand-side characteristics. Thomas (2016) suggests that more value can be co-created whether direct and indirect customer needs are aligned. Thus, network segmentation involves the finding of pieces of whole value chains that can represent an advantageous space for competition (for the focal supplier).

Second, firms can identify a few base variables with defined categories in order to create a classification matrix of organizational customers (Thomas, 2012). This approach utilizes an objective or subjective assessment to indicate the two extremes of a predefined variable. For example, Laughlin and Taylor (1991) present a model that considers a segmentation approach based on customer concentration and product customization, generating a 2 × 2 matrix. The quadrants are then managed by a suggested combination of the importance (high vs. low) of marketing mix variables (e.g., price, advertising). Similarly, Rangan et al. (1992) propose a segmentation method based on relative paid-price vs. cost-to-serve, distinguishing the equity axis (equilibrium) and the power axis (disequilibrium) to manage customers. In a relationship setting, Freytag and Clarke (2001) and Windler et al. (2017) use matrices to analyze buyer–seller collaboration. Overall, the use of categorical variables allows a simple descriptive analysis, which can provide initial direction for practitioners.

Third, B2B segments are identifiable by evaluating a series of variables via cluster analysis (Thomas, 2012). This is the most common method used in the segmentation literature (e.g., Sheikh, Ghanbarpour, & Gholamiangonabadi, 2019). The chosen variables can be reduced by factor analysis to better capture the responsive factor structure of the market. The selected factors are then submitted to a cluster analysis (Thomas, 2012). The identification of segments is based on the evaluator criterion in a *post hoc* analysis of the data. Vriens, Wedel, and Wilms (1996) compared different cluster approaches: (1) overlapping (customers can be assigned to multiple clusters), (2) non-overlapping (customers are assigned to only one cluster), and (3) fuzzy (customers can be assigned partially to multiple clusters). The most common approach is non-overlapping, which can be performed in hierarchical and non-hierarchical procedures. The former involves the construction of a hierarchy of a treelike structure, commonly in the form of a *dendogram*, and requires the researcher to choose a similarity measure (e.g., Euclidean distance) and linkage method (e.g., Ward's method). The latter involves directly assigning customers to clusters once the number of clusters to be created is specified. The non-hierarchical procedure is also referred to as "K-means clustering."

Fourth, by applying finite mixture models, latent class analysis (LCA) uses regression-based procedures to identify a set of unobservable clusters from observed variables (Thomas, 2012). LCA assumes a non-overlapping view of the segments. Vriens et al. (1996) conclude that LCA outperforms the majority of cluster analysis procedures. Surprisingly, LCA has not been a dominant approach to B2B market segmentation and was first recently adopted (e.g., Mark et al., 2012). The challenge for B2B marketers is the econometric skills required in LCA.

Fifth, the optimization approach generates a more constrained set of segments by simultaneously including variables, such as profitability, in addition to common descriptors of needs or buying behavior (Thomas, 2012). DeSarbo and Grisaffe (1998) that show the managerial advantage of using optimization procedures based on combinatorial algorithms. This approach is now gaining advocates, as marketing must show financial results. For example, Tsao, Raj, and Yu (2019) formulate a mixed-integer programming problem to maximize the entire seller-expected profit. Similarly, Tarasi, Bolton, Hutt, and Walker (2011) "optimize" an initial cluster analysis to build an efficient portfolio by minimizing the cash flow variability in the segments. Overall, while the inclusion of financial performance is appealing to practice, the essence of segmenting the market is transgressed, since it hides the underlying reasons for the change in financial performance, deriving in tautological systems.

Selection of target segments. Deciding which segments to target is a critical management decision (Hlavacek & Reddy, 1986). Several authors have proposed that the selection process consists of an evaluation of the segments and the selection and prioritization of target segments (Clarke, 2009; Freytag & Clarke, 2001; Montoya-Weiss & Calantone, 1999). To ensure that the identified segments can be trusted as the basis for company strategy, they should be challenged, tested, and evaluated (Clarke, 2009). Myriad criteria are often used to characterize identified segments that can lead to an effective and profitable marketing strategy. Identifiability, substantiality, accessibility, stability, responsiveness, and actionability are examples of such criteria (Mühlbacher, Dreher, & Gabriel-Ritter, 1994; Plank, 1985; Steenkamp & Ter Hofstede, 2002). If these criteria are not characterizing the segments, then work on a new appropriate segmentation structure should be considered. According to Abratt (1993), the most common criteria that firms use to select target market segments are the (a) ability to reach buyers in the market, (b) competitive positioning, (c) market size, (d) compatibility of the market with the objectives and resources of the company, (e) profitability, and (f) expected market growth.

The targeting literature indicates that B2B firms should develop a measure for segment attractiveness. Hlavacek and Reddy (1986) suggest accounting for attractiveness by (a) market growth potential, (b) level of market domination by large and powerful competitors, (c) entry barriers and the prospect of being able to attain and maintain a certain "critical mass" to be an efficient producer, and (d) the value added by the manufacturer. Söllner and Rese (2001) propose that factors supporting segment attractiveness are determined by the behavior of customers and competitors, creating barriers for both newcomers and established firms. Alternatively, attractiveness can be considered a dual – internal and external – challenge for B2B firms (e.g., Clarke & Freytag, 2012). For Montoya-Weiss and Calantone (1999), attractiveness entails the problem of how a manager can select the appropriate segment for long-run profitability, considering firm constraints. They develop a procedure for structuring and modeling the segment selection problem based on multiple decision criteria to manage diversity among decision-makers in organizations. The procedure for segment evaluation and selection consists of four stages: (a) problem structuring, (b) segment formation, (c) segment evaluation and selection, and (d) segmentation strategy description. Likewise, Freytag and Clarke (2001) state that a segment that may seem attractive may not suit the company if it cannot be handled internally to gain the desired market position. As firms are unique, their process of evaluating and selecting the segments that best match a company's capabilities should reflect the company's individual situation. The rationale is to find a perfect match between segment demands and optimal use of the company's capabilities (see Freytag & Clarke, 2001, p. 482). In summary, having an attractiveness metric in place helps B2B marketers select the "right" segments and avoid the temptation of total market coverage.

4.2.3. *Implementation*

The successful implementation of segments in marketing strategy is commonly reported as a significant challenge in the industrial segmentation process (Boejgaard & Ellegaard, 2010; Clarke, 2009; Palmer & Millier, 2004; Storbacka & Nenonen, 2012). Academic attention to segmentation implementation has tended to revolve around the troublesome nature of market segment identification (Dibb & Simkin, 2000; Kalafatis & Cheston, 1997), the sectorized view of a market (product-centric; Dibb & Simkin, 1994; Simkin, 2008), and/or segmentation costs (Blocker & Flint, 2007; Mitchell & Wilson, 1998). There has been much less focus on the implications of implementing segments in organizations and use of market segmentation to formulate marketing strategy (Goller et al., 2002).

In a conceptual review, Dibb and Simkin (2000) identified three key areas requiring consideration when implementing a segmentation approach: (1) the "infrastructure" in place at the beginning of the segmentation process, (2) the segmentation process itself, and (3) a series of implementation elements, including culture and sales force reorientation within the business. In a more recent literature review on segmentation implementation, Boejgaard and Ellegaard (2010) identified two main takeaways: (1) knowledge about segmentation implementation remains underdeveloped, and (2) the focus on analysis-plan conversion is expanded to also include plan-action conversion. They found that execution has only recently appeared as a critical implementation topic; hence, it is a rich avenue for further research. Overall, the literature identifies several themes that represent barriers for B2B market segmentation implementation. We focus on (1) leadership and resources, (2) marketing mix adjustment, and (3) internal reorganization.

Leadership and resources. Leaders providing guidance and resource allocation among products and markets are key during implementation (Goller et al., 2002). Fish, Barnes, and Aiken (1995) describe challenges related to the capacity of managers to cope with the complexity of multivariable segmentation and the application of sophisticated segmentation methods. They also indicate that implementing segmentation is difficult, and managers often have limited experience and expertise in segmentation. The guidance from experienced managers can smooth the adaptation challenge during implementation. Inadequate senior management involvement in segment roll-out is discussed in the literature as having negative consequences (e.g., Dibb & Simkin, 2001). The use of resources is important to make change tangible, but can become a constraint during implementation (Dibb & Wensley, 2002). Resource availability is a sign that the segmentation project is a serious endeavor and not merely a marketing exercise to bring new ideas into the firm (Thomas, 2012). Leadership should make available and manage the resources to explain the benefits of implementing a new segmentation approach and to facilitate discussion about the endeavor, both internally and externally (Dibb & Simkin, 2001).

Marketing mix adjustment. Implementing marketing plans and strategies frequently involves stages such as the formulation of marketing strategies, segment targeting, and marketing mix programs (Dibb & Simkin, 1997). The literature suggests that implementation involves converting analytical results (from theoretical segments) into actionable plans and strategies (Boejgaard & Ellegaard, 2010). De Kluyver and Whitlark (1986) state that implementation involves differential advantage by matching a firm's unique capabilities to the requirements of segments, which should be documented to drive the adaptation of a new marketing strategy. Palmer and Millier (2004) show that implementation provokes resistance, as it requires effort in time and knowledge to adapt the marketing strategy appropriately. The adaptation challenge covers carrying out the plans containing the activities for reaching the target customers. In this avenue, the literature also stresses the relevance of designing specific plans for the new segmentation and conducting marketing-mix adjustments (Mitchell & Wilson, 1998). Importantly, Dibb and Simkin (1997) found that the reasons why managers advocated in favor of resisting segmentation were potential disruptions in sales, marketing, and distribution. Thus, the marketing-mix adjustments must minimize the potential negative effects of a new segmentation.

Reorganization. A failure to adapt organizational structures to support segmentation strategies is reported to cause implementation problems (Palmer & Millier, 2004). New segmentation structures can mean that a firm must view the market differently and handle market segments that overlap former segments. There can also be shortfalls in communication, coordination, and dealership structures, which should be considered when deciding how to handle the segments (Dibb & Simkin, 2001). A synthesis of the implementation literature highlights a view on implementation as the *execution of plans*, which involves work on the organizational structure. Particularly, it is claimed that a major challenge is connected to executives failing to change and adapt organizational functions to effectively deploy segmentation strategies. Firms tend to hold on to "old" structures such as product, territory, or industry specific units, despite the adoption of new customer segments (see Boejgaard & Ellegaard, 2010). The literature acknowledges transformation in organizational groupings such as creating key account management teams, deploying cross-functional teams, adapting sales force, rearranging distribution channels, combining departments, and relocating technical support groups (e.g., Balboni & Terho, 2016; Clarke, 2009; Palmer & Millier, 2004; Rangan et al., 1992). Managers perceive organizational changes as threats to their positions and power due to the risk of failing to execute a new market approach. Managers also hold on to existing structures, arguing the cost and coordination of conducting such structural changes (Bonoma & Shapiro, 1983; Dibb & Simkin, 1994). Another issue is that "existing structures are well entrenched and institutionalized, eroding the perceived need for change" (Boejgaard & Ellegaard, 2010, p. 1296). The latter speaks to a cultural influence of segmentation, which has been almost completely absent in the B2B marketing literature (cf. Dibb & Simkin, 2001).

Overall, studies have predominantly focused on snapshots of the implementation issues (e.g., Dibb & Simkin, 1997; Mentzer, Myers, & Cheung, 2004). The lack of longitudinal studies for observing the effect of implementing segmentation on the firm over a longer period has precluded researchers from perceiving the value of implementing a new market segmentation and the firm/organizational changes required. It would also appear as though a firm's context, industry, size, and the purpose of segmentation play a role in the segmentation implementation task. More research is needed to understand some of the differences across firms and industries. Finally, we acknowledge that the analyzed implementation steps have a strong overlap with B2C segmentation.

4.2.4. *Evaluation*

Following a successful segmentation implementation, several articles evaluate its impact on different types of outcome variables in order to achieve competitive advantage (Goller et al., 2002). This block is crucial, as the literature suggests that segmenting B2B markets should involve a systematic cost-benefit analysis, allowing segmentation to be financially justified (e.g., Dibb & Wensley, 2002; Sood & Kumar, 2017). B2B segmentation studies have focused on (i) customer satisfaction, (ii) sales force performance, and (iii) firm-level financial performance. The evaluation of the segmentation consequences influences the view of segmenting B2B markets as a dynamic business-decision process (Thomas, 2012). Thus, the resulting consequences affect how firms understand the market concept and purpose of segmentation (see Fig. 2).

Customer satisfaction. Several authors (e.g., Bolton & Myers, 2003; Mentzer, Myers, & Cheung, 2004; Zeng, Yang, Li, & Fam, 2011) state that segmenting a market according to customer needs/preferences in terms of technical requirements, product features, customer service, or order handling determines customer satisfaction. The rationale is that a certain level of customization is a better approach than marketing the same offering to meet total market needs (Thomas, 2012). This idea builds over the offering concept being a variable resulting from the identification and comprehension of customer requirements. The segmentation-satisfaction link grows stronger when the focus of segmenting industrial markets is on end-users (see Hlavacek & Reddy, 1986). Moreover, a few B2B market segmentation studies argue that satisfaction mediates the relationship between segmentation and customer price-sensitivity (elasticity; e.g., Mentzer, Flint, & Hult, 2001; Mentzer et al., 2004; Zeng et al., 2011). Surprisingly, the reviewed articles lack quantitative empirical testing to demonstrate the influence of market segmentation on customer satisfaction.

Sales force performance. Some studies also evaluate the impact of B2B market segmentation on sales force performance. Here, segmentation capabilities are conceptualized as a key dimension of the sales strategy. Whereas marketing identifies and selects target segments, the sales function is responsible for selling to all firms that constitute a market segment by allocating efforts at the sales force level (Balboni & Terho, 2016). This explains the importance of capturing the influence of implementing market segmentation on sales force performance. Panagopoulos and Avlonitis (2010) provide initial evidence, showing that sales strategy as a whole (including segmentation) is significantly related to three dimensions of sales force performance: (i) sales force behavior performance, (ii) sales force CRM performance, and (iii) sales force outcome performance. In a more granular analysis, Terho, Eggert, Hass, and Ulaga (2015) indicate a direct, positive effect of segmentation on salesperson outcome performance. Interestingly, the studies associating segmentation and sales force performance all operationalize B2B market segmentation as a general construct, confounding the segmentation type used by the firms.

Firm-level financial performance. Most of the studies discussing segmentation evaluation (consequences) deal with firm-level financial performance. Profitability is commonly used to measure financial performance (e.g., Sood & Kumar, 2017). Other supplier outcome measures (e.g., revenue, market share) have not been studied in the reviewed manuscripts. Due to the less atomized customer base, most B2B firms focus on driving profitability from their customers in comparison with B2C firms, which tend to focus more on growing market share. It is important to highlight that many studies select buying behavior variables or transactional data to conduct B2B market segmentation (e.g., Homburg et al., 2009; Montoya-Weiss & Calantone, 1999; Tarasi et al., 2011). For example, while Tsao et al. (2019) investigate panic-buying behavior and brand substitution as a segmentation base to quantify the subsequent profit levels, Rangan et al. (1992) contrast relative price with relative cost-to-serve, showing the effect of increasing/decreasing them on market profitability. Identifying purchasing patterns unequivocally should help explain the profitability of target markets. This instrumental bias toward segmenting B2B markets from a transactional perspective becomes even more evident when segments are created directly by profitability levels (see Mark et al., 2012).

The literature reviewed substantially relies on case studies (quantitative and qualitative) when accounting for segmentation aftereffects, which is not enough to justify its value to B2B firms (Thomas, 2012). Hence, we acknowledge the need for a comprehensive study of current B2B segmentation practices and their impact on profits, sales revenue, and shareholder value. Overall, the impact of B2B market segmentation on firm financial performance remains empirically unclear.

4.3. Context

Several studies discuss B2B market segmentation in particular settings. Such contexts refer to the characteristics or tenets influencing the segmentation process. The four most representative factors are: (1) geographical scope (local vs. international), (2) market coverage (horizontal vs. vertical), (3) type of offering (goods, services, and solutions), and (4) offering status (new vs. existing).

4.3.1. Geographical scope

Many studies within segmentation pay little attention to potential differences between local and international markets (Clarke, 2009; Mitchell & Wilson, 1998; Sudharshan & Winter, 1998). Nevertheless, geographical scope is a key contextual element when conducting B2B market segmentation (Bonoma & Shapiro, 1983). Few studies have addressed the differences in customer segments across international markets more explicitly (e.g., Day, Fox, & Huszagh, 1988). In this sense, key attempts have been made to identify the smallest set of variables, providing maximum variance of the dependent variable on international markets. *Macro*-based cultural differences, economic growth, and technological development are used for the segmentation of the international markets (Day et al., 1988; Steenkamp & Ter Hofstede, 2002). Micro-based behavioral variables, such as international purchasing patterns (Frear et al., 1995), preferences for global logistics (Mentzer et al., 2001; 2004), and trading partner and product categories (Shankarmahesh, Olsen, & Honeycutt, 2005), are used for segmenting global markets. By studying import data for broad product categories, Nachum (1994) found that while income and currency stability were good predictors of variance, such overall bases for segmentation have demonstrated limited value for practical use and require further refinement. Instead of using *macro*-factors, purchasing patterns across nations are used by Frear et al. (1995). Their study revealed that differences in sourcing patterns can depend on country development and be used as a proxy for global segmentation. Similarly, Nakip (1999) studied usage rates of industrial products based on per capita consumption (import–export quantities) in a country. It was found that development/income level and market size are not unique predictors of usage rates.

With a focus on price elasticities in a global context, Bolton and Myers (2003) reveal differences across customers in response to quality. The differences identified provide a basis for developing high or low support services across international markets. More recently, Oberecker, Riefler, and Diamantopoulos (2008) studied attitudes toward foreign countries and products, which are labeled consumer affinity. As demand on business markets is derived, affinity will eventually impact business markets. Shankarmahesh et al. (2005) state that segments should be selected based on existing global markets and related export products of the marketer's home country. Dominant markets and dominant products are selected to achieve the highest possible pay-off of export endeavors (Shankarmahesh et al., 2005). In conclusion, what stands out from these studies in international settings is the strong focus on "sales" segmentation – using global markets as an extended transactional arm of local markets, usually neglecting customer needs.

4.3.2. Market coverage

A key strategic task is to define market coverage based on a firm's goals, resources and capabilities (Hutt & Speh, 2016). This decision has an impact on segmenting industrial markets. A broader view on market coverage may lead to crafting a *horizontal* approach to sell a firm's offerings across multiple industries. Conversely, a narrower view on market coverage may lead to crafting a *vertical* approach to sell a firm's offerings to a niche customer group (commonly an industry). Mentzer et al. (2004) assert that business customers can be segmented both horizontally (across national markets) and vertically (within specific national markets), based on their preferences for logistics services.

While a *horizontal* approach aims to amortize operational risk in a diverse set of customers, a *vertical* approach aims to focus on specialized needs enabling innovation (De Massis, Audretsch, Uhlaner, & Kammerlander, 2018).

4.3.3. Type of offering

The B2B market segmentation literature includes contributions to both goods- and services-based offerings. The intangible nature of services increases the complexity for segmenting a market (Bolton & Myers, 2003). Most of the published articles focus on the tangible goods/products (Fell, Hansen, & Becker, 2003; Tsao et al., 2019), the general idea being to identify the attributes behind customer choice (e.g., via cluster analysis) and then combine them with more traditional variables, such as demographics and SIC codes (Rao & Wang, 1995). Goods can then be used as a "means" for segmenting markets. However, product attributes assessment is not a perfect proxy for understanding customer needs. Similarly, articles focused on services tend to use service attributes to segment markets (e.g., Zeng et al., 2011). For example, Bolton and Myers (2003) implemented a segmentation based on three service elements: (a) reliability, (b) responsiveness, and (c) assurance. In this vein, Lynn (1986) and Azimont and Araujo (2010) identify service characteristics to develop new market segments for professional services and petrol stations, respectively.

Windler et al. (2017) develop a segmentation methodology for business *solutions* sellers. Solution selling is a mix of goods and services, where a B2B seller customizes its offering to a particular customer's needs (through requirements definition, customization and integration, deployment, and post-deployment support; see Tuli, Kohli, & Bharadwaj, 2007). This approach is aligned with the customer needs *macro*-segmentation view. It is argued that suppliers should apply a solution approach for selecting customers based on prior experiences in a relationship and the customer's potential for future solutions. The managerial implication is simply to identify "better" customers to sell solutions. In this vein, Santos and Spring (2015) argue that managers should use the level of customers' willingness and ability to participate in the solution delivery as segmentation criteria. The emphasis on business solutions relates to addressing different customers' needs simultaneously, which requires the integration of organizational activities, influencing the segmentation decision. Overall, goods-, services-, and solution-centric articles do not provide information about their potential differences in market segmentation, as products, services, and solutions are merely used as a descriptive context.

4.3.4. Offering status

A fourth issue discussed in the literature is segmenting markets in the context of new or existing offerings. There are two divergent streams in regard to managing offerings status. On one hand, some articles use new offerings as a given and explore mechanisms to increase profitability, reduce marketing expenditures, or increment the chances of a successful product launch (e.g., Fell et al., 2003; Sood & Kumar, 2017). These articles build on traditional diffusion/adoption models, such as the Roger method or cross-sectional method (see Fell et al., 2003, p. 348). The theoretical underpinning is to provide a sales approach based on improving the market response time. On the other hand, some articles diverge from mechanistic methods, as they acknowledge that a single actor can be disruptive in industrial markets (Millier, 2000). The interaction between a supplier and early users both shapes and offers the foundation for subsequent attempts to combine new users into segments (Harrison & Kjellberg, 2010). Thus, traditional normative recommendations viewing segmentation as an exclusively descriptive practice are likely to leave out many activities related to the shaping of that market (Harrison & Kjellberg, 2010, p. 791). In this vein, Clarke and Freytag (2008) argue that segmentation can be developed by undertaking a strategic or an operational approach and perceiving market offerings as more or less predefined. Hence, a firm entering into a relationship can experience a different degree of customization of its offerings (new offer versus adjusting offer; Clarke & Freytag, 2008). This distinction between existing and new offerings underpins the need to learn more about the dynamic nature of segmentation, which is lacking in the literature, with Blocker and Flint (2007) the noticeable exception.

5. Research agenda and closing remarks

Throughout the text, several specific opportunities for further research have been identified. We acknowledge that the B2B marketing field requires a holistic perspective on the segmentation process, to measure and test the influence of each stage on the following one, via an ethnography/observation approach. The depth and breadth of segmenting a market seems to be better captured by qualitative methods than by quantitative modeling due to its contextual nature and embeddedness. Segmentation is highly influenced by the business context and current organizational strategy, which favor qualitative approaches (Möller & Parvinen, 2015). This also implies moving toward a longitudinal understanding of the segmentation endeavor for B2B firms with the active participation of the researcher. Action and case-based research emerge as appropriate approaches to account for the conceptual, applied, and technological challenges in the segmentation task and to validate in detail the consequences of a successful implementation (Storbacka & Nenonen, 2012), particularly at the financial level. In the present section, we summarize and discuss the most relevant domains requiring further research for each stage of the suggested B2B segmentation process: (1) pre-segmentation, (2) segmentation, (3) implementation, and (4) evaluation.

5.1. Opportunities for pre-segmentation

Prior research in this particular stage is scarce in the literature and articles generally start with no clear stipulations about *what market is being segmented* nor *what is the purpose of segmenting such markets*. Both elements should be formally stated in B2B market segmentation studies. To facilitate this action, researchers should explore the presence and influence of indirect customers (e.g., what different actors are present in the downstream value-chain and how they influence the behavior of the whole downstream market?), the validity of traditional criteria of segment formation (i.e., measurability, accessibility, substantiality, and responsiveness) in the presence of multiple actors (e.g., what are the different criteria to define a market with diverse direct customers, indirect customers, and end-users?), and foreseeable changes in the marketplace (e.g., how does the nature of business cycles affect the mindset of decision-makers?). Hence, further research is required to investigate foundational questions regarding the: (1) *structure of the downstream value-chain*, (2) *criteria for defining a market* (as dependent on the purpose of segmentation), and (3) *expected conditions of the market* (e.g., business cycle). In Table 3, we develop representative research questions to advance these areas.

5.2. Opportunities for segmentation

The focus of published research in this stage has been on suggesting diverse sets of variables and more *refined* methods of segmentation, with some effort on the selection of target markets. Significantly less research has examined questions related to how and when segmenting B2B markets would be undesirable, how qualitative approaches can be integrated with quantitative approaches, who should take part in the segmentation execution, who coordinates them, what type of knowledge is required to segment a market, how segmentation can be more experimental and dynamic, and how to segment a new market (if possible). In combination, we identify three areas for additional research that are interesting for practicing managers: (1) *segmentation team*, (2) *methodological*, (3) *knowledge and competence bases*, and (4) *nascent markets*. In Table 3, we also develop key research questions in these areas.

Table 3
Further research agenda.

Research arena	Illustrative research questions
Pre-segmentation	
Structure of downstream value-chain	• What different actors (i.e., integrators, specifiers, distributors, etc.) are present in the downstream value-chain and how do they influence the behavior of the whole downstream market? How does the number of end-users affect the structure and behavior of intermediaries (between the focal supplier and end-users)? What type of intermediaries have the highest influence on end-user behavior and how can such intermediaries be aligned with the focal supplier goals?
Criteria for defining a market Segmentation team	• What are the different criteria to define a market with diverse direct customers, indirect customers, and end-users? How do different purposes of segmentation broaden/narrow the definition of a market? How would different criteria for defining a market influence the selection of variables (e.g., measurability, accessibility, substantiality, and responsiveness) to control segment formation? How does the firm's digitalization affect the firm's market conceptualization? • Who should be part of the process of segmenting a market and who should coordinate it? How large should the segmentation team be? What type of leadership better supports the segmentation decision? What is the impact of cross-functional vs. marketing-only participants in segmenting a market?
Expected conditions of the market	• How does the nature of business cycles affect the mindset of decision-makers? What market conditions provoke marketing strategy instability and how can top management ameliorate the effects of such conditions? How does the context of a booming economy versus a declining economy influence marketing strategy performance? What factors about the future are more relevant for designing more effective marketing strategies at the present?
Segmentation	
Segmentation process	• What is the link between segmentation purpose and its influence on the various elements in the segmentation process and the implementation? When should managers select which segmentation variables and methods? How and when would segmenting B2B markets be undesirable or ineffective?
Methodological	• What type of model offers more within-group homogeneity? What is preferable: more within-group homogeneity or more between-group heterogeneity? What are the advantages of LCA versus cluster analysis? What are the advantages of action research versus case analysis? How can a longitudinal qualitative approach offer more insights to practitioners? How can qualitative approaches be combined with quantitative approaches? How do companies really segment the market?
Segmentation team	• Who should be part of the process of segmenting a market and who should coordinate it? What type of leadership better supports the segmentation decision? What is the impact of cross-functional vs. marketing-only participants in segmenting a market?
Knowledge & competences	• What are the links between segments and organization (supplier) knowledge? how do segments affect and/or create a need for new knowledge and competences? What types of knowledge are required to conduct B2B market segmentation?
Nascent markets	• How can early indicators for spotting emerging markets and transforming indicators into variables for segmentation be developed? How can new methods for identifying and selecting segments be developed? What is the difference between segmenting a market in the making vs. an established market?
Implementation	
Function & individual roles	• What are the important roles in implementing the segmentation approach? What is the role of the marketing department in implementing the segmentation approach? What is the role of the sales department? What is the role of the CEO in implementing the segmentation approach? What is the role of the CMO? What is the role of front-line employees? What is the role of external consultants?
Implementation agenda	• How can an effective implementation process with clear milestones be developed? How and when should the implementation process be evaluated? How much time is involved in adequate implementation and why? What is the long-term effect of segmentation on a firm's performance and the target segments? What are the ideal communication channels for inter-departmental collaboration? How does firms' context, industry, and size play a role in the segmentation implementation task? How can segments be implemented efficiently in order to develop clear indicators for the organization and individual employees' performance? What are the differences between implementing segmentation in B2B settings vs. B2C settings?
Evaluation	
Comparative analysis of segmentation	• What are suitable measures of successful segmentation within and across companies? What industries offer better results after being properly segmented? What method is more effective for indirect customers vs. direct customers? What type of segmentation contributes to developing a stronger customer orientation? How is the culture of a firm changed by a new segmentation approach (i.e., comparing culture pre-segmentation vs. post-segmentation?)
Financial vs. non-financial	• What is the right balance between financial and non-financial measures assessing the consequences of segmenting in the short and long run? What are pertinent financial and non-financial variables measuring the effects of segmentation? What internal benefits emerge from improved segmentation? How are financial and non-financial consequences experienced in time? What are the financial and non-financial consequences for the sales force? How does segmentation influence both employees' engagement and shareholder value?

5.3. Opportunities for implementation

This stage has gained attention from researchers in the last 10–20 years, focusing on the top management role, resource availability, marketing mix adjustments, and organizational restructuring, with significantly less research addressing questions related to the role of the marketing department and other departments (e.g., what is the role of the sales department?), timing (e.g., how much time is involved in implementation and why?), communication mechanisms (e.g., what are the ideal communication channels for inter-departmental collaboration?), prioritization of contingencies (e.g., what role does a firm's context, industry and size play in the segmentation implementation task?), external support such as consultants (e.g., what is the role of external consultants?), and specific implementation champions (e.g., what is the role of the CEO in implementing the segmentation approach?, what is the role of the CMO?). Working on these themes will contribute to validating the impact of academic research in practice. Table 3, therefore, focuses on two areas for further research: (1) *function (department-level)* and *individual roles* and (2) *implementation agenda*. Exemplar research questions in each of these areas are also identified.

5.4. Opportunities for evaluation

The existing research focusing on this stage has been inherently conceptual rather than empirically validated, with the focus on customer satisfaction, sales force performance, and firm-level financial performance. Interestingly, many studies use performance measures as segmentation variables, creating a tautological situation, or not identifying the segmentation approach when quantifying the financial impact of segmentation. Shedding light on these issues is key for the renaissance of B2B market segmentation research. On one hand, segmentation consequences should be comparable at different units of analysis (e.g., what are suitable measures of successful segmentation within/across companies?) and scenarios (e.g., what industries offer better results after being properly segmented?). On the other hand, consequences can be contrasted regarding their nature/classification (e.g., what is the right balance between financial and non-financial measures assessing the consequences of segmenting in the short and long run?). Hence, Table 3 focuses on two areas for additional research: (1) *comparative analysis of different segmentation approaches* and (2) *financial* versus *non-financial* (e.g., cultural) impact. Key research questions in these two areas are also identified.

5.5. Closing remarks

This systematic review of 34 years (1986–2019) of B2B market segmentation in rigorous marketing outlets accounts for the development in the field and assesses the current state of the literature. We provide a new lens by integrating the three identified layers of B2B market segmentation: (1) conceptualization, (2) segmentation as a process, and (3) context. We uncover key challenges for researchers while articulating numerous opportunities for creating new, practice-oriented knowledge in the field. The research agenda is a modest effort rendering a tool for guiding researchers, editors, and reviewers in the development of B2B market segmentation studies (Mora Cortez, 2019). Successful implementation would bring more relevance to a concept that lies at the core of the strategic marketing field.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jbusres.2020.12.070.

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