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**COVID-19 Contextual
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Employees' Internal Social
Media Usage Intention**

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ABSTRACT

Due to the restrictions resulting from the COVID-19 pandemic, organizations had to quickly adapt business processes to allow employees to work remotely, opening a potential 'window of opportunity' for the usage of Internal Social Media (i.e., any secured interactive communication tool located behind an organization's firewall) in organizations. Past research has mainly focused on the benefits of Internal Social Media; however, our study looks at motivating and hindering factors influencing employees' intention to use internal social media both before and during the COVID-19 pandemic. The Decomposed Theory of Planned Behavior was used as a theoretical base and includes variables that focus on employees' attitudes, perceived social norms, and perceived behavioral controls that influence usage intention. In a second step, we extended the theory to include COVID-19 contextual conditions including employees' attitudes on how Internal Social Media has helped them overcome restrictions due to the COVID-19 pandemic. Data was gathered from four German organizations at two different time points using an online survey that was distributed within each organization. Results show that COVID-19 contextual conditions had a positive effect on and partly explained employees' intention to use Internal Social Media; however, employees' usage intention is more complex and cannot be explained by COVID-19 contextual conditions alone. Our results showed that employees' perceived usefulness, perceived peer usage behavior, and perceived usage ability of Internal Social Media positively influence employees' intention to use Internal Social Media. Surprisingly, our results also showed that employees' perceived superior usage behavior negatively impacted employees' intention to use Internal Social Media.

KEYWORDS

Internal Social Media, COVID-19, Corona Pandemic, Internal Organizational Communication, Decomposed Theory of Planned Behavior

INTRODUCTION

The COVID-19 pandemic took the world by surprise at the beginning of 2020. Societies across the globe went into lockdowns. Country borders were closed for travel. Shops, companies, schools, and public facilities closed their doors to the public. All of a sudden, people were faced not only with uncertainties about the situation but also with challenges on how to proceed with daily activities. Organizations were forced to quickly react to the situation by allowing, when possible, employees to work from home. Face-to-face meetings or business trips to meet with other business locations and partners were no longer possible. In order to continue with daily operations, organizations had to quickly substitute these in-person interactions with digital possibilities (Iansiti & Richards, 2020). Even though digital transformation and digitization has been a top concern of companies worldwide (Mugge, Abbu, Michaelis, Kwiatkowski, & Gudergan, 2020), digitization has also faced challenges over the years since digital technologies are highly volatile, uncertain, complex, and ambiguous (Urbach & Röglinger, 2019). Therefore, many organizations have had difficulties adequately implementing and advancing digitization (Volkwein, Böhm, & Bauernhansl, 2018). However, due to the external conditions resulting from the COVID-19 pandemic where many employees have to work from home, it can be expected that employees will intend to use more digital tools to complete their daily work activities and possibly that the organization, as a whole, will experience a new digital push.

Such digital tools have been given various definitions and use various terminology throughout the literature. For example, these tools and technologies have been referred to as Internal Social Media, Enterprise Social Media,

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Enterprise2.0, Intranet2.0, and Social Intranet, among others (Hamadani Janes, Patrick, & Dotsika, 2014; Holtzblatt, Drury, Weiss, Damianos, & Cuomo, 2013; Leonardi, 2014, 2015; Leonardi, Huysman, & Steinfield, 2013; Riedl & Betz, 2012; Williams, Hausmann, Hardy, & Schubert, 2013, Werling, 2020). In this paper, we use the terminology Internal Social Media (ISM) and define it as any interactive communication platform or tool used for exchanging information that is located behind an organization's firewall within a secured network (Werling, 2020). The research aim of this paper is to analyze employees' intention to use ISM technologies during the COVID-19 pandemic crisis. We look at how the usage of ISM has changed during the COVID-19 pandemic and what role the typical influencing factors for explaining employees' intention to use ISM during the pandemic play.

Previous research on ISM technologies has predominantly focused on the added value and benefits of ISM for organizations (Ewing, Men, & O'Neil, 2019; Jallow, Demian, Anumba, & Baldwin, 2017; Khalili, Abbadi, & Ismail, 2019; Khatri, 2019; Leidner, Gonzalez, & Koch, 2018; Madsen Vibeke, 2018). For example, studies have shown that the ease and speed of communication within organizations can be improved through the use of ISM technologies (Khalili et al., 2019; Madsen Vibeke, 2018). Furthermore, studies have also shown that the use of ISM technologies supports employees in becoming more agile within the organization by improving transparency, engagement, collaboration, innovation, and knowledge management (Cai, Huang, Liu, & Wang, 2018; Haddud, Dugger, & Gill, 2016; Holtzblatt et al., 2013; Kamau, Mbogo, & Chege, 2019; Men, O'Neil, & Ewing, 2020; Meske, Wilms, & Stieglitz, 2019; Qi & Chau, 2018; Shaarawy & Abdelghaffar, 2017; Tierney & Drury, 2013). Although the benefits and added value of ISM technologies have been shown, the usage of ISM technologies is often voluntary in organizations. Thus, not only do organizations have employees that are either users or non-users of ISM technologies but also the motivation to use ISM technologies differ. Taking the current COVID-19 pandemic situation into consideration, we assume that the motivation and intention to use ISM technologies have increased in general, not only for users but also for non-users. However, employees' intention to use ISM technologies is complex and cannot be explained by conditions resulting from the COVID-19 pandemic alone but that these conditions stand in the context of influencing factors for ISM usage intention. This influence of the resulting conditions from the COVID-19 pandemic on motivating and hindering factors for employees' usage intention (i.e., attitudes, perceived social norms, and perceived usage ability) of ISM will be discussed in this paper.

Theories that have often been used in identify factors that can either promote or hinder employees' intention to use various technologies are the Technology Acceptance Model (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989) and the Decomposed Theory of Planned Behavior (Taylor & Todd, 1995; Venkatesh, Morris, Davis, & Davis, 2003), which were both derived from the well-established Theory of Planned Behavior (Ajzen, 1991). As the Decomposed Theory of Planned Behavior takes not only attitudes (i.e., perceived usefulness, perceived ease of use, and perceived compatibility) but also social norms and usage ability as influencing factors for technology usage intention into consideration, our paper uses this theory as its theoretical base.

In the next sections, our paper will first discuss the determinants of employees' intention to use ISM technologies in more depth based on the Decomposed Theory of Planned Behavior (i.e., attitudes, perceived social norms, and perceived usage ability) as well as COVID-19 Contextual Conditions. After which, we address our selected method, describe our sample, and present the measures used in our study. Our paper continues, by presenting the results of our study. After which, we conclude by discussing theoretical implications and directions for future research, practical implications, and recommendations for organizations, as well as our study's limitations.

Determinants of employees' Intention to Use ISM

As previously mentioned, this paper uses the Decomposed Theory of Planned Behavior (DTPB) to identify motivating and hindering factors for employees' intention to use ISM technologies. The DTPB was developed to more specifically identify how the Theory of Planned Behavior can predict the specific behavior of usage and usage intention for technology (Taylor & Todd, 1995). The DTPB attempts to predict usage and intention to use technologies by decomposing attitudes, social norms, and behavioral controls with the fundamental concept of technology adoption in organizations (Taylor & Todd, 1995; Venkatesh et al., 2003). Figure 1 shows the DTPB in the context of identifying influencing factors for ISM usage intention.

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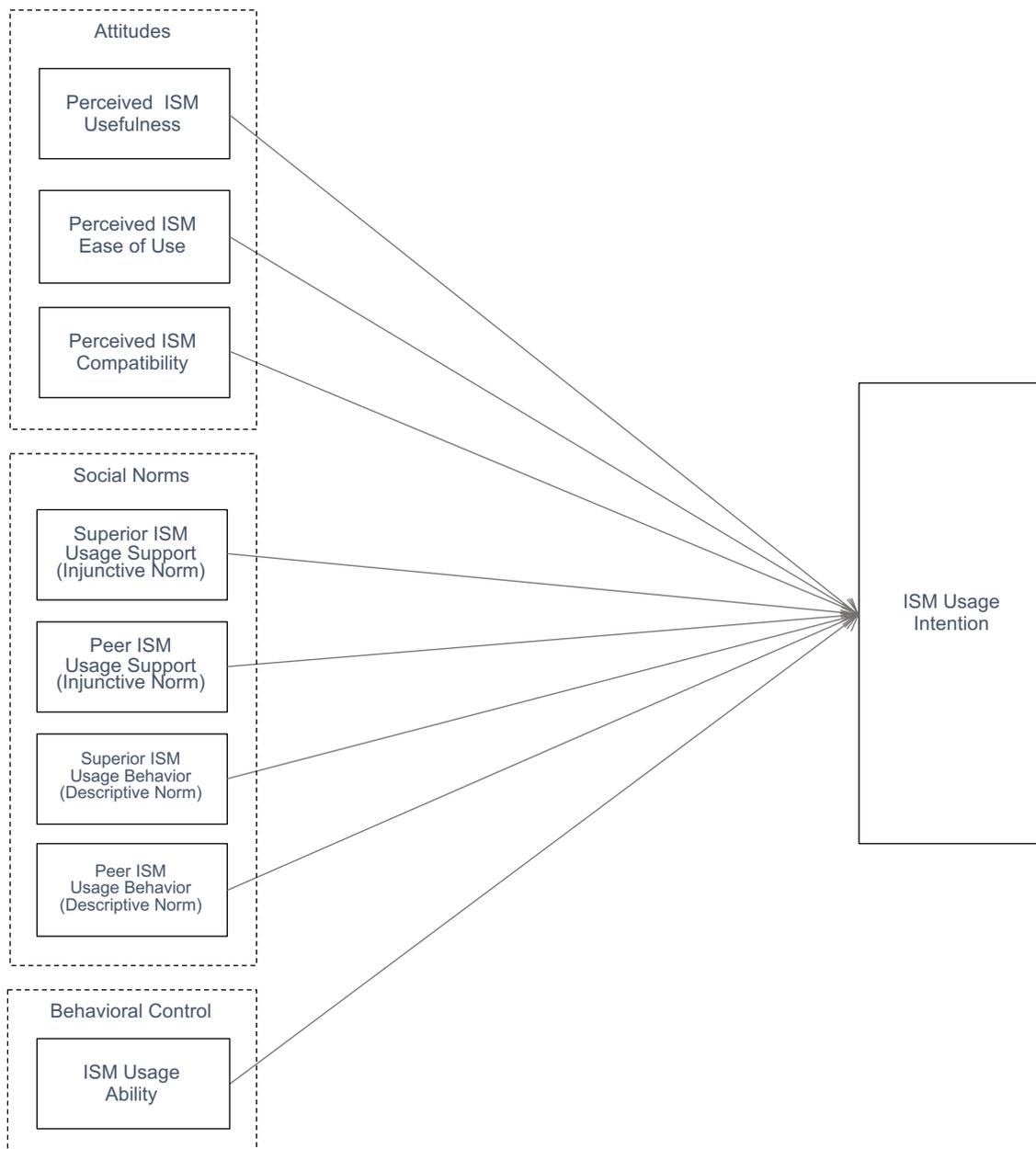


Figure 1. Model 1: Adapted DTPB theoretical model based on Taylor and Todd, 1995

Furthermore, as many governments introduced lockdowns, placed restrictions on the number of persons that one could meet, and closed national borders due to the COVID-19 pandemic, organizations around the globe were forced to change their operation processes ‘overnight.’ These government restrictions forced organizations to allow their employees to work from home in the best case, or to temporarily close in the worst case. Organizations that were able to have their employees work from home needed to quickly find alternative ways for their employees to conduct everyday business remotely (Iansiti & Richards, 2020). Thus, not only private organizations but also public

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organizations (i.e., schools and government offices) were forced to rely on virtual tools, such as ISM technologies, to assist in communication and work processes. Therefore, we have expanded the DTPB to include COVID-19 contextual conditions encompassing both the perceived degree to which employees felt that the government's restrictions presented them with challenges that made their individual work processes more difficult and if employees felt that ISM technologies helped them in dealing with these resulting challenges. Figure 2 below shows our extended model including the DTPB constructs as well as the additional COVID-19 Contextual Conditions construct. This section continues by explaining, in more depth, our dependent variable – intention to use ISM – and our independent variables – acceptance of ISM, social norms regarding ISM, ISM Usage Ability (i.e., behavioral control factors), and COVID-19 Contextual Conditions.

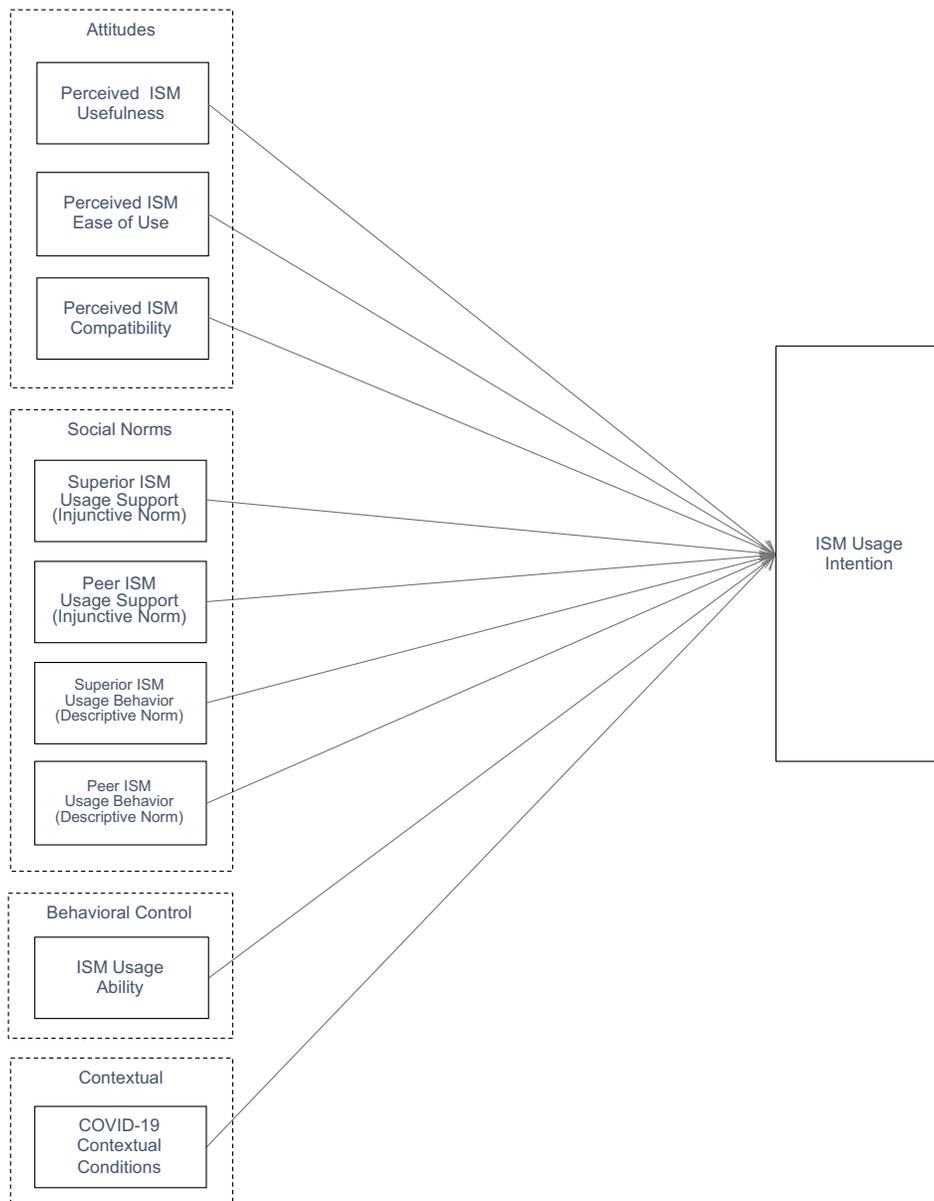


Figure 2. Model 2: Extended DTPB theoretical model including COVID-19 contextual conditions *ISM usage intention*

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According to Ajzen (1991), behavioral intentions are the main predictor for actual behavior. This claim has been supported by many studies in various disciplines (Carfora et al., 2019; Cooke, Dahdah, Norman, & French, 2016; Hamilton, van Dongen, & Hagger, 2020; Scalco, Noventa, Sartori, & Ceschi, 2017; Yadav & Pathak, 2017). When specifically looking at employee behavior, several studies concerning knowledge sharing were able to show that the more likely employees intended to share their knowledge the more likely employees actually shared their knowledge with other employees in their organization (Hau, Kim, & Lee, 2016; Kaffashan Kakhki, Hadadian, Namdar Joyame, & Malakooti Asl, 2019; Reyhav & Weisberg, 2010). Although predicting actual behavior is an important outcome, many researchers are limited to using behavioral intentions as their main outcome since measuring and observing actual behavior in organizations is problematic and researchers must gain permission from the organization to do this (Lebek, Uffen, Neumann, Hohler, & Breitner, 2014). Due to this and in line with other technology and media research, our study's dependent variable is the intention to use ISM (Taylor & Todd, 1995; Venkatesh et al., 2003).

Attitude towards behavior

The first and most predominant influencing factor in predicting behavioral intentions is one's attitude towards a behavior (Ajzen, 1991; Robbins & Judge, 2018). In technology and media research, one's attitude towards the usage of a specific technology or media is measured by one's acceptance of the technology or media (Schneider, Aehling, Maier, & Bacherle, 2010; Taylor & Todd, 1995; Venkatesh et al., 2003). According to the DTPB and other research in technology adoption, acceptance encompasses one's perceived usefulness, ease of use, and compatibility of a specific technology or media (Davis, 1989; Taylor & Todd, 1995; Venkatesh et al., 2003). Hence, the higher employees' perception of how useful ISM technologies are for their jobs, how easy it is for them to use ISM technologies, and how compatible ISM technologies are with the organization's work processes, the more likely employees will intend to use ISM technologies. This leads us to our first hypothesis:

H1: The higher the perceived (a) usefulness of ISM, (b) ease of use of ISM, and (c) compatibility of ISM, the higher the intention to use ISM will be.

Social norms regarding behavior

The second influencing factor in predicting behavioral intentions is social norms (Ajzen, 1991). Social norms are the perceived social pressures from others that are important to the individual and can be looked at from two different dimensions – injunctive and descriptive norms (Cialdini, Reno, & Kallgren, 1990; Jacobson, Mortensen, & Cialdini, 2011). These different dimensions are based on different sources of motivation. On the one hand, injunctive norms look at an individual's perception of how others think he/she should behave (Cialdini et al., 1990). Therefore, when the individual believes he/she should comply with these norms, he/she is seeking social approval (Jacobson et al., 2011). Thus, and in terms of ISM technologies, injunctive social norms are considered to be an individual's perception of the support or expectation from others that the individual uses ISM technologies. On the other hand, descriptive norms look at an individual's perception of how others actually behave: i.e., how an individual interprets how other people behave (Cialdini et al., 1990). Hence, when the individual complies with these norms and what they believe others are doing, the individual behaves in a manner that they consider as being usual with the hopes of behaving appropriately (Jacobson et al., 2011). Thus, and in terms of ISM technologies, descriptive social norms are considered to be an individual's perception of the usage of ISM technologies by others in the organization. It would seem that these norms go hand in hand – we do what is socially acceptable or what is normally done is socially acceptable. However, they can conflict with each other, leading to negative outcomes (Bute & Jensen, 2010; Cialdini, Kallgren, & Reno, 1991; Cialdini et al., 1990; Jacobson et al., 2011), making it important to separate the two.

As previously mentioned, social norms are an individual's perceived pressures from important others. In an organizational context, important others for an individual would be the individual's superiors (i.e., direct supervisors and upper management) and peers (i.e., direct colleagues and other employees) (Kandlousi, Ali, & Abdollahi, 2010; Karanges, Johnston, Beatson, & Lings, 2015; Neves & Eisenberger, 2012; van Vuuren, de Jong, & Seydel, 2007). Therefore, social norms should be as well considered for both superiors and peers leading us to our second hypothesis:

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H2: The higher the (a) superiors' perceived usage support (superior injunctive norm) of ISM, (b) peers' perceived usage support (peer injunctive norm) of ISM, (c) superiors' perceived usage behavior (superior descriptive norm) of ISM, and (d) peers' perceived usage behavior (peer descriptive norm) of ISM, the higher the intention to use ISM will be.

Perceived behavioral controls regarding usage ability

The third influencing factor in predicting behavioral intentions is perceived behavioral controls (Ajzen, 1991). Perceived behavioral controls are an individual's perceived ability to perform a behavior and take into consideration factors that could hinder one from performing a certain behavior (Ajzen, 1991). In technology research, both internal and external hindering factors are taken into consideration. Internal hindering factors look at an individual's perception of their self-efficacy, such as their ability to use technology independently (Taylor & Todd, 1995). External hindering factors look at an individual's perception that they have all of the facilitating resources to use a technology (i.e., technical resources and training). Behavioral controls are considered to be most important if they are found to be absent. Even if an individual feels confident in using the technology and they have all the resources to use the technology, that does not mean that the individual will actually use the technology; however, if even one element is seen as being absent, the individual faces a barrier that hinders he/she from actually using the technology (Taylor & Todd, 1995). This leads us to our third hypothesis:

H3: The higher the perceived ISM usage ability, the higher the intention to use ISM will be.

Perceived behavioral controls regarding COVID-19 contextual conditions

Furthermore, as the COVID-19 pandemic and the restrictions that governments have placed on societies have caused an immediate and spontaneous need to change the way organizations operate, these contextual conditions must be taken into consideration regarding motivating and hindering factors for ISM usage intention. Previous research in technology adoption has shown that situational conditions are an important factor for usage intention (Baker & Moore, 2011; Workman, 2014). Also, research in internal organizational communication has shown that the contextual conditions in which employees work and have no control over have a significant influence on employees' intention to use internal communication media (Werling, Barkela, & Fiedler, 2019). Regardless of employees' attitudes, perceived social norm pressures, or employees' perceived ability to use ISM independently, external factors which employees have no control over can impact their intention to use ISM technologies. During the COVID-19 pandemic, employees may find themselves in a situation where they feel they have no other option but to use ISM to complete their work tasks because of the COVID-19 pandemic restrictions. Thus, we expect that the more employees perceive that ISM enables them to continue their tasks, despite the COVID-19 restrictions (i.e., COVID-19 contextual conditions), the more likely employees will intend to use ISM technologies, leading us to the following hypothesis:

H4: The higher the perceived COVID-19 contextual conditions, the higher the intention to use ISM will be.

Not only can the COVID-19 contextual conditions influence employees' usage intention directly, but they can also have an impact on the above-mentioned primary factors (i.e., attitudes, perceived social norms, and perceived behavioral controls). Due to the external COVID-19 conditions related to government restrictions regarding contact with other persons, organizations and their employees have been forced to use or more often use ISM technologies. Employees' usage of ISM technologies brings about more experience with ISM technologies. The more experience employees have with ISM technologies, the more likely they will see the benefits of ISM technologies and find ISM compatible with their work-related tasks and easy to use independently. Thereby, employees' attitudes towards the usage of and ability to use ISM technologies will increase and become more positive. Furthermore, as many organizations have no other option but to use ISM, management urges employees to use ISM technologies to help in completing their daily work-related tasks. Moreover, employees at the same level might see no other option to coordinate tasks with their colleagues and ask that they use ISM technologies to help in this coordination. When employees are left with no other choice but to use ISM technologies, they will of course feel these effects from various important social groups within the organization. This has been shown in previous research where the level of experience and voluntariness of technology usage has been observed to have a significant positive effect on attitudes, social norms, and usage ability regarding the intention to use technology adoption in organizations (Venkatesh & Davis, 2000; Venkatesh et al., 2003; Workman, 2014). Thus, we expect that COVID-19 contextual conditions will

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have a positive impact on employees' attitudes towards ISM, employees' perceived social norms regarding ISM usage, and employees' perceived usage ability of ISM, leading us to the research questions:

RQ1: How do COVID-19 contextual conditions influence employees' intention to use ISM?

RQ2: What is the relationship between COVID-19 contextual conditions, attitudes towards ISM, employees' perceived social norms regarding ISM usage, and employees' perceived usage ability of ISM and ISM usage?

METHOD

We aimed to conduct a longitudinal study with organizations that had previously participated in a study together with us which looked at motivating and hindering factors for the intention to use ISM technologies. However, due to data protection regulations, it was not possible to correctly associate participants from before the COVID-19 pandemic with participants during the COVID-19 pandemic. Nevertheless, as the organizations are the same, a comparison at the organizational level was made followed by cross-sectional analysis of the data. The first time point (T1) was conducted in different phases between September 2016 and May 2019, and the second (T2) between July and August 2020. Four organizations in Germany participated in both time points and had all previously implemented ISM technologies. The organizations were from different industries (i.e., retail, consulting, and engineering) and varied in size from 300 to more than 21,000 employees. Employees that were eligible to participate had to have access to the ISM technologies. Furthermore, as this study looks at influencing factors for employees' intention to use ISM technologies, only employees having a function lower than middle management were eligible to participate. The survey took place as an online survey where each organization's contact person forwarded an email explaining the study with the survey link to employees that met the study's criteria. In the email, employees were guaranteed confidentiality and anonymity as results would only be reported aggregately.

Sample

Before we conducted our analysis, data quality was thoroughly checked. First, questionnaires that were not completely filled out were removed. Second, an attention check in the form of an item was used: "If I am reading this question carefully, I will check 'does not apply at all' here." All participants that did not check 'does not apply' were removed. Third, we used a self-reported "use-me" question at the end of the questionnaire: "Finally, we would like to point out that it is essential for our research to evaluate only responses from people who have given the study their full attention and have honestly answered all questions. Should we use your data from the survey?" All participants that selected "no" were removed from the analysis. Finally, participants that used straight-lining were also removed. After the data was cleaned, a total of 233 participants for T1 and 140 participants for T2 remained for analysis.

The sample consisted of 86% full-time employees at T1 and 90% full-time employees at T2. The majority of participants had worked at the company for at least 3 years in their organization with 63% working 3 years or longer at T1 and 72% at T2. Of the 233 participants at T1, 73% were male and 27% were female. Of the 140 participants at T2, 65% were male and 35% were female. The median age of participants in the sample was 35.22 (sd: 9.17) years at T1 and 37.75 (sd=10.24) years at T2.

Measures

All of the following constructs (see Appendix for a complete list of construct items) used a 5-point Likert-type response scale. Responses ranged from 1 "does not apply at all" to 5 "fully applies." The dependent variable, *intention to use ISM technologies*, was measured using four items which were adapted from the DTPB (Taylor & Todd, 1995) ($\alpha=.94$, $m=4.08$, $sd=1.09$, $n=373$). Items entailed questions about participants' ISM usage intention in general, and participants' intention to use ISM with other employees for communication and collaboration.

The scales were mean-centered, and a two-tailed test was used to ensure the significance of the standardized coefficients for main effects. For our analysis, we first compared mean values between the samples and time points. We then used hierarchical multiple regression analyses to identify influencing factors for employees' ISM usage intention based on the original DTPB model and add COVID-19 contextual conditions to identify if these special contextual conditions had greater influence and explanatory power than the original factors from the DTPB.

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The first aspect of influencing factors for the intention to use ISM technologies based on the DTPB is *attitudes towards ISM technologies*. Based on the DTPB, attitudes were measured through the constructs: perceived usefulness, perceived ease of use, and the perceived compatibility of ISM technologies that were adapted for purposes of this study (Taylor & Todd, 1995). Perceived usefulness was measured using three items ($\alpha=.93$, $m=4.02$, $sd=1.04$, $n=373$) that asked participants' opinions of ISM technologies. The perceived ease of use was measured using two items ($\alpha=.90$, $m=4.04$, $sd=.94$, $n=373$) that asked participants how easy it is for them to use ISM technologies. The perceived compatibility was measured using three items that asked participants how ISM technologies would fit with their job. The item "The usage of internal social media is/would be possible in areas of my work" was removed to improve internal consistency, leaving two items for measurement ($\alpha=.91$, $m=3.77$, $sd=1.08$, $n=373$).

The second aspect of influencing factors for the intention to use ISM technologies based on the DTPB is *social norms regarding ISM technology usage*. Measures for social norms for this study were adapted from a previous study using the TPB and look at social norms from an injunctive and descriptive norms perspective (Park & Smith, 2007). As our study also takes the two most influential groups – superiors and peers – into consideration, both injunctive and descriptive norms for superiors and peers were measured. Perceived superior usage support was measured with four items ($\alpha=.74$, $m=3.79$, $sd=.79$, $n=373$) that asked participants' opinion how upper management and their direct supervisor view ISM technologies. Perceived peer usage support was measured with four items ($\alpha=.80$, $m=3.69$, $sd=.81$, $n=373$) that asked participants' opinion how direct colleagues and other employees in the organization view ISM technologies. Perceived superior usage behavior was measured with four items ($\alpha=.74$, $m=3.48$, $sd=.97$, $n=373$) that asked participants their opinion of how upper management and their direct supervisors use ISM technologies in the organization. Perceived peer usage behavior was measured with four items ($\alpha=.78$, $m=3.81$, $sd=.90$, $n=373$) that asked participants their opinion of how their direct colleagues and other employees use ISM technologies in the organization.

The third aspect of influencing factors for the intention to use ISM technologies based on the DTPB is *behavioral control factors regarding ISM technology usage*. Based on the DTPB, behavioral control factors were measured using five items that were adapted for purposes of this study (Taylor & Todd, 1995). Items asked questions regarding internal control factors (i.e., self-efficacy) and external control factors (i.e., facilitating resources). The items "I have basic knowledge in using internal social media" and "I received/would receive adequate support through training to use internal social media" were removed to improve internal consistency, leaving three items for measurement ($\alpha=.75$, $m=4.28$, $sd=.75$, $n=373$).

In addition to the three influencing aspects for the intention to use ISM technologies based on the DTPB, we added the construct *COVID-19 contextual conditions* to our analysis. Nine were developed to measure COVID-19 Contextual Conditions. These items asked participants questions on how COVID-19 restrictions in place from the government affected their jobs and company as well as if participants perceived internal social media as helpful in their everyday work processes during these restrictions. The items "The corona restrictions have made my work processes more difficult," "Because of the corona restrictions, I have had to use alternatives for my usual work processes," and "The corona restrictions mean a digitalization boost for our company" were removed to improve internal consistency, leaving six items for measurement ($\alpha=.91$, $m=4.01$, $sd=1.07$, $n = 144$).

RESULTS

First, we will take a look at a mean comparison of the relevant variables between the samples from T1 (*before* the COVID-19 pandemic) and T2 (*during* the COVID-19 pandemic). After which, regression analyses at T1 and T2 with model 1 (adapted DTPB) and at T2 with model 2 (adapted DTPB including COVID-19 Contextual Conditions) will be presented.

Mean comparison of ISM influencing factors before and during COVID-19

Although it was not possible to present a longitudinal study, we still felt that insights on the influencing factors on employees' intention to use ISM technologies before and during the COVID-19 pandemic were important. Thus, we conducted a mean comparison of employees' intention to use ISM and the primary influencing factors (i.e., attitudes,

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perceived social norms, and perceived behavioral controls) at an organizational level (see Table 1) to answer RQ1 and RQ2. In looking at employees' usage intention, we found that employees' usage intention increased between T1 and T2. Thus, and in answering RQ1, our results indicate that COVID-19 contextual conditions have a positive impact on ISM usage intention. Regarding attitudes, the perceived usefulness, perceived ease of use, and perceived compatibility were moderately high before the pandemic at T1 and increased to quite high during the pandemic at T2. Significant differences between T1 and T2 were found especially for the perceived usefulness but also the perceived ease of use and perceived compatibility. Furthermore, perceived peer usage support, superior usage behavior, and peer usage behavior increased during the COVID-19 pandemic. The perceived ISM usage ability decreased between T1 and T2. Thus, and in answering RQ2, our results indicate that COVID-19 contextual conditions have a positive impact on: 1) attitudes towards ISM, 2) employees' perceived social norms – apart from employees' perceived superior support – regarding ISM usage, and 3) employees' perceived usage ability of ISM. It is important to note that we cannot clarify whether these are effects over time, whether there are any interactions (i.e., increased use could also lead to changes in attitudes), and to what extent the effects are directly related to the COVID-19 pandemic. However, this analysis gives us insights into how influencing factors from the DTPB might be affected by COVID-19 contextual conditions.

Table 1. Mean comparison of before (T1) and during (T2) COVID-19 pandemic

	T1 (n=233)		T2 (n=140)		
	m	sd	m	sd	
Usage Intention	3.97	1.11	4.25	1.03	*
Perceived Usefulness	3.89	1.09	4.25	0.92	**
Perceived Ease of Use	3.96	1.00	4.17	0.81	*
Perceived Compatibility	3.63	1.06	4.00	1.06	**
Superior Usage Support	3.75	0.76	3.86	0.84	
Peer Usage Support	3.58	0.79	3.87	0.81	***
Superior Usage Behavior	3.31	0.94	3.76	0.94	***
Peer Usage Behavior	3.68	0.90	4.02	0.87	***
ISM Usage Ability	4.22	0.77	4.39	0.70	*

Note: * $p < .05$ ** $p < .01$, *** $p < .001$

Regressions on cross-sectional data

In the regression analyses for T1 and T2, we look at the DTPB influencing factors on employees' intention to use ISM (Model 1). As shown in Table 2, results regarding attitudes show that increased perceived usefulness of ISM increase employees' intention to use ISM technologies at both timepoints (T1: $\beta = .39$, $p < .001$, T2: $\beta = .55$, $p < .001$), thereby showing support for hypothesis *H1a*. Furthermore, the difference in regression coefficients between T1 and T2 is statistically significant ($\Delta\beta = -.15$, $p = .036$). Results concerning further attitudes showed that the perceived ease of use of ISM technologies did not significantly influence (T1: $\beta = -.01$, $p = .927$; T2: $\beta = -.04$, $p = .639$; $\Delta\beta = -.03$, $p = .073$) employees' intention to use ISM technologies. Thus, hypothesis *H1b* could not be supported. The Perceived Compatibility is positively and significantly related to employees' intention to use ISM technologies at T1 ($\beta = .19$, $p = .013$) but not at T2 ($\beta = -.04$, $p = .667$; $\Delta\beta = -.23$, $p = .021$). Thus, hypothesis *H1c* could be supported for T1 but not for T2.

Results of the second aspect of the DTPB, perceived social norms, showed that neither the injunctive norms perceived superior usage support (T1: $\beta = .11$, $p = .093$; T2: $\beta = .15$, $p = .108$; $\Delta\beta = .04$, $p = .070$) nor perceived peer usage

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support (T1: $\beta = -.09$, $p = .157$; T2: $\beta = -.11$, $p = .205$; $\Delta\beta = -.02$, $p = .075$) was found to significantly influence employees' ISM usage intention, thus *H2a* and *H2b* could not be supported. When considering the descriptive norms, our results showed that the perceived superior usage behavior was significant—and opposite to our hypothesis—negative (T1: $\beta = -.19$, $p = .004$; T2: $\beta = -.31$, $p = .003$; $\Delta\beta = -.11$, $p = .073$). Thus, *H2c* could not be supported. The perceived peer usage behavior (T1: $\beta = .39$, $p < .001$; T2: $\beta = .49$, $p < .001$; $\Delta\beta = .10$, $p = .070$) was found to have a positive and significant influence on employees' intention to use ISM technologies, thereby supporting *H2d*.

Results of the final aspect of the DTPB, usage ability, showed that ISM usage ability had no significant influence on the intention to use ISM technologies at T1 ($\beta = .01$, $p = .831$) but positive influence at T2 ($\beta = .24$; $p = .001$; $\Delta\beta = .23$, $p = .031$). Thus, *H3* could be supported for T2 but not for T1. Each of the models is, in itself, significant (T1: $R^2_{adj} = .55$, $p < .001$; T2: $R^2_{adj} = .67$, $p < .001$).

Table 2. Regression usage intention T2

	T1		T2			
	Model 1		Model 1		Model 2	
	beta	SE	beta	SE	beta	SE
Perceived Usefulness	0.39 ***	.08	0.55 ***	.10	0.47 ***	.10
Perceived Ease of Use	-0.01	.06	-0.04	.10	0.08	.10
Perceived Compatibility	0.19 *	.08	-0.04	.08	0.05	.08
Superior Usage Support	0.11	.10	0.15	.11	0.21	.11
Peer Usage Support	-0.09	.09	-0.11	.11	0.16	.11
Superior Usage Behavior	-0.19 **	.08	-0.31 **	.11	0.30 **	.11
Peer Usage Behavior	0.39 ***	.08	0.49 ***	.12	0.52 ***	.12
ISM Usage Ability	0.01	.08	0.24 **	.11	0.33 **	.10
Corona Contextual Conditions					0.19 **	.06
R2	0.57 ***		0.69 ***		0.71 ***	
adjR2	0.55		0.67		0.69	
deltaR2					0.02 **	
N	233		140		140	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

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In the second step of the regression analysis, we added COVID-19 contextual conditions to the model (Model 2, see Table 2 for results) to determine if COVID-19 contextual conditions at T2 offered additional explanation power. The extended model including COVID-19 contextual conditions was able to give additional explanation power to our original adapted model (Model 1_{T2}: $R^2_{adj} = .67$, $p < .001$; Model 2: $R^2_{adj} = .69$; $\Delta R^2 = .02$, $p = .002$). Results of the extended model showed that COVID-19 contextual conditions ($\beta = .20$, $p = .002$) had a positive and significant influence on employees' intention to use ISM technologies, thus supporting *H4*. Table 3 gives an overview and summary of whether or not our study showed support for the individual hypotheses.

Table 3. Hypotheses result summary

	T1		T2	
	Supported	Not Supported	Supported	Not Supported
<i>H1a</i> : The higher the perceived usefulness of ISM, the higher the intention to use ISM will be.	✓		✓	
<i>H1b</i> : The higher the perceived ease of use of ISM, the higher the intention to use ISM will be.		✗		✗
<i>H1c</i> : The higher the perceived compatibility of ISM, the higher the intention to use ISM will be.	✓			✗
<i>H2a</i> : The higher the superiors' perceived usage support (superior injunctive norm) of ISM, the higher the intention to use ISM will be.		✗		✗
<i>H2b</i> : The higher the peers' perceived usage support (peer injunctive norm) of ISM, the higher the intention to use ISM will be.		✗		✗
<i>H2c</i> : The higher the superiors' perceived usage behavior (superior descriptive norm) of ISM, the higher the intention to use ISM will be.		✗		✗
<i>H2d</i> : The higher the peers' perceived usage behavior (peer descriptive norm) of ISM, the higher the intention to use ISM will be.	✓		✓	
<i>H3</i> : The higher the perceived ISM usage ability, the higher the intention to use ISM will be.		✗	✓	
<i>H4</i> : The higher the perceived COVID-19 contextual conditions, the higher the intention to use ISM will be.	N/A	N/A	✓	
<i>RQ1</i> : How do COVID-19 contextual conditions influence employees' intention to use ISM?	Employees' intention to use ISM increased.			
<i>RQ2</i> : What is the relationship between COVID-19 contextual conditions, attitudes towards ISM, employees' perceived social norms regarding ISM usage, and employees' perceived usage ability of ISM and ISM usage intention?	Employees' perceived usefulness, ease of use, compatibility, peer usage support, superior usage behavior, and peer usage behavior increased. The perceived ISM usage ability decreased.			

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DISCUSSION

Our results show that COVID-19 contextual conditions (i.e., the degree to which employees perceived that ISM helped them in overcoming the communication barriers they faced due to the COVID-19 restrictions) can explain – at least partially – an increase in employees' intention to use ISM technologies during the COVID-19 pandemic. Nevertheless, the results also show the complexity of influencing factors on ISM usage intention and how COVID-19 contextual conditions stand in the context of these factors. The strongest predictors of employees' intention to use ISM technologies at both time points are the perceived usefulness of ISM and peer usage behavior. The perceived usefulness of ISM even became more important at T2. Although perceived social norms have mixed results in the previous literature, perceived descriptive norms (i.e., perceived superior usage behavior and perceived peer usage behavior) are also relevant factors in influencing employees' intention to use ISM technologies. Surprisingly, and contrary to our assumptions, increased perceived superior usage behavior negatively impacted employees' intention to use ISM. Although the correlation between the two variables is moderately positive ($r = .43, p < .001, n = 373$), keeping all other factors constant in our models, the more employees perceive that their superiors use ISM technologies, they tend to use them less. Tests for multicollinearity showed moderate, but not extreme, variance inflation factors for Model 2 (VIF 1.81 – 4.69). Hence, it is of course possible that this result might be due to multicollinearity; however, it is also possible that – keeping all other factors constant – employees may avoid being constantly available if managers heavily use ISM technologies. In contrast to this, when looking at the perceived peers' usage behavior, we found that peers' usage of ISM technologies had a positive impact on employees' intention to use ISM. The more employees see their peers using ISM technologies, then the more likely they will intend to use ISM technologies themselves. Another surprising result was that the usage ability, which did not have a significant influence on usage intention before the COVID-19 pandemic, had a significant influence on usage intention during the pandemic. This could be due to employees not having someone 'around the corner' to show them how to use something regarding ISM if they have a question.

Our extended model to include COVID-19 contextual conditions elucidates employees' intention to use ISM technologies during this exceptional situation. Although we cannot clearly show causal relations between COVID-19 contextual conditions and increased ISM usage, we do, however, have indications that the COVID-19 contextual conditions offer a window of opportunity for increased usage of ISM. However, it is apparent that other key factors, especially the perceived usefulness and peer usage behavior, continue to be relevant factors and their importance is not reduced by corona conditions but become more apparent. Also, the fact that the perceived usage ability changes to become an influencing factor during the COVID-19 pandemic, as employees no longer had colleagues just around the corner to ask about how to use something regarding ISM, shows the possible effects that the COVID-19 contextual conditions have on factors that were perhaps irrelevant before the pandemic. However, as we mentioned before, we cannot clarify whether these are effects over time, whether there are any interactions (i.e., increased use could also lead to changes in attitudes), and to what extent the effects are directly related to the COVID-19 pandemic.

Theoretical contributions and recommendations

Our study offers theoretical implications which are important for future researchers to take into consideration. The unique theoretical contribution of our study is to integrate specific external contextual conditions (the COVID-19 pandemic) into the DTPB. In expanding the theory, we bring to light the impact that perceived situational circumstances – caused by outside factors – can have on employees' behaviors. From a theoretical perspective, this is important as the DTPB focuses mainly on employees having the facilitating resources (i.e., technical resources and training) and employees' self-efficacy in using the technology in question. Nevertheless, the DTPB lacks a circumstantial perspective that looks at the conditions employees are under when facing the decision to use or not use technology. The inclusion of contextual conditions which can hinder or support employees' usage of technology can affect employees' intention to use that technology. In a previous study that used the Theory of Planned Behavior to predict employees' intention to use internal communication media, contextual conditions were also found to significantly influence employees' intention to use internal communication media (Werling et al., 2019). Thus, future researchers should consider our extension to the DTPB by adding contextual conditions as a possible influencing factor when researching employees' behavioral intentions.

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Practical implications and recommendations for organizations

In addition to theoretical implications, our study also offers practical implications for organizations. The first is the identification of factors that can either promote or hinder employees' intention to use ISM technologies. Firstly, employees' perceived usefulness of ISM technologies is a key influencing factor for employees' intention to use ISM. Organizations should focus their resources on promoting the benefits of using ISM technologies within the organization. This can be done by various means, for example, organizations can offer information sessions and/or training where benefits of using ISM for specific work processes or tasks can be highlighted. Another possibility is that organizations write an article explaining the benefits of ISM which can be distributed to employees. This could be, for example, an article written in an interview format with an employee where the employee discusses the advantages and benefits that ISM technologies have brought them for improving their work processes. Furthermore, descriptive norms (i.e., the perceived superior usage behavior and the perceived peer usage behavior) are also a key influencing factor for employees' intention to use ISM technologies. On the one hand, when employees see and perceive that their supervisors are using ISM technologies, employees may avoid using ISM for fear that they will be seen as being constantly available. Organizations' leaders should keep this in mind to not heavily use ISM technology and only for important purposes. On the other hand, when employees see and perceive that their peers are using ISM technologies, they are more likely to use these technologies themselves as they possibly consider the usage of ISM technologies to be a 'normal' behavior and that they do not wish to be left out. Thus, organizations should also promote how many and how often employees use ISM technologies. This could, for example, be done by an article in the business newsletter which celebrates a certain target number of employees that are now using ISM technologies and encourage employees to be "part of the gang."

A further practical implication of our study is that organizations can see the impact that the COVID-19 pandemic has had on employees' intention to use ISM technologies. Our study shows that it is clear that many employees felt they were only able to complete their work tasks due to using ISM technologies. This study brings to light the importance of organizations offering ISM technologies to employees. Although all of the participating organizations already had some form of ISM implemented within the organization, it is plausible that employees from other organizations that had not previously implemented ISM technologies were forced to seek external alternatives (i.e., WhatsApp, Facebook, etc.) to complete their work tasks. This is a critical point as external alternatives are not behind an organization's firewall, which can lead to data security problems. Depending on the level of sensitivity of employees' work-related activities, this could be detrimental to an organization if third parties have access to sensitive information (Werling, 2020). Thus, organizations should be aware of the consequences that could arise if they do not offer and promote the usage of ISM technologies.

Limitations and recommendations for future research

Although this study offers great insights, it is not without its limitations. Organizations from a previous study before the COVID-19 pandemic were contacted to participate in a second round to take place during the COVID-19 pandemic. Due to data security regulations, it was not possible to include any personal information in the study where the participants could be identified. A self-developed code was used as an ID for participants. A suggestion on how to build the code was included in the survey to help remind participants of their individual code; however, participants were free in their selection of what code they chose. Unfortunately, it was not possible to link participants to those that already participated in the first study (T1) with this second study (T2) using their ID code. Whether or not this was due to new participants completing the questionnaire or that the previous participants could not remember their self-generated code from the first survey could not be determined. Nevertheless, we were still able to analyze the cross-sectional data during the COVID-19 pandemic (T2) and as well give general insights on the development of influencing factors for ISM usage intention. Due to this limitation, we recommend that future research conduct longitudinal studies that can better show causal relationships regarding the DTPB when looking at employees' intention to use ISM.

An additional limitation of the study is that the study relies on self-reporting. For this study specifically, we consider that employees might have misinterpreted what internal social media is. We explained at the beginning of the questionnaire what ISM is and, where possible, referred to the specific tool that the organization uses. Nevertheless, it is impossible to exclude the possibility that employees might have taken other social media applications that are not

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located behind the organization's firewall (i.e., WhatsApp, etc.) into consideration when answering the questionnaire. However, due to the extensive explanation of ISM and specific mention of the organizations' tools at the beginning of the questionnaire, the impact on our study's result is minimal. We recommend that future research be precise about the research objectives when instructing participants.

Furthermore, the demographics of the study's sample must be critically examined. The median age of participants skewed young (35 years at T1 and 37 years at T2). Younger generations may be more technologically affine and open to using ISM, causing a possible effect on the intention to use ISM. Thus, interpretations of the study's results should be carefully considered. It would be of interest to gather insights on perspectives of older generations' intention to use ISM. Hence, we recommend that future researchers strive to gather a sample that includes older generations.

CONCLUSION

The importance of digital transformation and digitalization has never been as apparent as it has been during the COVID-19 pandemic. Organizations have been forced to put more emphasis on continuing their work processes remotely through the support of various technologies and, most importantly, through the use of ISM. Regardless of organizations offering such technologies, the factors that motivate or hinder employees' intention to use these technologies are complex. External conditions brought about by the constraints related to the COVID-19 pandemic crisis have played a role in motivating employees to use or increase their usage of ISM technologies and present a possible window of opportunity for ISM technologies. Still, these conditions alone cannot convince employees of their continued usage of these technologies. Employees must accept and see the usefulness and how ISM can help them in completing their work-related tasks. Employees' attitudes towards ISM are key in influencing employees' intention to use ISM. Other motivating factors, such as social norms or COVID-19's contextual conditions, can further support this or even convince non-users to use ISM technologies; however, if employees' attitudes towards ISM technologies do not remain positive, then employees might not be motivated to continue their use of them. Thus, it is important that even after the restrictions from the COVID-19 pandemic have been lifted, organizations must continue to show the benefits and importance of these technologies. In doing so, organizations can ensure that they remain flexible and continue to have effective structures within the organization even during times of external crisis.

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APPENDIX

Appendix. Investigated variables and corresponding items for their operationalization

Intention to use internal social media technologies

$\alpha=.94$, $m=4.08$, $sd=1.09$, $n=373$

I would use internal social media./I plan to use internal social media in the next Quarter.

I would regularly use internal social media./I plan to regularly use internal social media in the next quarter.

I plan to use internal social media in the future to communicate in general with other employees.

I plan to use internal social media in the future to collaborate with direct colleagues.

Attitudes

Usefulness

$\alpha=.93$, $m=4.02$, $sd=1.04$, $n=373$

The usage of internal social media is/would be a good idea.

The usage of internal social media alleviates/would alleviate my work.

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On the whole, the usage of internal social media is/would be an advantage.

Ease of Use

$\alpha=.90$, $m=4.04$, $sd=.94$, $n=373$

I feel/would feel confident in using internal social media.

It is/would be easy for me to use internal social media.

Compatibility

$\alpha=.91$, $m=3.77$, $sd=1.08$, $n=373$

The usage of internal social media fits/would fit in my workflow.

The options that internal social media offers fits/would fit in how I work.

Social Norms

Perceived Superior Usage Support (Injunctive Norm)

$\alpha=.74$, $m=3.79$, $sd=.79$, $n=373$

Upper management thinks the usage of internal social media is/would be an advantage.

Upper management judges/would judge the usage of internal social media sceptically.*

My direct superior thinks the usage of internal social media is/would be an advantage.

My direct supervisor judges/would judge the usage of internal social media sceptically.*

Perceived Peer Usage Support (Injunctive Norm)

$\alpha=.80$, $m=3.69$, $sd=.81$, $n=373$

My direct colleagues think the usage of internal social media is/would be an advantage.

My direct colleagues judge/would judge the usage of internal social media sceptically.*

Other employees think the usage of internal social media is/would be an advantage.

Other employees judge/would judge the usage of internal social media sceptically.*

Perceived Superior Usage Behavior (Descriptive Norm)

$\alpha=.74$, $m=3.48$, $sd=.97$, $n=373$

Upper management thinks that I should use internal social media.

I know that upper management uses/would use internal social media.

My direct superior thinks that I should use internal social media.

I know that my direct superior uses/would use internal social media.

Perceived Peer Usage Behavior (Descriptive Norm)

$\alpha=.78$, $m=3.81$, $sd=.90$, $n=373$

My direct colleagues think that I should use internal social media.

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I know that my direct colleagues use/would use internal social media.

Other employees think that I should use internal social media.

I know that other employees use/would use internal social media.

Behavioral Control

Internal Social Media Usage Ability

$\alpha=.75$, $m=4.28$, $sd=.75$, $n=373$

I can/could independently use internal social media.

I can/could handle using internal social media, even if nobody is available to show me.

I have the necessary technology resources to use internal social media.

COVID-19 Contextual Conditions

$\alpha=.91$, $m=4.01$, $sd=1.07$, $n=144$

Internal social media has helped me to complete my tasks despite the Corona restrictions.

Despite the corona restrictions, I can communicate with colleagues via internal social media.

Internal social media is a way of securely communicating between home offices and companies.

Because of the Corona restrictions, internal social media is particularly relevant in everyday work.

Without internal social media, the corona contact restrictions could hardly have been implemented in our company.

Internal social media make it possible to maintain operations despite the corona restrictions.

Note: all items were scored on a 5-point Likert scale with answers ranging from strongly agree to strongly disagree.;

* = negatively poled
