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## Article

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## **Social Media in B2B – Usage and effects of social media in German B2B companies**

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### **Summary**

- Research questions:** How relevant is it for German B2B companies to use social media within marketing? What are the effects of social media usage in German B2B companies and how are they related to specific usage methods of social media? Are there differences in the importance of social media between larger and smaller German B2B companies?
- Methods:** A survey about usage and effects of social media was developed based on the findings of the literature review and distributed to marketing and communication professionals in German B2B companies. On the basis of the answers of 138 participants, 14 hypotheses have been tested with different statistical methods.
- Results:** German B2B organizations attach great importance to social media marketing in general, but do not want to spend more than 20 % of their marketing budget for social media. These companies use social media as brand building and sales support tools, but not for customer relationship management or innovation management. Furthermore, within these 138 German B2B companies, brand advocacy can be enhanced by social media usage as a brand building tool, customer satisfaction as a sales support tool, and customer communication as a customer relationship management tool.  
Another finding of this study is that smaller and larger German B2B companies attach the same importance on social media.
- Structure of the article:** Introduction; Literature review; Research questions & methods; Empirical results; Conclusions; About the author; Bibliography

### **Introduction**

During recent decades, marketing has not only evolved from an originally product-centric approach (McCarthy, 1964) to a customer-centric approach (Kotler, P; Kartajaya, H; Setiawan, 2017) (Jara, Parra, & Skarmeta, 2012). It has also changed from one-directional communication to bi-directional conversations between companies and customers (Lindenblatt, 2014).

Today, it is common practice to hold these conversations about products or brands over social media (SM). Differently from the past, social media enables people to share their personal feelings and thoughts (Tsimonis & Dimitriadis, 2014). This can result in praise as well as in scorn (Gallaughier, J; Ransbotham, 2010). Both, in turn, have huge impact on businesses and can affect customer relationships and brand loyalty, for example.

On the other hand, social media enable organizations to foster relationships with their customers or other stakeholders in a very efficient and cost-effective way compared to traditional communication methods. As a result, social media are an interesting tool for firms, regardless of their size (Kaplan & Haenlein, 2010).

In this research, the usage and effects of social media in German B2B companies will be investigated.

## Literature Review

B2B usage of social media was mentioned in a scientific paper for the first time in 2011 (Michaelidou, Siamagka, & Christodoulides, 2011) and has evolved over time (Andersson & Wikström, 2017). Generally speaking, being active on social networking sites is the usual strategic approach taken by B2B companies to using social media (J. J. Jussila, Kärkkäinen, & Aramo-Immonen, 2014). Thereby, B2B firms have already realized that Facebook, LinkedIn, and Youtube can be used effectively, while Instagram and Twitter often do not satisfy expectations (Andersson & Wikström, 2017).

Another aspect of the usage of social media within B2B businesses is that it often happens inactively (Järvinen, Tollinen, Karjaluo, & Jayawardhena, 2012). That is due to the fact that, on the one hand, B2B firms only want to publish their specific content on social networking sites but do not encourage people to start conversations (Andersson & Wikström, 2017). On

the other hand, customers in a B2B environment also do not have the intention of starting conversations via social media as they prefer to use social networking sites purely as a source of information (Keinänen & Kuivalainen, 2015).

Reviewing the current scientific literature, the usage of social media in B2B companies can be grouped as follows:

### *SM as a recruiting tool in B2B*

Social media can support every organization's recruiting process in terms of branding the company to future employees (Sivertzen, Nilsen, & Olafsen, 2013), (Fisher, McPhail, You, & Ash, 2014), (Kumar & Möller, 2018). This also happens in B2B companies (Fensel, Kett, & Grobelnik, 2012) and is one of the most widely used social media activities of B2B firms (J. J. Jussila et al., 2014). To do so, businesses try to identify employees who are eager to act as brand advocates on social networking sites and share company-related content with their personal network (Korzynski, Mazurek, & Haenlein, 2020). This, in turn, and according to these researchers, creates electronic word-of-mouth (eWOM) and helps by attracting potential new talent. eWOM within the scope of B2B markets has rarely been researched to date. Nevertheless, it has already been discussed in an academic thesis that eWOM occurs in this context with regard to employee advocacy (Viinanen, 2020), as explained before.

It is also possible for businesses to place job advertisements on social networking sites. But this direct method of using social media as recruiting tool does not work that effectively for B2B firms, as the persuasive power of these ads is lower compared to ads placed in non-social media platforms such as job search engines. Instead, people want to inform themselves about the brand image of a B2B company on social media if they are interested in a job there (Kumar & Möller, 2018).

On the other hand, social media provide a new way of assessing candidates during the recruitment process, although this has to be handled with care due to a lack of success record (Roth, Bobko, Van Iddekinge, & Thatcher, 2016). Either way, the majority of employers scan the LinkedIn profiles of prospective candidates, in particular, to find out more about these individuals (Hosain & Liu, 2020).

*SM as a brand building tool in B2B*

To start with, a brand is a highly valuable asset for companies as it generates a competitive advantage also in B2B markets (Majerova, Kubjatkova, & Republic, n.d.). According to these researchers, brand building also takes time and needs engagement on the part of different parties such as employees and customers. This engagement can be driven via social media due to its conversational character (Kaplan & Haenlein, 2010), (Michaelidou et al., 2011). So it is hardly surprising that most B2B enterprises name creating and maintaining brand awareness as a key objective for their social media activities (Järvinen et al., 2012), (Cawsey & Rowley, 2016).

In this respect, B2B businesses have also realized that it makes more sense to use social media for soft targets such as brand building than for hard targets such as sales (Brennan & Croft, 2012). To do so, another research group recommends that B2B firms strategically develop brand content that leads to emotional brand associations, as people prefer to share this kind of content on social networking sites (Contreras, Cheng, & Nghiem, 2019). Ideally, this turns users into fans or brand advocates, provides electronic word-of-mouth, and keeps people close to the brand (Tsimonis & Dimitriadis, 2014).

*SM as a sales support tool*

Today, researchers agree that social media can be a supportive tool in B2B sales (Rodrigues, Takahashi, & Prado, 2020), although this does not directly affect sales performance (Agnihotri, Dingus, Hu, & Krush, 2016), (Itani, Agnihotri, & Dingus, 2017). Instead, social media are used for different purposes within the B2B sales process. First, they are used for promotional purposes (Rodrigues et al., 2020) or product presentations during the order acquisition phase (Andersson & Wikström, 2017); second, for fact-finding about competitors (Itani et al., 2017); third, to be able to answer customer inquiries faster, which simultaneously improves customer satisfaction (Agnihotri et al., 2016); and fourth, for post-sales support (Rodrigues et al., 2020).

In addition to that, B2B salespeople are increasingly often forced to use social media, as their counterparts on the customer side want to communicate

via this channel (Nunan, Sibai, Schivinski, & Christodoulides, 2018).

*SM as a customer relationship tool in B2B*

While scientists see clear advantages in relationship building via social media in B2C markets (Kumar, Bezawada, Rishika, Janakiraman, & Kannan, 2016), (Rathore, Shioramwar, & Ilavarasan, 2016), (Archer-Brown & Kietzmann, 2018), they do not agree about its benefits in B2B markets. First, social media is still not used in B2B firms for building relationships with clients and therefore does not result in a better performance in the field of customer relationship management (Rathore et al., 2016). Second, B2B buyers – the customers in the B2B world – are not willing to take the time to share purchasing-related information on social networking sites as they themselves do not rely on social media signals (Aneesh, M., & Caroline, 2020).

On the other hand, B2B purchasers nevertheless try to find new information via social media that could assist their buying decisions – also within the scope of strategic relationships (Steward, Narus, & Roehm, 2018). Furthermore, B2B customers would rather use restricted social media tools to connect with their suppliers, as this is then solely business-related (Keinänen & Kuivalainen, 2015).

To sum up, it is unclear within the literature until now whether social media are a fruitful relationship management tool for B2B businesses. Either way, a recent academic study shows that social media can improve teamwork and connectedness in B2B markets, both internally and externally (Chae, McHaney, & Sheu, 2020).

*SM as an innovation management tool in B2B*

Not been much research has been conducted until now on the use of social media as an innovation management tool in B2B environments. However, two studies have already worked out its potential. The older one describes how social media can shorten the time to market in B2B product innovation while enhancing customer centricity and the level of customer service (J. Jussila, Kärkkäinen, & Leino, 2011). Furthermore, this research group found that social media does not help during the ideation phase of B2B firms, as this involves exchanging highly confidential information during this stage, which cannot be conducted very well via social

media. This is confirmed in 2013 by another study, which identifies the largest potential of social media as an innovation management tool in B2B during the commercialization phase (Kärkkäinen, Jussila, & Väisänen, 2013).

#### *SM as a knowledge management tool in B2B*

The first published study about social media as a knowledge management tool shows that B2B companies can not only utilize social media for gaining information or knowledge one-way from customers, but also for co-creation, which means a collaborative sharing of knowledge in both directions (Kärkkäinen, Jussila, & Janhonen, 2011). Nevertheless, according to this research group this was still regarded very skeptically by B2B firms at that time.

Other scientists have confirmed that social media networks can push the learning process within B2B firms by simplifying how knowledge is shared and gained (Pettersson, Aramo-Immonen, & Jussila, 2014). Recent findings about B2B markets look into this in more detail, explaining that social media are already used by B2B firms for building knowledge, but only scantily for sharing it (Ammirato et al., 2019). Finally, according to them, B2B firms would need structured approaches to use social media as a complete knowledge management tool.

#### *Effects of social media in B2B*

It is possible to derive certain general effects of social media within B2B businesses from the literature review. First, B2B firms reach larger audiences via social media compared to traditional media (Lashgari, Sutton-Brady, Solberg Søylen, & Ulfvengren, 2018). Second, B2B businesses enhance their transparency and trust in general if their Chief Executive Officers (CEOs) present themselves in a charismatic and personable manner on social media (Mudambi, Sinha, & Taylor, 2019). Third, social media usage by B2B sales people increases the ability for cross-cultural behavior (Pandey & Lucktong, 2019) and enhances export performance (Eid, Abdelmoety, & Agag, 2020). Fourth, social media and its user-generated content can influence the stock performance of B2B firms, especially with regard to negative eWOM (X. Liu, 2020).

In addition, the six aforementioned usage methods of social media in B2B have specific effects for B2B businesses, as follows:

#### *Employer branding*

Only little research has been conducted on this topic in a B2B context until now. On the one hand, there is evidence that employer branding occurs as an effect of social media usage and thus can generate new job applicants (Sivertzen et al., 2013). On the other hand, it will require long-term investment for B2B firms to build a reputation as a good employer on social media (Kumar & Möller, 2018).

#### *Brand awareness, brand building, and brand advocacy*

The brand awareness effect is achieved especially if B2B firms work with influencers who spread eWOM over social networking sites. This, in turn, leads to an improved brand image and enhances brand reputation (Cawsey & Rowley, 2016).

Brand building occurs particularly if B2B firms use their CEO as chief spokesperson in social media. Millennials accelerate this effect, as they prefer to work with companies where they can start a conversation on social media with the CEO. Simultaneously, millennials are increasingly involved in B2B buying decisions and thus important stakeholders for B2B firms (Mudambi et al., 2019).

Finally, the effect of brand advocacy can be best achieved if B2B companies spread content on social media that is easy to read, but also interesting and illustrated with images (McShane, Pancer, & Poole, 2019). According to these researchers, the greatest brand advocacy effect occurs if B2B firms share this content during non-working hours.

### *Customer loyalty, customer satisfaction, and sales performance*

If purchasers are willing to buy the same product from the same supplier several times repeatedly, this is called customer loyalty (Algesheimer, Dholakia, & Herrmann, 2005). This customer loyalty can be generated by B2B sales people's use of social media. Nevertheless, the effect of customer loyalty can only be exploited within the scope of interpersonal conversations on social media. Therefore, B2B firms should especially train salespeople in using social media as a means of improving integrity and benevolence, which then can lead to customer loyalty (Zhang & Li, 2019).

The term 'customer satisfaction', however, is defined as resulting from the comparison of customers' expectations before the buying process with the perceived post-purchase performance (Parasuraman, Zeithaml, & Berry, 1988). This customer satisfaction can be achieved by B2B firms as an effect of their sales people's social media usage, as they improve their responsiveness in connection with social media usage (Agnihotri et al., 2016). This corresponds with another study, which found that the usage of social media in a B2B context has a positive effect on customer satisfaction in general (Dwivedi, Ismagilova, Rana, & Weerakkody, 2019).

Enhanced sales performance can be another sales-related effect of using social media (Rodriguez, Peterson, & Krishnan, 2012). Yet this effect cannot be statistically proven. Instead, the usage of social media by B2B salespeople influences their skills, knowledge, and behavior. This, in turn, influences the performance of these salespeople. As a result, improved sales performance can be an effect of B2B sales from people's social media usage, but it does not ensure it (Itani et al., 2017). Furthermore, enhanced cross-cultural B2B sales performance in international sales environments can be an effect of social media usage as well (Pandey & Lucktong, 2019).

### *Conversations with customers*

One of the best-known effects of social media is enabling companies to start conversations with customers (Kaplan & Haenlein, 2010), (Lindenblatt, 2014). This applies to B2B firms, too (Rodriguez et al., 2012), (Diba, Vella, & Abratt, 2019), (Chuang, 2020).

B2B firms exploit this effect especially during the initial purchasing phase, when a lot of additional knowledge and specifications about the product or service is needed (Diba et al., 2019). According to these researchers, this effect is a win-win all around within the B2B supply chain for sellers and purchasers alike.

Furthermore, B2B firms can gather information and respond to customer inquiries faster when they utilize this effect (Chuang, 2020).

### *Co-creation and open innovation*

Open innovation is defined as "the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation, respectively" (Enkel, Gassmann, & Chesbrough, 2009). The term co-creation is used by scientists as a synonym for the term open innovation (Rayna & Striukova, 2015).

Social media usage by B2B firms facilitates co-creation by providing a digital alternative to personal meetings, especially in the initial phase of innovation projects. In addition, social media support this open innovation particularly within customized software developments, as specific requirements and features can be discussed easily via social networking sites (Krings, Palmer, & Inversini, 2014).

Furthermore, B2B firms gain access to larger audiences through social media compared to traditional media. This, in turn, enables B2B companies to innovate together with a wide range of experts from various fields (Lashgari et al., 2018).

### *Thought leadership*

A study within the B2B company IBM found that senior executives from this firm use social media with the effect of leading and shaping the debate in their areas of expertise (Bernard, 2016). This is precisely the meaning of "thought leadership".

This corresponds with another piece of research that referred to thought leadership in a B2B surrounding as an effect of constantly sharing valuable content on social media, with a problem-solving approach in the best case scenario. In so doing, B2B firms can not only demonstrate their noticeable lead in knowledge, but also improve the relevance of their brand (Magno & Cassia, 2019).

To achieve the effect of thought leadership, it is recommended that B2B managers publish professional but also lively posts on the social networking site LinkedIn. This, in turn, is the basis for becoming a prominent industry insider or key opinion leader, which are both important aspects of thought leadership (Chuang, 2020).

## Research Questions & Methods

### *Conceptual framework*

This research investigates the usage and effects of social media in German B2B companies. To examine the first element, a theoretical framework for the usage of social media in B2B companies was derived from the literature review. All the studies used to develop this framework, bar one, were conducted outside Germany. Hence, checking whether this framework applies to German B2B companies is not only interesting, but also adds new knowledge to the scientific world. To verify whether this framework applies to German B2B companies, the following research question was formulated:

Q1: How important is it for German B2B companies to use social media within marketing?

This leads to the following hypotheses:

H1: It is important for German B2B companies to use social media as a recruiting tool.

H2: It is important for German B2B companies to use social media as a brand building tool.

H3: It is important for German B2B companies to use social media as a sales support tool.

H4: It is important for German B2B companies to use social media as a customer relationship management tool.

H5: It is important for German B2B companies to use social media as an innovation management tool.

H6: It is important for German B2B companies to use social media as a knowledge management tool.

To examine the second element, a general theoretical framework for the effects of social media in B2B companies was derived from the literature review. All of the studies used to develop this framework were conducted outside Germany. Hence, it is interesting in itself to check whether the framework also applies to German B2B companies. As even further knowledge

about the effects of social media in B2B shall be gained through this study, these researched effects of social media in B2B will be correlated to the usage methods of social media in B2B that could cause these effects, then investigating this specifically in German B2B companies.

To verify that, the following research question was formulated:

Q2: What are the effects of social media usage in German B2B companies and how are they related to specific usage methods of social media?

This leads to the following hypotheses:

H7: If German B2B companies use social media as a recruiting tool, this leads to the effect of employer branding.

H8: If German B2B companies use social media as a brand building tool, this leads to the effect of brand advocacy.

H9: If German B2B companies use social media as a sales support tool, this leads to the effect of customer satisfaction.

H10: If German B2B companies use social media as a sales support tool, then this leads to the effect of customer loyalty.

H11: If German B2B companies use social media as a customer relationship management tool, this leads to the effect of conversations with customers.

H12: If German B2B companies use social media as an innovation management tool, then this leads to the effect of open innovation.

H13: If German B2B companies use social media as a knowledge management tool, this leads to the effect of thought leadership.

An overview of the conceptual framework of the hypotheses H1 to H13 is given below (Figure 1).

In addition, researchers have already stated that social media are much more important for larger B2B companies than for small and medium-sized enterprises (Töllinen, Järvinen, 2012). To verify whether this is also true for German B2B companies, the following research question was formulated:

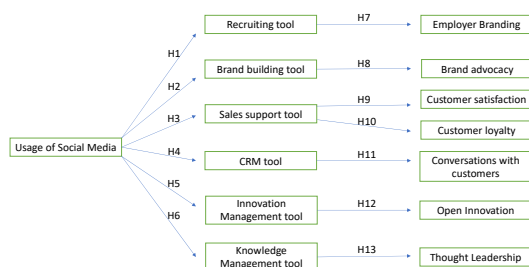
Q3: Are there differences in the importance of social media for larger and smaller German B2B companies?

That leads to the final hypothesis:

H14: There are no differences in the importance of social media between larger German B2B companies and smaller German B2B companies.

Figure 1

*Conceptual framework of the hypotheses H1 to H13 (own presentation)*



### Methodology

In consideration of similar studies conducted in other countries, the most suitable methodological approach is to use a quantitative survey for collecting the data for this study. The survey was self-designed and consisted of 36 questions. First, respondents were screened regarding workplace and department to ensure that only people from the intended target group (people who work in marketing for a German B2B company) answered the survey.

Second, three basic questions followed to investigate the general importance of social media in the respective company. Third, 20 questions ensued to investigate the hypotheses H1 to H6 about the usage of social media. For this purpose, each usage method for social media stated in the hypotheses H1 to H6 was operationalized by three or four questions that addressed a specific item that is part of the respective usage method and could be derived from the literature review. An overview of the variables used to operationalize each usage method of social media is shown in Table 4.

Fourth, eight questions followed to investigate the hypotheses H7 to H12 about the effects of social media. To do so, it was first investigated if companies in general wanted to cause an effect with their social media posts by asking them about the importance of a specific call-to-action in their posts. Furthermore, each effect of social media stated in the hypotheses H7 to H12 was operationalized by a question about the change in a specific self-designed key performance indicator

(KPI) in 2019 compared to the years before. These questions were designed with a scale that showed the change in these KPIs, offering the answers 'more than before', 'same as before', and 'less than before'. The answer 'not known' was added to these questions after the pre-test of the survey. These KPIs were related to each of the effects of social media derived from the literature review. The following KPIs were used as variables in the survey:

- 'Number of applicants' as a variable to evaluate the effect 'employer branding',
- 'Number of social mentions' as a variable to evaluate the effect 'brand advocacy',
- 'Number of customer complaints' as a variable to evaluate the effect 'customer satisfaction',
- 'Number of repeat purchasers' as a variable to evaluate the effect 'customer loyalty',
- 'Number of external comments on social media posts' as a variable to evaluate the effect 'conversations with customers',
- 'Number of people from outside the company included in the innovation process' as a variable to evaluate the effect 'open innovation',
- 'Number of inquiries to place employees as conference speaker' as a variable to evaluate the effect 'thought leadership'.

The questionnaire ended with demographic questions. It was pre-tested by two people from the target group.

Data was collected from an arbitrary random sample of marketing and communication managers at German B2B companies that deal with social media in their daily practice. The first part of the sample was drawn from persons known personally to the researcher through her work as a journalist. This initial sample group included  $N = 235$  persons and was invited via email to participate in the survey. The second part of the sample was drawn by distributing the link to the survey via the LinkedIn profile of the researcher. To do so, the researcher published a post on her personal LinkedIn profile with a call-to-action to either participate in the survey or forward it to colleagues who were part of the described target group. During the period of data collection, this LinkedIn post generated 4239 views, 84 likes, 54 comments, and was shared 14 times.



The survey was answered completely by  $N = 138$  persons.  $N = 92$  (66.7 %) participants came via email.  $N = 46$  (33.3 %) participants of the survey were recruited via LinkedIn. The data was collected over ten days from 15 to 24 august 2020 via an anonymous computer-based survey hosted on <https://www.soscisurvey.de>. All survey participants worked for B2B companies that operate in Germany, but represented various industries within B2B. The respondents came from companies with different numbers of employees ranging from 1-9 to more than 10,000. They worked in various jobs within the marketing department of B2B companies. The characteristics from the sample are described in Table 1. All statistical tests for evaluating the data were performed using the statistical software SPSS version 26.

## Empirical Results

### *Descriptive statistics*

To start with, some general data about the usage of social media in German B2B companies were analyzed. Statistics from this showed that  $N = 105$  (76.1 %) of all respondents ( $N = 138$ ) have a specific social media strategy within their company (see Table 2). This is more than three quarters and thus the clear majority. While  $N = 26$  (18.8 %) of all respondents do not have a specific social media strategy in their company,  $N = 7$  (5.1 %) don't actually know whether this is the case or not (Table 2).

This corresponds with statistics about the general importance of social media within the marketing mix of German B2B companies. Social media are evaluated as 'important', 'fairly important', or 'very important' by  $N = 126$  (91.3 %) of all respondents, which is far more than three quarters. Furthermore, social media are seen as 'slightly important' by only  $N = 12$  (8.7 %), while no one rated them as 'not important at all'. It is fitting that the mean of the variable 'general importance of social media within the marketing mix' ( $M = 3.81$ ;  $SD = .92$ ) in relation to the scale (Likert scale from 1 = not important at all to 5 = very important) was very high (see Table 3). A One-Sample T-Test shows a statistically significant mean difference to a test value of  $M = 3$  ( $p < 0.01$ ).

On the other hand, the data also show that with  $N = 104$  (75.4 %), the majority of all respondents only spend 0-20 % of their marketing budget on social media marketing (see Table 4). This could also include nothing, or nearly nothing, being spent on social media. However,  $N = 26$  (18.8 %) of all respondents spend 21-40 % of their marketing budget on social media marketing, and  $N = 8$  (5.8 %) even spend 41-80 % (Table 4).

In the next step, data about the six specific usage methods of social media within B2B derived from the literature review were described. These six usage methods were each operationalized with three to four variables in the survey. An overview of the means and standard deviations of these variables is given in Table 4. Based on the underlying 5-point Likert scale (1 = 'not important at all' to 5 = 'very important'), all usage methods with means  $> 3$  were on average rated as important or higher by the sample group. This is the case for twelve of the 20 variables (see Table 5).

There are three variables with means  $> 4$ . These are 'making your brand more known' ( $M = 4.25$ ;  $SD = .86$ ), 'increasing the number of people who recognize your brand' ( $M = 4.12$ ;  $SD = .92$ ), and 'spreading information' ( $M = 4.07$ ;  $SD = 1.13$ ).

Moreover, there are two variables with  $3.5 < M < 4$ . These are 'being in control over the image of your brand' ( $M = 3.92$ ;  $SD = 1$ ) and 'product presentations and promotions' ( $M = 3.56$ ;  $SD = 1.05$ ). Their means are still high and closer to 4, i.e. 'fairly important', than to 3, i.e. 'important'.

Furthermore, there are three variables with low means  $< 2.5$ . These are 'candidates' assessment during the recruitment process' ( $M = 2.16$ ;  $SD = .91$ ), 'innovating in collaboration with others' ( $M = 2.34$ ;  $SD = 1.03$ ), and 'sharing technical issues about products with external experts/partners' ( $M = 2.04$ ;  $SD = .84$ ).

The aim of this research was to gain better insights into the six superior usage methods of social media. To do so, the means of these 20 variables were clustered into six factors reflecting the six usage methods. After that, new means were computed for each of the six methods on the basis of the means that belong to each factor (Table 6). These six usage methods are 'usage of social media as a recruiting tool' ( $M = 2.87$ ;  $SD = .47$ ), 'usage of social media as a brand building tool' ( $M = 4.1$ ;  $SD = .17$ ), 'usage of social media as a

sales support tool' ( $M = 3.38$ ;  $SD = .12$ ), 'usage of social media as a CRM tool' ( $M = 2.6$ ;  $SD = .08$ ), 'usage of social media as an innovation management tool' ( $M = 2.5$ ;  $SD = .56$ ), and 'usage of social media as a knowledge management tool' ( $M = 3.15$ ;  $SD = .82$ ).

Moving on to an analysis of the effects of social media, the statistics reveal that  $N = 110$  (79.8 %) of all survey participants ( $N = 138$ ) rated it as important, or even higher, to end their social media posts with a specific call-to-action in order to generate a specific effect (Table 7). This already confirms that the majority of German B2B companies want to achieve a specific effect with their social media usage.

The next step describes data about the specific effects of social media usage within B2B. Seven KPIs were defined that measured seven different effects of social media usage in German B2B companies. Respondents were asked to rate whether each of these KPIs had increased, decreased, or remained constant in 2019 compared to the years before. An overview of the means and standard deviations of these variables is given in Table 8. The mean values shown in Table 8 are to be interpreted as follows:  $1 < M < 1.5$  indicates that the KPI increased over time;  $1.5 \leq M < 2$  that the KPI remained roughly the same with a tendency to increase;  $M = 2$  that the KPI stayed the same over time;  $2 < M \leq 2.5$  that the KPI remained roughly the same with a tendency to decrease;  $2.5 < M < 3$  that the KPI decreased over time.

It can be seen in Table 8, that  $N$  differs from variable to variable. The reason is that there was an answer option of 'not known' within the survey. To calculate the mean, only the other answer options that showed a decreasing, increasing, or constant variable over time were used. Looking at the mean values of the variables shown in Table 8, the statistic reveals that all means have values  $1.3 < M < 1.81$ , except one, which is the 'number of customer complaints' ( $M = 2.26$ ). This is due to the fact that an increase of this variable (scale value 1 = more than before) represents an increase in customer complaints and thus an undesirable development, while an increase of all other variables in this table signifies a positive development. As a result, the variable 'customer complaints' has to be interpreted differently. The statistics show that the KPI 'number of customer complaints' ( $M = 2.26$ ) remained roughly the same, with a small tendency to decrease over time. However, it must be considered that with  $N = 62$ , less

than half of all respondents answered this question without using the answer option 'not known'.

Furthermore, the companies surveyed determined that the KPI 'customer complaints' remained roughly constant, with a tendency to decrease. All other KPIs shown in Table 8 remained roughly the same, with a tendency to increase.

### Testing H1 to H6

Referring to the descriptive statistics in Table 2, it can be assumed that social media are used in more than three quarters of the questioned German B2B companies, as you normally only develop a specific strategy for a topic you also work on. Furthermore, and referring to the descriptive statistics in Table 3, it can be assumed that in addition to these companies that already have a social media strategy, all companies that rated social media as important or higher at least plan to use social media in future. This, in turn, means that 91.3 % of all questioned German B2B companies already use social media or at least plan to use social media. On the other hand, the descriptive statistics in Table 4 show that most B2B companies are still not willing to pay a lot for social media marketing.

The overall goal of hypotheses H1 to H6 was to find out how German B2B companies use social media.

A One-Sample T-Test was run to test if the importance values of the sample are higher than a defined importance value of the normal population of  $M = 3$  (fairly important). This is based on an interpretation of mean scores as follows: for  $3 \leq M \leq 5$  the hypothesis is supported, while for  $1 \leq M < 3$  the hypothesis is not supported.

As a result (Table 6), H1 (SM as a recruiting tool;  $M = 2.87$ ) cannot be evaluated, as the mean difference from  $M = 3$  is not statistically significant. This is also true for H6 (SM as a knowledge management tool;  $M = 3.15$ ).

H4 (SM as a CRM Tool;  $M = 2.6$ ) and H5 (SM as an innovation tool;  $M = 2.5$ ) are not supported based on their significantly different mean values below  $M = 3$  ( $p < 0.01$ ), which means that it is not considered important for German B2B companies to use social media as a CRM or innovation management tool.

In contrast to that, H2 (SM as a brand building tool;  $M = 4.1$ ) and H3 (SM as a sales support tool;  $M =$

3.38) are supported ( $p < 0.01$ ). This means that it cannot be statistically refuted that it is considered important for German B2B companies to use social media as brand building and sales support tool.

#### *Testing H7 to H13*

The overall goal of these hypotheses was to find out if specific effects of social media in German B2B companies are related to specific usage methods for social media. To test the hypotheses, a multiple linear regression analysis was used. This statistical test was selected as it is not only able to show the interdependency of variables, but also assumes a clear cause-and-effect relationship from the beginning. In order to guarantee that the assumptions of normality, linearity, and multicollinearity have not been violated, preliminary analyses were performed for the following regression analyses.

For testing H7, a multiple linear regression analysis was run with  $N = 75$  participants to predict the dependent variable 'number of applicants' from the independent variables 'attracting new talents', 'placing job offers', 'candidates' assessment during the recruitment process', and 'recruiting students and trainees'. Using the enter method, these independent variables did not statistically significantly predict the number of applicants ( $F(4,70) = 1.204, p = .32$ ) (Table 9).

For testing H8, a multiple linear regression analysis was run with  $N = 108$  participants to predict the dependent variable 'number of social mentions' from the independent variables 'making your brand more known', 'increasing the number of people who recognize your brand', and 'being in control over the image of your brand' (Table 9). Using the enter method, these independent variables did statistically significantly predict the number of social mentions ( $F(3,104) = 3.664, p < .05$ ). But with an  $R^2 = .096$ , the independent variables explain only 9.6 % of the variability of our dependent variable. The statistics also reveal that each independent variable for itself does not significantly predict the value of the 'number of social mentions'. However, according to the general significance, the model does fit, as the variable 'number of social mentions' can be used as a KPI for the effect 'brand advocacy'.

For testing H9, a multiple regression analysis was run with  $N = 62$  participants to predict the dependent variable 'number of customer complaints' from the independent variables 'generating leads', 'salespeople using social media themselves as a supportive tool', 'product presentations and promotions', and 'fact-finding about competitors' (Table 9). Using the enter method, these independent variables did statistically significantly predict the number of customer complaints ( $F(4,57) = 3.816, p < .01$ ). With an  $R^2 = .211$ , the independent variables explain 21.1 % of the variability of our dependent variable. The statistics also reveal that only two of the four independent variables do significantly predict the value of the 'number of customer complaints'. These are 'product presentations and promotions' ( $p < .01$ ) and 'fact-finding about competitors' ( $p < .01$ ). However, according to the general significance, the model does fit, as the variable 'number of customer complaints' is used as a KPI for the effect 'customer satisfaction'.

For testing H10, a multiple linear regression analysis was run with  $N = 80$  participants to predict the dependent variable 'number of repeat purchasers' from the independent variables 'generating leads', 'salespeople using social media themselves as a supportive tool', 'product presentations and promotions', and 'fact-finding about competitors' (Table 9). Using the enter method, these independent variables did not statistically significantly predict the number of applicants ( $F(4,75) = 1.099, p = .364$ ).

For testing H11, a multiple linear regression analysis was run with  $N = 114$  participants to predict the dependent variable 'number of external comments on social media posts' from the independent variables 'building new relationships with stakeholders along the supply chain', 'fostering existing relationships with stakeholders along the supply chain', and 'improving teamwork with external partners' (Table 9). Using the enter method, these independent variables did statistically significantly predict the number of external comments on social media posts ( $F(3,110) = 3.439, p < .05$ ). With an  $R^2 = .086$ , the independent variables explain only 8.6 % of the variability of our dependent variable. The statistics also reveal that each independent variable for itself does not significantly predict the value of the 'number of comments on social media posts'. However, according to the general significance, the model does fit, as the variable 'number of external

comments on social media posts' is used as a KPI for the effect 'conversations with customers'.

For testing H12, a multiple linear regression analysis was run with  $N = 66$  participants to predict the dependent variable 'number of externals included in innovation process' from the independent variables 'innovating in collaboration with others', 'researching market insights', and 'exchanging technical issues about products with external experts/partners' (Table 9). Using the enter method, these independent variables did not statistically significantly predict the number of external partners included in the innovation process ( $F(3,62) = 1.838, p = .149$ ).

For testing H13, a multiple linear regression analysis was run with  $N = 102$  participants to predict the dependent variable 'number of inquiries to place employees as conference speakers' from the independent variables 'spreading information', 'sharing knowledge', and 'collecting new knowledge' (Table 9). Using the enter method, these independent variables did not statistically significantly predict the number of inquiries to place employees as conference speakers ( $F(3,98) = .751, p = .524$ ).

Hypothesis 14 assumes that people working for larger German B2B companies evaluate the importance of social media in the same way as those working for smaller German B2B companies. To test this

hypothesis, the whole sample ( $N = 138$ ) was divided into two groups: larger and smaller German B2B companies (Table 10), with larger companies defined as having 500 or more employees and smaller companies defined as having less than 500 employees. This led to almost equivalent sample sizes of  $N = 68$  (49.3 %) for smaller German B2B companies and  $N = 70$  (50.7 %) for larger German B2B companies.

The means of these two groups were compared with regard to the variable 'general importance of social media' using an independent t-test. The value of the means ( $M_{\text{smaller German B2B companies}} = 3.78$ ;  $SD_{\text{smaller German B2B companies}} = 0.97$ ); ( $M_{\text{larger German B2B companies}} = 3.84$ ;  $SD_{\text{larger German B2B companies}} = 0.88$ ) in relation to the scale (Likert scale from 1 = not important at all to 5 = very important) was high in both groups, which indicates that both groups on average rate social media as almost 'fairly important' in their companies.

The results of the Independent Group T-Test revealed that it cannot be deduced that smaller German B2B companies assign a different importance to social media than larger German B2B companies, as no significant difference was found ( $p = .69$  (see Table 10). Therefore, H14 can be supported.

Table 1:

*Sample characteristics of survey participants (total sample: N = 138)*

Sample characteristics	n	%
Industry		
Electronics production/automation technology	39	28%
IT or IT-related services	19	14%
Engineering industry	35	25%
Supply industry	17	12%
Other service provider	5	4%
Logistics	4	3%
Other	19	14%
Size (number of employees)		
micro (n<10)	8	6%
small (10≤n<50)	23	17%
medium (50≤n<250)	22	16%
large (n≥250)	85	61%

Table 2:

*Availability of a specific social media strategy in German B2B companies*

Social media strategy available	N	n	%
Yes	138	105	76.1
No	138	26	18.8
Don't know	138	7	5.1

Table 3:

*Means (M) and standard deviations (SD) for general importance of social media in German B2B companies*

Item	N	M	SD
General importance of social media	138	3.81*	0.92

*Scale values: 1 (not important at all) to 5 (very important);**\*p < 0.05, \*\*p < 0.01 (test value M = 3.0)*

Table 4:

*Percentage of marketing budget of German B2B companies spent on social media*

Percentage of companies' marketing budget spent on social media	N	n	%
0-20%	138	104	75.4
21-40%	138	26	18.8
41-60%	138	5	3.6
61-80%	138	3	2.2
81-100%	138	-	-

Table 5:

*Means (M) and standard deviations (SD) for the importance of usage methods of social media in German B2B companies (all variables)*

Variable in the survey	N	M	SD	Superior usage method
Attracting new talent	138	3.17*	1.04	recruiting tool
Placing job offers	138	3.03	1.12	recruiting tool
Candidates' assessment during recruitment process	138	2.16**	0.91	recruiting tool
Recruiting students and trainees	138	3.1	1.17	recruiting tool
Making your brand more known	138	4.25**	0.86	brand building tool
Increasing the number of people who recognize your brand	138	4.12**	0.92	brand building tool
Being in control over the image of your brand	138	3.92**	1	brand building tool
Generating leads	138	3.36**	1.18	sales support tool
Salespeople using social media themselves as a supportive tool	138	3.28*	1.17	sales support tool
Product presentations and promotions	138	3.56**	1.05	sales support tool
Fact-finding about competitors	138	3.32**	0.97	sales support tool
Building new relationships with stakeholders along the supply chain	138	2.64**	1.11	CRM tool
Fostering existing relationships with stakeholders along the supply chain	138	2.65**	1.03	CRM tool
Improving teamwork with external partners	138	2.5**	0.92	CRM tool
Innovating in collaboration with others	138	2.34**	1.03	innovation management tool
Researching market insights	138	3.12	0.98	innovation management tool
Sharing technical issues about products with external experts/partners	138	2.04**	0.84	innovation management tool
Spreading information	138	4.07**	1.13	knowledge management tool
Sharing knowledge	138	2.51**	0.95	knowledge management tool
Collecting new knowledge	138	2.87	1.09	knowledge management tool

*Scale values: 1 (not important at all) to 5 (very important);*

*\*p < 0.05, \*\*p < 0.01 (Test value M = 3.0)*

Table 6:

*Means (M) and standard deviations (SD) for the importance of usage methods of social media in German B2B companies (computed results)*

Importance of usage method	N	M	SD
Recruiting tool	4	2.87	0.47
Brand building tool	3	4.1**	0.17
Sales support tool	4	3.38**	0.12
CRM tool	3	2.6**	0.08
Innovation management tool	3	2.5**	0.56
Knowledge management tool	3	3.15	0.82

*Scale values: 1 (not important at all) to 5 (very important; \*p < 0.05, \*\*p < 0.01 (Test value M = 3.0)*

Table 7:

*Importance of a specific call-to-action in social media posts of German B2B companies*

Relevance	N	n	%
Not important at all	138	7	5.1
Slightly important	138	21	15.1
Important	138	35	25.4
Fairly important	138	40	29
Very important	138	35	25.4

*Scale values: 1 (not important at all) to 5 (very important)*

Table 8:

*Means and standard deviations for 'effects of social media' in German B2B companies (all variables)*

Variable in the survey (KPI)	N	M	SD	Associated effect
Number of applicants	75	1.79**	0.64	employer branding
Number of social mentions	108	1.31**	0.51	brand advocacy
Number of customer complaints	62	2.26**	0.63	customer satisfaction
Number of repeat purchasers	80	1.65**	0.66	customer loyalty
Number of external comments on social media posts	114	1.34**	0.56	conversations with customers
Number of people from outside the company that were included in the innovation process	66	1.8**	0.61	open innovation
Number of inquiries to place employees as conference speaker	102	1.67**	0.68	thought leadership

*Scale values: 1 = more than before; 2 = same as before; 3 = less than before; \*p < 0.05, \*\*p < 0.01*

Table 9:

*Multiple linear regression statistics for H7 to H13*

Item	value (H7)	value (H8)	value (H9)	value (H10)	value (H11)	value (H12)	value (H13)
R <sup>2</sup>	.064	.096	.221	.055	.086	.082	.022
R <sup>2</sup> adjusted	.011	.069	.156	.005	.061	.037	.007
Standard error of the estimate	.6394	.4872	.5748	.6563	.544	.6017	.6823
F (ANOVA)	1.204	3.664	3.816	1.099	3.439	1.838	.751
p (ANOVA)	.317	.015*	.008**	.364	.019*	.149	.524
df regression (ANOVA)	4	3	4	4	3	3	3
df residual (ANOVA)	70	104	57	75	110	62	98
p (making brand more known)		.082					
p (people who recognize brand)		.454					
p (control over image of brand)		.217					
p (generating leads)			.617				
p (sales people using SM themselves)			.869				
p (product presentations/promotions)			.004**				
p (fact-finding about competitors)			.004**				
p (building new relationships with stakeholders )					.706		
p (fostering existing relationships with stakeholders)					.071		
p (improving teamwork with existing partners)					.363		

*p < 0.05, \*\*p < 0.01*

Table 10: Independent Group T-Test between smaller and larger German B2B companies for 'general importance of social media'

Variable	Sample group	N	M	SD	t-test
General importance of social media	smaller German B2B companies	68	3.78	0.97	-.4
General importance of social media	larger German B2B companies	70	3.84	0.87	

Scale values: 1 (not important at all) to 5 (very important);  $p = \text{n.s.}$   $N = 138$

## Conclusions

The aim of this study was to find out how German B2B companies use social media, which effects they achieve with it, and how these effects are related to the usage of social media. Theoretical findings showed that social media can be used by B2B companies for recruiting (Andersson & Wikström, 2017), brand building (Fensel et al., 2012) (Töllinen, Järvinen, & Karjaluoto, 2012), sales support (Karjaluoto, Mustonen, & Ulkuniemi, 2015), customer relationship management (Chae et al., 2020), innovation management (Kärkkäinen et al., 2013), and knowledge management (Ammirato et al., 2019). It was also pointed out that social media usage has effects on B2B businesses and can even influence stock performance (C. Liu, Zhou, Zhan, Sun, & Zhang, 2020). Theoretical findings showed different effects that could be caused by social media usage, these being employer branding (Sivertzen et al., 2013), (Kumar & Möller, 2018), brand advocacy (McShane et al., 2019), customer satisfaction (Agnihotri et al., 2016), (Dwivedi et al., 2019), customer loyalty (Zhang & Li, 2019), conversations with customers (Bernard, 2016), (Chuang, 2020), open innovation (Lashgari et al., 2018), and thought leadership (Magno & Cassia, 2019).

Only one of all the previous studies addressing this topic was carried out in Germany. To find out whether these theoretical findings also apply to German B2B companies, a quantitative survey was designed and distributed to the target group. One of the limitations of this study is that the questionnaire did not ask about the frequency, but solely the importance of social media usage in German B2B companies. Thus, it could not be ascertained for sure whether organizations use social media in a certain way if they rate this particular usage method as important. This could only be assumed.

Another limitation of this study stems from the timing of this study during the corona pandemic.

Specific KPIs were designed to operationalize the effects of social media usage within the questionnaire and participants were asked to rate whether these KPIs had been increasing, decreasing or remained constant in 2019 compared to the years before. It would have been much easier for participants to recall the change between these KPIs in 2020 compared to the years before. But this option was not chosen, as the circumstances of the corona pandemic would have skewed the results.

Furthermore, the sample size for the regression analyses differed for each of the researched effects and was quite small for some of them because participants could choose a 'not known' option for the related questions and these answers had to be removed from the regression analyses. Hence, the results of the regression analyses are not as significant as the other results of this study, as they are based on a smaller sample size, constituting a further limitation.

A final limitation is related to the drawing of the sample. On the one hand, this was performed randomly, as the author asked people from her personal network to answer the survey. On the other hand, participants were not asked how often they deal with social media in their daily work, and hence the sample is not very homogeneous, as people working in various jobs within the marketing and communications department are included.

Nevertheless, the empirical study revealed interesting results. More than three quarters of all the questioned German B2B firms have developed a specific social media strategy, and even more (91.3 %) at least plan to use social media in future. However, organizations are not willing to pay a lot for social media marketing, as three quarters of the questioned German B2B companies only spend 0-20 % of their marketing-budget on social media. Furthermore, 80 % of participants want to generally reach a specific effect using social media.



Looking in greater detail, the results of the first part of this study about usage of social media in German B2B firms are not always in line with the previous studies carried out in other countries, although mostly. This leads to the conclusion that social media usage in B2B companies develops over time and is not the same in every country.

It has been found that it is considered important for German B2B companies to use social media as a brand building tool, as already cited as a key objective in previous studies some years ago (Fensel et al., 2012), (Töllinen et al., 2012). The same applies for social media usage as a sales support tool. This is seen as relevant for German B2B companies and was also considered important by other scientists before (J. J. Jussila et al., 2014), (Karjaluo et al., 2015).

However, this study also found that German B2B companies do not consider it important to use social media as a customer relationship management or innovation management tool. It could not be statistically supported that companies use social media as a recruiting tool. This differs from the results of a study showing that most Finnish B2B companies use social media for recruitment purposes (J. J. Jussila et al., 2014) and those of a more recent study carried out in Asia (Hosain & Liu, 2020). However, it does correspond with other previous studies stating that social media are not used as a CRM tool in B2B (Rathore et al., 2016), as B2B buyers do not want to share purchasing-related information (Aneesh et al., 2020). Last, but not least, previous researchers could not agree whether social media is used for sharing knowledge (J. Jussila et al., 2011), (Pettersson et al., 2014) or not (Ammirato et al., 2019).

The results of the second part of this study reveal the effects of social media in German B2B companies and discern whether or not they are caused by specific usage methods of social media. These results cannot be discussed in relation to previous findings as this cause-and-effect relationship has not been researched before. Therefore, this definitely adds new knowledge to the scientific world. The results show that the usage of social media as a brand building tool in German B2B companies leads to brand advocacy, that the usage of social media as a sales support tool in German B2B companies leads to customer satisfaction, and that the usage of social media as a customer relationship management tool within German B2B

companies leads to more conversations with customers. Although the underlying multiple linear regression analysis has some limitations, as already discussed, all three results seem reasonable. This is the case as social media in general enable conversations between companies and customers (Lindenblatt, 2014) which, in turn enable organizations to foster relationships with their customers (Kaplan & Haenlein, 2011). And all of these three effects are based on a good connection between customer and company.

Other findings of this study are that it cannot be proved within German B2B companies that the effect of employer branding is caused by social media usage as a recruiting tool and that the effect of open innovation is caused by social media usage as an innovation management tool. This is not surprising, considering that German B2B companies don't consider it important within this study to use social media for these purposes. It is more surprising, on the other hand, that it cannot be proved either within German B2B companies that the effect of customer loyalty is caused by social media usage as a sales support tool and that the effect of thought leadership is caused by social media usage as a knowledge management tool. Both of these usage methods are rated as relevant by German B2B companies within this study. Therefore, further research could be conducted in this regard to find out why these relevant usage methods do not create a specific effect.

This study also found that smaller and larger German B2B companies attach equal importance to using social media in general. This directly contradicts a previous study from Finland (Töllinen et al., 2012). Hence, this could also present an opportunity for further, more detailed research into whether smaller and larger organizations really have different approaches to social media usage and, if so, how they differ.

Generally speaking, this study is an initial starting point for investigating how German B2B companies use social media and the effects that can be achieved. Further studies could also examine each of the usage methods in detail to illuminate the as yet dark area of social media within B2B. It could also be an interesting undertaking to examine whether different industries within B2B have different approaches in terms of the usage and effects of social media.

### About the authors

Susanne Nördinger already preferred to play with building blocks rather than dolls as a young child, constructing her first cardboard machine at the age of five. Later, she decided to become an engineer and studied 'food technology' at the Technical University of Munich. After gaining her bachelor's degree, she started her career as a journalist, working for various technical newspapers and websites in different positions covering robotics and automation for many years.

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