

**A Status Quo of Buying Center Analysis –  
Where Does It Come From and Where Should It Go?**

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Competitive Paper

**ABSTRACT**

For more than 40 years, research in industrial marketing has analyzed organizational buying behavior. In this context, buying center analysis has received much attention in industrial marketing research. Meanwhile, a considerable number of insights have been gathered that capture a variety of buying center aspects, such as the buying center members' influence on decision-making or the impact of the buyclass on the structure of the buying center. Interestingly, however, although there is a trend towards status quo studies in marketing research (e.g., Frauendorf, Kähm, & Kleinaltenkamp 2007), to date, there is no study that comprehensively summarized the insights of existing buying center research. To provide an overview of the current state of buying center research, and particularly to detect important arrays for future research, this paper conducts a comprehensive status quo analysis. We identified and collected publications dealing with buying center issues published between 1970 and 2012 in nine high-ranking industrial marketing and general marketing journals. We then analyzed the selected studies (in total 127) with regard to their publication time, contents, and applied statistical methods. In order to structure the large amount of buying center literature for our content analysis, we developed a categorization scheme that we largely adapted from the structural model of organizational buying behavior by Webster and Wind (1972). Amongst others, the results of our status quo analysis show that there are remarkable developments to more complex contents and research methods over time which can be illustrated in a three-dimensional (time, content, & methods) graphic. However, we also identified a strong need for further research – firstly regarding existing topics which have to be re-analyzed by more complex methods and secondly, regarding new topics which are caused by recent developments in industrial marketing practice.

**Keywords:** *Buying center, organizational buying behavior, status quo analysis, literature review*

## INTRODUCTION

In industrial marketing research, buying center analysis has been analyzed for more than 40 years. Studies in this field have examined, for instance, how buying center members can be identified (McQuiston 1989) or how buying center members behave depending on external determinants such as the size of the corresponding organization or supplier advertising activities, in order to derive valuable implications for the sales force (e.g. Gilliland & Johnston 1997, Morris & Freedman 1984). Contrary hereto, the importance of a thorough buying center analysis has only been recognized by industrial marketing practice in very recent years (Klähn 2013). This is all the more surprising since fairly familiar marketing issues such as customer relationship management (Ryals & Knox 2001), key account management (Zupanic & Belz 2004), and service management (Morris & Davis 1992) have already been on the agenda of sales people since the 1990s.

The growing appreciation of buying center analysis in practice mainly results from sales people recognizing the importance of understanding buying center structures in order to optimize their selling efforts (Klähn 2013). The knowledge of the buying center structure and internal buying center processes is especially important for sales people, since buying center members generally do not only differ on functional affiliations, but also pursue different aims and thus have different intentions concerning the organizational buying process (e.g. Webster & Wind 1972; Sheth 1973).

Given the growing acknowledgement of the importance of thorough buying center analysis in marketing practice, existing research findings in this field should be of high interest for industrial marketers. Unfortunately, to date, no study has provided a comprehensive overview of the existing buying center literature. While there are a few status quo studies from the 1990s, these do not explicitly analyze buying center issues, focusing instead on organizational buying behavior in general. Furthermore, studies from the 1990s can no longer be considered up-to-date.

Against this background, our study's primary purpose is to provide a comprehensive overview of the existing literature on buying center analysis from the 1970s until today. We are interested not only in stating the developments and status quo of buying center research for the compilation of practical implications, we also intend to derive valuable implications for researchers by illustrating further research needs.

In the following, we first describe our approach to the status quo analysis and our data sample. Second, we provide a comprehensive overview of the existing literature by analyzing the studies of our data sample concerning their publication time, contents, and applied statistical methods. We then draw on our general findings and reveal the surpluses and shortages in buying center research in order to provide implications for further buying center research. Finally, we discuss the results of our status quo analysis as well as the limitations of our study.

## STATUS QUO ANALYSIS METHODOLOGY

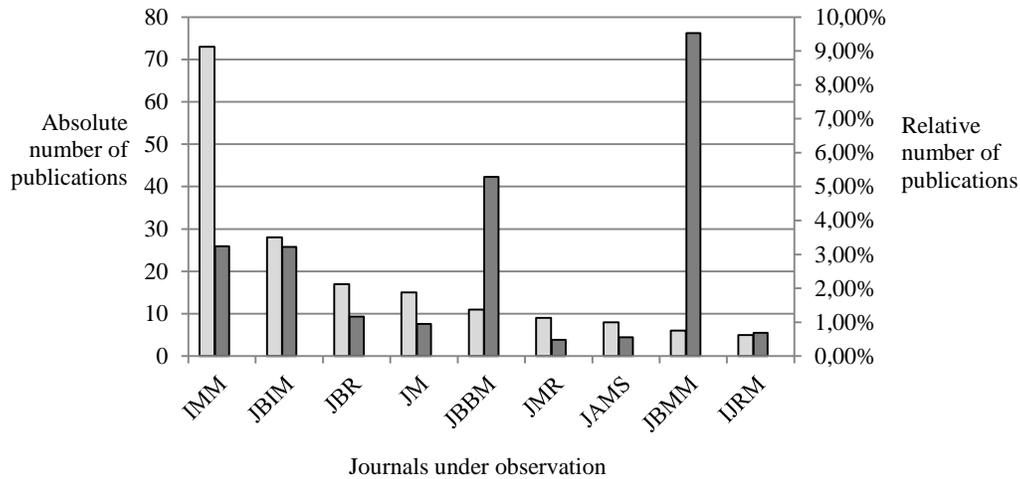
In order to conduct our status quo analysis, we first built our data sample. We screened four high-ranking general marketing journals (*JM*, *JMR*, *JAMS*, and *IJRM*) as well as five marketing journals with a special focus on industrial marketing (*JBMM*, *IMM*, *JBIM*, *JBBM*, and *JBR*) for articles dealing with buying center analysis (see Table 1). While the industrial marketing journals were selected owing to their thematic focus, the general marketing journals were chosen because of their rating A+ or A in common scientific rankings.

**Table 1:** Overview of Selected Journals and Data Sample

Journal	Year of publication	Period under observation
<i>Journal of Business Market Management (JBMM)</i>	2007	2007 – 2012
<i>Industrial Marketing Management (IMM)</i>	1971	1971 – 2012
<i>Journal of Business &amp; Industrial Marketing (JBIM)</i>	1986	1986 – 2012
<i>Journal of Business-to-Business Marketing (JBBM)</i>	1993	1993 – 2012
<i>Journal of Business Research (JBR)</i>	1973	1973 – 2012
<i>International Journal of Research in Marketing (IJRM)</i>	1984	1984 – 2012
<i>Journal of the Academy of Marketing Science (JAMS)</i>	1973	1973 – 2012
<i>Journal of Marketing (JM)</i>	1936	1970 – 2012
<i>Journal of Marketing Research (JMR)</i>	1964	1970 – 2012

In general, we searched for articles published between 1970 and 2012. However, some of the selected journals were only published after 1970, so that the observation period varies among the selected journals. We screened 10,436 articles and identified 127 papers that focus on buying center analysis – 1.22% of all articles published in these journals. Here, we note that articles that only marginally deal with buying center issues were not considered in our analysis.

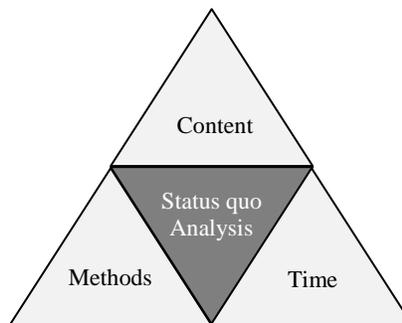
A look at the absolute and relative amount of articles per journals (Figure 1) makes it clear that most buying center papers were published in *IMM*, whereas the absolute number of articles published in the other journals, especially in the journals focusing on industrial marketing, is fairly low, which is also due to their later publication date. Furthermore, it becomes clear that, compared to the other general marketing journals, *JM*, even though it mainly deals with general marketing issues, represents a relatively high absolute number of buying center publications.



**Figure 1.** The Absolute and Relative Amounts of Buying Center Articles in the Analyzed Journals

## DATA ANALYSIS

In order to conduct a comprehensive status quo analysis, we developed a systematization scheme with three different dimensions: time, content, and methods (Figure 2). The time analysis examined when and in which intervals buying center issues were discussed in the selected journals during the past 40 years.

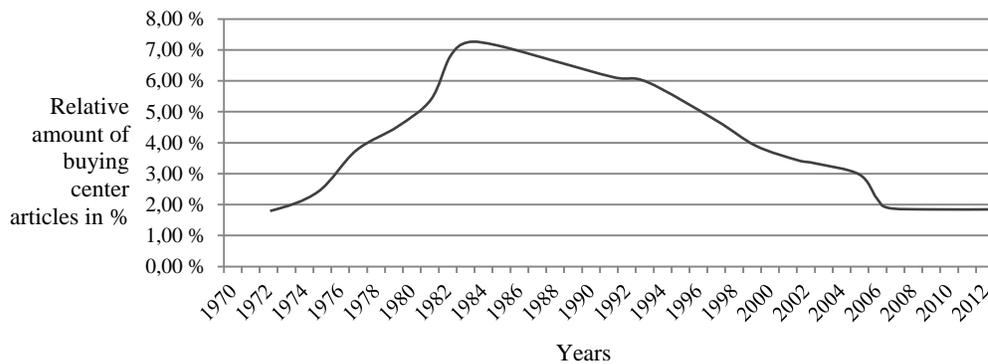


**Figure 2.** Systematization Scheme with the Three Dimensions for the Status Quo Analysis

The content analysis structured the 127 papers in our data sample in relation to contents. This analysis step was not only indispensable to sum up which contents have already been analyzed, but also necessary to demonstrate relevant topics for future research. The methodological analysis analyzed the statistical methods applied for buying center research. Here, we were mainly interested in demonstrating remarkable methodological developments and in identifying methodological implications for future buying center research.

### *The time dimension*

To begin our analysis, the time-related distribution of the buying center publications is presented in Figure 2. The line in the figure shows that the absolute number of buying center articles has increased since 1972, when Webster and Wind (1972) published their article on organizational buying behavior with its focus on buying center analysis in *JM*. Then, a peak of buying center publications can be noted at the start of the 1980s. However, since the mid-1980s, and especially during the 1990s, the overall degree of thematic interest is substantially reduced. Since 2006, the amount of buying center articles has reached the level of the early 1970s, at the beginning of buying center research.



**Figure 3.** Peak of the Buying Center Analysis

### *The content dimension*

Next, we analyzed the contents of the identified articles. However, since a detailed analysis of every article would exceed the scope of this paper, we developed a categorization scheme in order to analyze the articles' contents by means of categories.

Our categorization scheme is based on Webster and Wind's (1972) structural model, which provides an overview of different influencing factors on the organizational buying behavior. First, there are environmental influences such as values and norms or customer requests that influence the organization from the outside. Furthermore, inside the organization, there are organizational factors such as the organizational structure, the organizational actors, or the available technology that influence a buying center's structure. Within this buying center, there are social influences in the form of group interaction processes as well as individual influences such as motivation, personality, or cognition that finally impact the buying center's decision-making process and the buying center's final buying decision (Webster & Wind 1972). In summary, it can be said that this structural model comprises both internal processes within the buying center as well as external factors influencing the buying center. Given this, we categorized the existing buying center literature into the following five categories: individual factors, social factors, organizational factors, environmental factors, and the decision-making process. Most articles could not be assigned to only one category, because they consist of a combination of, for instance, the internal buying center processes and external organizational

influences. To provide a realistic picture of the edited contents, we assigned those articles to several categories. As a result, the categorization of articles overlaps.

*Individual factors.* Existing buying center studies dealing with individual factors mainly focus on personal characteristics as well as buying center member preferences.

On the one hand, personal characteristics refer to the personality of the buying center members and, on the other hand, to characteristics that go along with a buying center member's functional responsibilities in the buying center or overall organization. In this context, Dawes and Lee (1996) have analyzed, for instance, how prior experience with purchase processes as well as the size of a buying center member's stake in a decision's final outcome influences the buying center's intensity of interpersonal communication. Furthermore, Moriarty and Spekman (1984) as well as Dawes, Dowling, and Patterson (1992) have examined the impact of individual buying center member searcher characteristics on the extent of an organization's external information search. Other studies have also focused on the analysis of the buying center member characteristics that are useful to increase member participation and member influence within the buying center. Authors have analyzed individual factors such as the purchase experience (Garrido-Samaniego & Gutiérrez-Cillán 2004) or power distribution (e.g. legitimate power, expert power) (Morris & Freedman 1984; Thomas 1984; Kohli 1989; Venkatesh, Kohli, & Zaltman 1995; Tellefsen 2006). Furthermore, studies that have focused mainly on buying center members' role-specific characteristics have analyzed, for instance, how these characteristics influence a member's choice criteria in the buying process (Wilson & Woodside 1995) or more concretely, how members self-designed role perceptions impact member behavior during the buying process (Spekman, Stewart, & Johnston 1995).

Concerning the buying center member preferences, the existing literature mainly deals with preferences in relation to product-related, performance-related, and/or supplier-related factors. Thus, Wilson and Woodside (1995) have analyzed, for instance, how the evaluation and importance of choice factors such as quality, price, service, and delivery differ between buying center members with different functional responsibilities. Furthermore, Dadzie et al. (1999) have examined which performance-related factors (e.g. complexity and compatibility of technology, improved customer service) are the most important for buying center members concerning the purchasing of innovative technologies. In turn, Kiser, Rao, and Rao (1975) have focused on supplier-related preferences such as image, know-how, or reliability in order to identify the most relevant factors for the buying center members in the supplier selection. At least, Herbst, Barisch, and Voeth (2008) have provided an overview of varying buying center member preferences in the international context.

*Social factors.* Existing studies considering social factors mainly focus on group processes within the buying center. More concretely, these studies investigate buying center members' influence on the final purchase decision and study the ongoing interaction processes between buying center members during the decision-making process.

Studies investigating buying center member influence represent the most studies within this category as well as within the buying center analysis literature generally. Several studies analyze buying center member influence depending on their functional responsibilities in the

organization (e.g. Lilien & Wong 1984; Naumann, Lincoln, & McWilliams 1984), or depending on the different phases of organizational buying process (e.g. Kelly 1974; Bellizzi 1979; Bellizzi & Walter 1980; Erickson & Gross 1980; Robles 1984; Polley & Shanklin 1993). In this context, Bellizzi (1979; 1981) has analyzed, for instance, how buying center member influence varies with the product type purchased and the organization's size, as well as how the influence of buyers and top managers differ during the different phases of the buying process. Furthermore, Jackson, Keith, and Burdick (1984) have examined the relative influence of buying center members in different purchase situations as well as with regard to different product types and buyclasses. Further influence studies that have focused on different product types are, for instance, those of Lilien and Wong (1984), McQuiston (1989), Lewin and Bello (1997), and Lewin and Donthu (2005). Furthermore, besides the mentioned studies and, similar to those described in the context of individual factors in the previous section, some articles have analyzed buying center member influence, depending on different power sources (Thomas 1984; Kohli 1989; Venkatesh, Kohli, & Zaltman 1995; Dawes, Lee, & Dowling 1998; Tellefsen 2006).

Concerning interaction processes in the buying center, Wind and Robertson (1982) proposed adding a sixth role to the buying center role concept of Webster and Wind (1972). The so-called pin role is responsible for managing the interaction inside and out of the buying center (Wind & Robertson 1982). Furthermore, the studies of Morris and Freedman (1984), Morris, Stanton, and Calantone (1985), Morris, Paul, and Rahtz (1987), and Morris, Berthon, and Pitt (1999) deal with the buying center interactions by considering coalition building between buying center members. They have analyzed how coalitions appear in small groups as well as which organizational factors (such as reward systems or performance indicator systems) influence coalition forming. However, Dawes and Lee (1996) have analyzed buying center member interaction by focusing on the communication intensity between members and network characteristics (vertical and lateral participation), individual buying center member characteristics, and specific purchase situations (complexity, importance or time pressure of purchase). Furthermore, Ronchetto, Hutt, and Reingen (1989) as well as Bristor (1992) examined how buying center member influence is determined by network structures within the buying center. Additionally, the study of Lambert, Boughton, and Banville (1986) analyzes buying center conflicts and the ongoing interaction procedures for handling it.

*Decision-making process.* The studies by Webster and Wind (1972) and Sheth (1973) already note that the decision-making process consists of an individual-level and group-level processes. However, while they mostly marginally considered the decision-making process, Choffray and Lilien (1978) analyzed it more in-depth by illustrating the impact of buying center characteristics such as information sources, evaluation criteria, or the interaction structure on the different phases of the decision-making process. Furthermore, Bunn (1993) has identified six prototypical decision-making approaches that allow for the classification of buying centers in order to derive adaptive selling approaches for the supplier's sales force. Further studies that analyze the decision-making process examine, for instance, how buying center member influence as well as the participation of different buying center roles differ between the single phases of the buying decision process (e.g. Kelly 1974; Laczniaik 1979; Kennedy 1983; Lilien & Wong 1984; Polley & Shanklin 1993; Kauffmann 1996).

*Organizational factors.* As mentioned above, organizational factors represent external influencing factors on the buying center's internal processes and thus on the individual and social factors as well as on the buying center's decision-making process. The existing literature mainly focuses on the following organizational factors: the organization's size (e.g. Grønhaug 1975; Robey & Johnston 1977; Berkowitz 1986; Patton, Puto, & King 1986), the buyclass (e.g. Hill 1972; Wind & Robertson 1982; Bellizzi & McVey 1983; Jackson, Keith, & Burdick 1984; Anderson, Chu, & Weitz 1987; Moon & Tikoo 2002; Lewin & Donthu 2005), the product type (e.g. Bellizzi 1979; Jackson, Keith, & Burdick 1984; Lilien & Wong 1984), the complexity of a purchase (e.g. Reve & Johansen 1982; Jennings & Plank 1995; Brown et al. 2012) as well as organizational reward systems (Morris & Freedman 1984; Anderson & Chambers 1985; Morris, Paul, & Rahtz 1987). Concerning the organization's size, Berkowitz (1986) has analyzed, for instance, how this impacts buying center size, while Robey and Johnston (1977), Bellizzi (1981), and Lynn (1987) have examined the impact of an organization's size on the participation and the influence of different buying center members in the buying decision process. Furthermore, besides an organization's size, buyclass is one of the most analyzed organizational factors in the existing buying center literature. Studies on buyclass consider it, for instance, as a determinant of the buying center structure as well as of the participation, influence, or behavior of buying center members during the purchase process (e.g. Jackson, Keith, & Burdick 1984; Lewin & Donthu 2005). Similar examinations can be observed with regard to the product type, the complexity of purchase and reward systems. In this context, studies mainly analyze product type's impact on buying center member influence (e.g. Bellizzi 1979; Bellizzi & McVey 1983) or buying center structure (e.g. Spekman & Stern 1979). Other studies, for instance, examine how buying center member influence in the purchase process is determined by reward systems (e.g. Morris & Freedman 1984; Morris, Paul, & Rahtz 1987) or a purchase's complexity (e.g. Robey & Johnston 1977; McQuiston 1989).

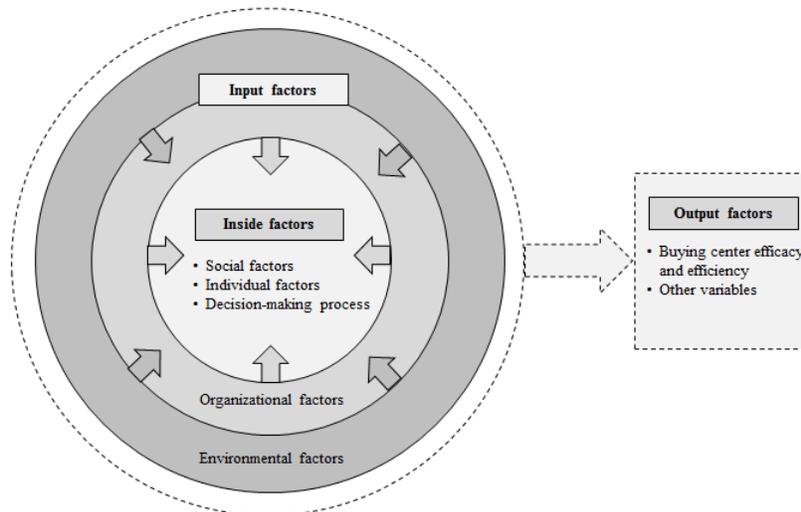
According to the structural model of Webster and Wind (1972), studies dealing with the buying center structure can also be assigned to the category of organizational factors. These studies mainly analyze how the following determinants impact the buying center structure: the buying center size (e.g. Laczniak 1979; Crow & Lindquist 1985; Naumann & Lincoln 1989; Wood 2005; Homburg, Klarmann, & Schmitt 2010), the buying center's level of formalization (e.g. McCabe 1987; Jennings & Plank 1995; Morris, Hansen, & Pitt 1995; Lau, Goh, & Phua 1999), and the buying center's level of centralization (e.g. Lau, Goh, & Phua 1999; Wood 2005; Miocevic 2008), the buying center's composition (e.g. Doyle, Woodside, & Michell 1979; Kennedy 1983; Garrido-Samaniego & Gutiérrez-Cillán 2004), the buying center members' affiliation to functional departments within the organization (e.g. Hill 1972; Kelly 1974; Woodside & Sherrell 1980; Reve & Johansen 1982; Bellizzi & McVey 1983) as well as the buying center roles (e.g. Webster & Wind 1972; Grønhaug 1975; Grønhaug 1977; Sarin 1982; Wind & Robertson 1982). Concerning buying center size, Crow and Lindquist (1985) have examined, for instance, how this is influenced by decision-making complexity, whereas Naumann and Lincoln (1989) have analyzed whether buying center size is dependent on the degree of the organization's formalization and centralization. Furthermore, Lau, Goh, and Phua (1999) have focused on the impact of purchase-specific criteria such as time pressure, importance or novelty on the buying center's levels of formalization and centralization. Formalization level has also been analyzed by McCabe (1987), who considered it under the influence of environmental uncertainty. However, Woodside and Sherrell (1980) as well as

Doyle, Woodside, and Michell (1979) have analyzed how buying center composition varies between the different phases of the buying process and by considering the different buyclasses (new buy, modified re-buy, and straight re-buy). Furthermore, the studies of Silk and Kalwani (1982), Moriarty and Bateson (1982), and Brinkmann and Voeth (2007) mainly focus on measurement methods that allow one to capture and analyze the buying center structures.

*Environmental factors.* Existing studies in the environmental factors category refer to external influencing factors that impact the buying center from the outside an organization. The analyses in this category are fairly heterogeneous. Banting et al. (1985) and Berkowitz (1986) have analyzed, for instance, how an organization's affiliation to an industry determines the participation of functional departments as well as the influence of the buying center members. Furthermore, the studies of Spekman and Ford (1977) as well as Morris, Hansen, and Pitt (1995) examine the impact of environmental uncertainty on buying center member behavior as well as on buying center structure. In this context, Roos, Veie, and Welch (1992) have mainly focused on political measurements' influence. Other authors have examined the impact of a supplier's communication actions, such as advertising (Gilliland & Johnston 1997), product placement in film scenes (Lord & Gupta 2010), sales presentation topics (Forrester & Locander 1989), or emotive product characteristics (e.g. color, texture) (Wolter et al. 1989) on buying center members or roles. Furthermore, Moriarty and Spekman (1984) as well as Bunn, Butaney, and Hoffman (2001) have analyzed which external information sources are used by buying center members in order to derive implications for optimized supplier communication. Further studies on environmental factors focus on the influence of inter-organizational processes on the buying center. Wind and Robertson (1982), for instance, considered inter-organizational processes and propose a fifth role – the pin role – to Webster and Wind's (1972) notion of buying center role. Additionally, Spekman and Johnston (1986) have analyzed how strategic relationship management might help a supplier to influence buying center members during the purchase process. Finally, it can be noted that, especially in recent years, several studies analyze e-commerce's impact on buying center structure as well as on buying center member behavior during the purchase process (e.g. Osmonbekov, Bello, & Gilliland 2002).

*Buying center's influence on other variables.* Existing literature on buying center analysis also shows that, especially in recent years, the buying center as an organizational sub-unit has also been analyzed as an influencing factor on other variables. In this context, Dadzie et al. (1999), for instance, have analyzed how the buying center and its members impact the new product technology adoption process within the overall organization. Furthermore, Pae et al. (2002) and Woodside and Biemans (2005) have examined how buying center structures as well as top management participation and/or support during the purchase process impact the intra-organizational diffusion of innovations. Homburg, Klarmann, and Schmitt (2010) have analyzed how buying center size and the heterogeneity of its composition influence the relationship between brand awareness and market performance. The same applies to Brown et al.'s (2012) study, which focuses on influencing factors on a buying center's brand sensitivity. Furthermore, Austen, Herbst, and Bertels (2012) examined how conjoint buying center satisfaction arises and how it then impacts repurchasing intentions. Furthermore, some studies focus on buying center efficacy and efficiency through technological developments such as e-commerce (e.g. Osmonbekov, Bello, & Gilliland 2002).

Upon closer examination, it becomes clear that the above-mentioned articles dealing with a buying center's influence on other variables can hardly be assigned to the content categories we adopted from the structural model of Webster and Wind (1972). Therefore, we decided to extend our categorization by a sixth category that includes all the studies that focus on a buying center's influence on other variables.



**Figure 4.** Content Analysis Categorization Scheme

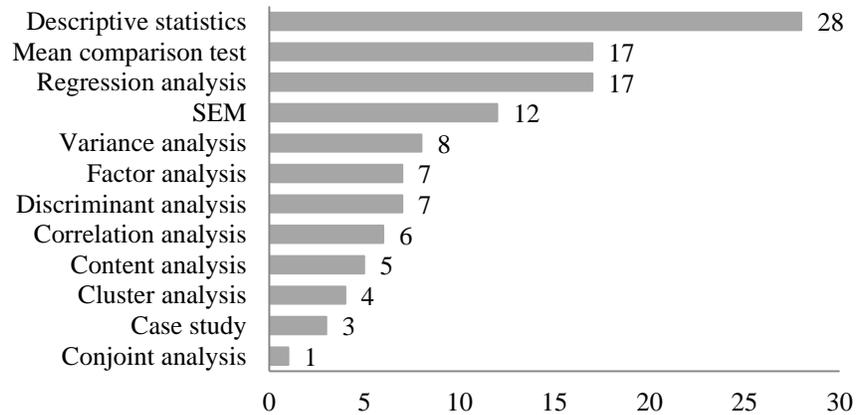
As can be seen in Figure 4, the above-mentioned categories can be grouped into three different research fields. These either focus on *inside*, *input*, or *output* factors. In this context, the individual and social factors as well as the decision-making process fall under *inside factors*, because they represent factors internal to the buying center. Because the organizational and environmental factors are external determinants of the buying center, we assigned them to *input factors*. Studies focusing on the buying center's influence on other variables belong to *output factors*. Appendix A contains an overview of the 127 buying center articles sorted by the described research fields as well as content categories.

### *The methods dimension*

To provide a comprehensive overview of the existing buying center research, besides the time and content dimensions, we also analyzed the applied statistical methods. The primary purpose of this analysis was to demonstrate the methodological status quo as well as to identify the need for further methodological research into buying center analysis. We first classified the 127 articles in our sample as either empirical or conceptual. We identified 101 empirical and 26 conceptual studies. Since the methodological analysis could only be conducted for the empirical articles in our sample, we left out the conceptual studies in the following analysis. The 101 identified empirical articles were examined concerning their applied statistical research methods.

For the categorization of statistical methods, we used pre-defined criteria, which we largely adopted from the study of Reid and Plank (2000). We then structured the empirical articles in our sample according to these pre-defined criteria. The results are presented in Figure 5.

By interpreting the results of our analysis presented in Figure 5 in detail, one notices that the most studies used a mix of different statistical methods. Thereby, the authors mainly adopted descriptive statistics (mean scores, frequencies, etc.). However, even mean comparison tests as well as regression analyses were widely used for data analysis. Furthermore, several scholars applied structural equation modeling (SEM), which also seems an adequate analysis method for buying center analysis. In this context, it is especially interesting that SEM was applied more often than variance analyses, factor analyses, or discriminant analyses. Besides the quantitative analyses used, we also identified qualitative data analysis. Studies that applied qualitative analyses mainly focus on content analyses, followed by case studies.



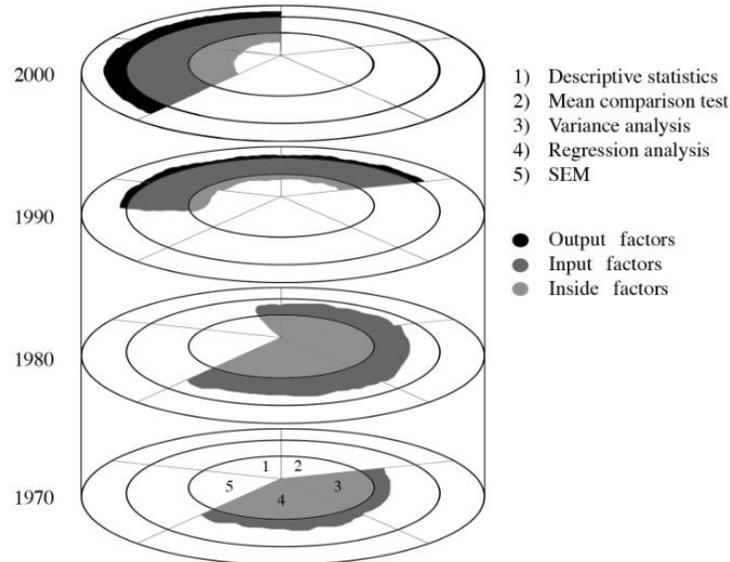
**Figure 5.** Overview of Applied Statistical Methods

## GENERAL FINDINGS

### *Summary of the status quo analysis*

In sum, the status quo of buying center research can be illustrated in a three-dimensional (time, content, and methods) visual (Figure 6). While it is hardly possible to structure the analyzed buying center studies without any overlaps, this visual provides an overview of the content-related and methodological developments of buying center analysis. It becomes clear that, in the 1970s, buying center research focused on *inside factors*. In this context, scholars have mainly used univariate statistical methods such as descriptive statistics and mean comparison tests. While studies in the 1980s focused on inside factors, they also increasingly dealt with the so-called *input factors*. Concerning statistical methods, in the 1980s, scholars began to apply multivariate methods in buying center analysis. The 1990s did not bring changes regarding the analyzed contents. Scholars continued focusing on *inside factors* and *input factors*. The late 1990s saw the first publications dealing with *output factors*. Furthermore, the statistical methods

became more complex. Besides the multivariate variance and regression analyses, researchers especially used (SEM). This trend has continued after 2000. Recently, SEM has become the mostly used data analysis method in buying center research. Nowadays, scholars also mainly focus on the *output factors*.



**Figure 6.** Status Quo of Buying Center Literature Considering Time, Contents, and Methods

### *Surpluses and shortages of buying center research*

In a next step, our status quo analysis allowed us to identify surpluses and shortages of buying center research. By surpluses, we mean buying center topics that have already been analyzed often and comprehensively, whereas by shortages, we mean topics that have only rarely been analyzed or have even been totally neglected within buying center research. For the sake of clarity, we once again draw on the categorization scheme we developed for our content-related status quo analysis. In this context, the absolute number of studies in every category (see Appendix A) gave us a first indication of how intensively the categories have been analyzed in buying center research.

We identified three categories in buying center research where there is a surplus of focus. The first concerns studies that analyze the buying center member influences during the buying process. Since the 1970s, 65 published articles have dealt with this topic. Even though the research interest was more distinct in the 1970s and 1980s (68% of publications are from this time), recent studies still focus on this topic. Meanwhile, the existing studies offer a comprehensive understanding of the buying center member influence in the buying center, in different phases of the buying process as well as on the final buying decision. Furthermore, scholars have detected a wide range of factors (e.g. personal characteristics, organizational factors) that impact member influence. However, even though 79% of the publications are empirical, researchers have mainly used univariate methods for data analysis. Therefore,

although we identified a surplus of influence literature, re-analyses with more complex statistical methods represent a shortage in this category and may well reveal further important insights.

The second category where we identified a large amount of studies is the one that focuses on buying center structure. In total, 58 publications have dealt with the buying center structure by mainly analyzing buying center's composition, member participation, buying center size, or buying center characteristics such as the degree of formalization and centralization. The buying center structure has been considered since the beginnings of buying center analysis in the 1970s and, in recent years, researchers have also used more complex statistical methods (e.g. SEM) for the data analysis. As a category, buying center structure seems well understood. However, even though the buying center role model of Webster and Wind (1972) has been applied very often in buying center research, there the need for empirical verification remains. To date, no study has empirically proven that buying center roles exist in industrial marketing practice.

The third category with a surplus of research concerns the general organizational factors that impact the buying center as an organizational sub-unit. Most studies dealing with organizational factors analyze these factors' impact on the buying center member influence (53%) and the buying center structure (48%), or on both (30%). As noted in the context of *input factors*, organizational factors were mostly considered in the 1980s and the 1990s. Researchers have mainly focused on variables such as organizational type, the organization's size, the novelty of purchase problem, and/or the purchase size. These variables have not only been analyzed by univariate statistic methods, but have also been captured by multivariate data analyses. However, although there is a surplus of research on organizational factors' impacts on buying center member influence and buying center structure, there may be a need for further research regarding the other categories of our content-related categorization scheme, such as buying center member interactions or the decision-making process.

Whereas our status quo analysis helps detect surpluses of buying center research, it is also suitable for identifying shortages within existing buying center analysis research. This is the case, first, concerning environmental factors that impact the buying center from outside the organization. Here, we noticed that the focus in the literature must shift from organizational factors to environmental factors. Even though studies have considered environmental factors in their analyses, they often deal with variables that can only partly be affected by the seller's marketing activities (e.g. environmental uncertainty). However, to derive valuable practical implications, research should focus more on environmental factors that can be influenced by the seller. While a few studies do analyze the impact of a seller's communication activities on buying center variables, future research should extend this body of literature.

The second category where we identified a need for more research is that concerning buying center member interactions. In our data sample, we only found 21 publications that dealt with this topic. However, this topic is especially important, because the final buying decision can only be achieved through buying center member interactions. In this context, Kozlowski and Klein (2000) have also indicated that interaction processes in groups such as the buying center may lead to group-level constructs (e.g. the conjoint buying center satisfaction detected by Austen, Herbst, and Bertels (2012)). Thus, in future, researchers should also pay more attention to the emergence of group-level constructs in buying center research.

Furthermore, our results point to a research shortage concerning a buying center's impact on other variables, since this category has just been developed in recent years. Researchers could, for instance, analyze how the perceived familiarity of the buying center structure by sales teams impacts sales activities and sales performance.

We also identified that constantly changing organizational buying behavior raises new questions and topics for further research. Future research could, for instance, focus on the influence of organizational developments such as the current trend of splitting the buying center members in ongoing buyer-seller interactions (Herbst & Austen 2011). This leads to a situation in which buyers and users negotiate price-related and performance-related aspects independently from each other with the sales force in order to achieve optimal bargaining outcomes. Researchers could, for instance, examine how buying center splitting influences conjoint buying center satisfaction (see Austen, Herbst, & Bertels 2012), since the price and the performance of products or services are negotiated separately and tradeoffs can no longer be made.

It must also be noted that there is also a need for re-analyses of existing studies. This is especially due to the fact that most of the existing literature and especially the studies on *input factors* (e.g. the measurement of preferences or influence) have, from the outset of buying center research, mostly been analyzed by means of simple statistical methods. However, constantly changing organizational buying behavior also requires re-analyses in order to prove the validity of existing results. For instance, concerning the current trend of splitting the buying center, it is for instance necessary to re-analyze existing studies on buying center structure as well as on buying center member influences.

## DISCUSSION

Given the upcoming importance of buying center analysis for industrial marketers, this study's primary purpose was to provide an overview of the developments and status quo of buying center research for the compilation of practical implications. We also sought to derive valuable implications for researchers by illustrating further research needs. We conducted a literature review based on nine journals that contained industrial marketing publications. We screened 10,436 articles published over the past 40 years and identified 127 papers dealing with buying center issues. We then analyzed the existing buying center literature along three dimensions: time, content, and methods.

### *Conclusions*

First, this paper serves as a summary for important practical implications. For instance, Brinkmann and Voeth (2007), who have mainly focused on the *inside factors* in buying center research, indicate the importance of selling firms' sales personnel by analyzing buying firms' buying centers. Specifically, they show that sales personnel represent a valid and reasonable information source in the context of determining buying center member preferences and influences. Another example is the study by Wood (2005), who has mainly dealt with the *input*

*factors* in buying center research. Wood (2005) concludes that the buying firm's organizational structure allows for important conclusions on buying center structure. From this, the author derives important implications for efficient sales force resource allocation. Furthermore, the article by Austen, Herbst, and Bertels (2012), which falls under the *output factors* in buying center research, examines the relationship between individual buying center member customer satisfaction and conjoint buying center satisfaction. The authors find that this relationship is nonlinear owing to buying center member interactions, since individual buying center member dissatisfactions have a stronger impact on conjoint buying center satisfaction than individual satisfaction judgments. This result has important implications for industrial marketers, because the nonlinear relationship between individual-level customer satisfaction and group-level conjoint buying center satisfaction must be considered in relation to selling firms' marketing efforts (Austen, Herbst, & Bertels 2012). The mentioned articles represent only a few examples of the practical applicability of existing buying center analysis results.

Furthermore, our status quo study has important implications for researchers. First, our results show that buying center research has stagnated in recent years. Second, we noticed that there are remarkable developments to more complex contents and research methods within buying center research over time. However, we also identified a strong need for further research. This is due, on the one hand, to constantly changing organizational buying behavior, which requires re-analyses of existing studies and also raises new research questions (e.g. concerning the rise of e-procurement systems or the splitting of buying centers for negotiations). On the other hand, it results from the fact that some buying center research topics such as the analysis of buying center group-level constructs or the buying center's impact on other variables have been neglected over the years.

### *Limitations*

While our study provides a comprehensive overview of the existing buying center literature and detects important arrays for future research in buying center analysis, it also has limitations. First, even though we already considered nine high-ranking industrial marketing and general marketing journals, there still exists buying center literature in other journals and dissertations that were disregarded in our analysis. Second, we developed the categorization scheme for our content analysis according to the structural model of Webster and Wind (1972). However, it must be noted that this only represents one possibility for structuring the existing buying center literature. Other categorization schemes could provide different insights into this area. Third, our sample only relies on studies that explicitly consider the buying center concept. We excluded from our analysis articles that consider the buying center construct marginally, as we assigned them to other industrial marketing research areas.

# Appendix A

Categorization scheme according to the structural model of Webster / Wind (1972)									
Authors	Inside factors					Input factors			Output factors
	Individual factors		Social factors		Decision-making process	Organizational factors		Environmental factors	Buying center's influence on other variables
	Individual preferences	Individual characteristics	Influence	Interaction		General organizational factors	Buying center structure		
Wilson / Woodside (1995)	x	x				x			
Choffray / Lilien (1978)	x		x		x	x	x	x	
Brinkmann / Voeth (2007)	x		x		x		x	x	
Dadzie et al. (1999)	x		x						x
Herbst / Barisch / Voeth (2008)	x				x		x	x	
Kiser / Rao / Rao (1975)	x					x			
Dawes (1996)	x					x			
Wolter et al. (1989)	x							x	
Lord / Gupta (2010)	x							x	
Martin / Daley / Burdg (1988)	x								
Töllner / Holzmüller (2011)	x								
Kauffmann (1996)		x	x	x	x	x	x	x	
Morris / Freedman (1984)		x	x	x		x			
Tanner (1998)		x	x		x				
Garrido-Samaniego / Gutiérrez-Cillán (2004)		x	x			x	x		
Barath / Hugstad (1977)		x	x			x			
Kohli (1989)		x	x			x			
Vankatesh / Kohli / Zaltman (1995)		x	x			x			
Dawes / Patterson / Midgley (1997)		x	x			x			
Dawes / Lee / Dowling (1998)		x	x			x			
Tellefsen (2006)		x	x			x			
Krapfel (1982)		x	x						
Thomas (1984)		x	x						
Dawes / Lee (1996)		x		x		x			
Woodside / Biemans (2005)		x		x			x		x
Ferguson / Johnston (2011)		x		x					
Moon / Tikoo (2002)		x			x	x			
Dawes / Dowling / Patterson (1993)		x				x	x		x
Crow / Lindquist (1985)		x				x	x		
Spekman / Ford (1977)		x				x		x	
Moriarty/Spekman (1984)		x				x		x	
Anderson / Chambers (1985)		x				x		x	
Spekman / Stewart / Johnston (1995)		x				x		x	
Bunn / Butaney / Hoffman (2001)		x				x		x	
Brown et al. (2012)		x				x			x
Forrester / Locander (1989)		x						x	
Marshall et al. (2007)		x							
Webster / Wind (1972)			x	x	x	x	x	x	
Sheth (1973)			x	x	x	x	x	x	
Möller (1985)			x	x	x	x	x	x	
Ronchetto / Hutt / Reingen (1989)			x	x		x	x		
Osmonbekov / Bello / Gilliland (2002)			x	x			x	x	x
Bristor (1993)			x	x					
Anderson / Chu / Weitz (1987)			x		x	x	x	x	
Kelly (1979)			x		x	x	x		
Laczniak (1979)			x		x	x	x		
Johnston/Bonoma (1981)			x		x	x	x		
Johnston / Spekman (1982)			x		x	x	x		
Lynn (1987)			x		x	x	x		
Ghingold / Wilson (1998)			x		x	x	x		
Berkowitz (1986)			x		x	x		x	
Lilien / Wong (1984)			x		x	x			
Ghingold (1988)			x		x		x	x	
Roos/Veie/Welch (1992)			x		x			x	
Polley / Shanklin (1993)			x		x				
Reve / Johansen (1982)			x			x	x	x	
Sarin (1982)			x			x	x	x	
Hill (1972)			x			x	x		
Gronhaug (1975)			x			x	x		
Hillier (1975)			x			x	x		
Spekman / Stern (1979)			x			x	x		
Bellizzi / McVey (1983)			x			x	x		
Robles (1984)			x			x	x		
McQuiston (1989)			x			x	x		
Lewin / Donthu (2005)			x			x	x		

Categorization scheme according to the structural model of Webster/Wind (1972)									
Authors	Inside factors					Input factors			Output factors
	Individual factors		Social factors		Decision making process	Organizational factors		Environmental factors	Buying center's influence on other variables
	Individual preferences	Individual characteristics	Influence	Interaction		General organizational factors	Buying center structure		
McNally (2002)			x			x			x
Robey / Johnston (1977)			x			x			
Bellizzi (1979)			x			x			
Fortin / Ritchy (1980)			x			x			
Bellizzi (1981)			x			x			
Bellizzi / Belonax (1982)			x			x			
Jackson / Keith / Burdick (1984)			x			x			
Naumann / Lincoln / McWilliams (1984)			x			x			
Thomas (1989)			x			x			
Webster (1993)			x			x			
Lewin / Bello (1997)			x				x	x	
Woodside / Karpati / Kakarigi (1978)			x				x		
Silk / Kalwani (1979)			x				x		
Woodside/Sherrell (1980)			x				x		
Silk / Kalwani (1982)			x				x		
Tanner / Castleberry (1993)			x				x		
Bellizzi / Walter (1980)			x						
Erickson / Gross (1980)			x						
Kohli / Zaltman (1988)			x						
McQuiston/Dickson (1991)			x						
Henthorne / LaTour / Williams (1993)			x						
Farrell / Schroder (1996)			x						
Lambert / Boughton / Banville (1986)				x	x	x			
Wind / Robertson (1982)				x		x	x	x	
Gilliland / Johnston (1997)				x		x		x	
Morris / Paul / Rahtz (1987)				x		x			
Barclay (1991)				x		x			
Buckles / Ronchetto (1996)				x		x			
Austen / Herbst / Bertels (2012)				x					x
Morris / Stanton / Calantone (1985)				x					
LaForge / Stone (1989)				x					
Morris / Berthon / Pitt (1999)				x					
Zaltman / Bonoma (1977)					x	x	x	x	
Wortzel (1983)					x	x	x	x	
Kennedy (1983)					x	x	x		
Domanski / Guzek (1992)					x	x		x	
Bunn / Liu (1996)					x	x		x	
Wilson / Lilien / Wilson (1991)					x	x			
Bunn(1993)					x	x			
Dholakia et al. (1993)					x	x			
Bunn (1994)					x	x			
Morris/Hansen/Pitt (1995)					x		x	x	
McWilliams / Naumann / Scott (1992)					x		x		
Spekman / Johnston (1986)					x			x	
Vyas / Woodside (1984)					x				
Bello / Barczak (1990)					x				
Patton / Puto / King (1986)						x	x	x	
Homburg / Klarmann / Schmitt (2010)						x	x		x
Gronhaug (1977)						x	x		
Doyle / Woodside / Michell (1979)						x	x		
McCabe (1987)						x	x		
Naumann / Lincoln (1989)						x	x		
Jennings / Plank (1995)						x	x		
Lau / Goh / Phua (1999)						x	x		
Wood (2005)						x	x		
Thomas / Grashof (1982)						x		x	
Banting et al. (1985)							x	x	
Pae et al. (2002)							x		x
Miocevic (2008)							x		x
Moriarty / Bateson (1982)							x		
Mattson (1988)							x		
Dawes / Dowling / Patterson (1992)							x		
Σ	11	27	65	21	36	81	58	34	10

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