THE INFLUENCE OF COVID-19 ON EMPLOYEES' USE OF ORGANIZATIONAL INFORMATION SYSTEMS

Maayan Nakash	Department of Information Science, Bar-Ilan University, Ramat Gan, Israel	Maayan.Nakash@biu.ac.il
Dan Bouhnik*	Department of Information Science, Bar-Ilan University, Ramat Gan, Israel; Department of Computer Science and Engineering, Jerusalem College of Technology, Jerusalem, Israel	Bouhnik@jct.ac.il

* Corresponding author

ABSTRACT

Aim/Purpose	COVID-19 was an unprecedented disruptive event that accelerated the shift to remote work and encouraged widespread adoption of digital tools in organizations. This empirical study was conducted from an organizational-strategic perspective, with the aim of examining how the COVID-19 pandemic outbreak affected employees' use of organizational information systems (IS) as reflected in frequency.
Background	To date, only a limited effort has been made, and a rather narrow perspective has been adopted, regarding the consequences of the adoption of new work environments following COVID-19. It seems that the literature is lacking in information regarding employee use of organizational IS since the outbreak of the pandemic. Specifically, this issue has not yet been examined in relation to employees' perception about the organization's digital efforts and technological maturity for remote work. The present study bridges this gap.
Methodology	The public sector in Israel, which employs about a third of the Israeli workforce, was chosen as a case study of information-intensive organizations. During the first year of COVID-19, 716 questionnaires were completed by employees and managers belonging to four government ministries operating in Israel. The responses were statistically analyzed using a Chi-Square and Spearman's Rho tests.
Contribution	Given that the global pandemic is an ongoing phenomenon and not a passing episode, the findings provide important theoretical and practical contributions.

The period prior to the COVID-19 pandemic and the period of the pandemic are compared with regard to organizational IS use. Specifically, the study sheds new light on the fact that employee perceptions motivated increased IS use during an emergency. The results contribute to the developing body of empirical knowledge in the IS field in the era of digital transformation (DT).

Findings	More than half of the respondents who reported that they did not use IS before COVID-19 stated that the pandemic did not change this. We also found a significant positive correlation between the perception of the digital efforts made by organizations to enable connection to the IS for remote work and a change in frequency of IS use. This frequency was also found to have a significant positive correlation with the perception of the organization's technological maturity to enable effective and continuous remote work.
Recommendations for Practitioners	In an era of accelerating DT, this paper provides insights that may support chief information officers and chief digital officers in understanding how to promote the use of IS. The results can be useful for raising awareness of the importance of communicating managerial messages for employees regarding the organizational strategy and the resilience achieved through IS not only in routine, but also in particular in emergency situations.
Recommendations for Researchers	Considering that the continual crisis has created challenges in IS research, it is appropriate to continue researching the adaptation and acclimation of organizations to the "new normal".
Impact on Society	The COVID-19 pandemic created a sudden change in employment models, which have become more flexible than ever. The research insights enrich the knowledge about the concrete consequences of this critical change.
Future Research	We suggest that researchers investigate this core issue in other sectors and/or other countries, in order to be obtain new and complementary empirical insights on a comparative basis.
Keywords	COVID-19, new normal, information systems, information technology, remote work, digital transformation, workplace environment

INTRODUCTION

To cope with the information overload and ensure the timely reception of relevant and accurate information, organizations use information systems (IS) (Karim & Hussein, 2008). As a result of the rapid spread of the global COVID-19 pandemic, daily routine business activities were temporarily stopped and workplace environments experienced massive disruptions. Many organizations were required to rethink regular business processes and to provide training and equipment to enable their employees to work efficiently from home (Dwivedi et al., 2020; Williamson et al., 2020).

COVID-19 led to an acute crisis of great uncertainty (Batra, 2020; Tomé et al., 2022). In some ways the crisis can be seen as an incentive from an organizational perspective to take measures that would not have been considered at another time (Moser-Plautz & Schmidthuber, 2023). The pandemic, more than ever, encouraged reliance on digital tools and accentuated the challenge of the search of information on multiple platforms in information-intensive organizations (APQC, 2021b). Specifically, many concerns have been raised regarding the accessibility of organizational information in IS during COVID-19 (APQC, 2021a).

In light of the dizzying spread of the infectious disease, the digital revolution in work environments naturally accelerated. During this period, many organizations saw fit to initiate the implementation of digital transformation (DT) processes (Kodama, 2020; Moser-Plautz & Schmidthuber, 2023). Many

commentators suggest that the rapid shift of large sections of the workforce to remote work has forever changed how and where we work (Williamson et al., 2020).

The consequences of the devastating COVID-19 pandemic are still unfolding (Ajmal et al., 2021). But only a limited effort has been made, and a rather narrow perspective has been adopted, regarding the consequences of the adoption of the new work environments during COVID-19. Calls for research on topics that focus more on organizational and business aspects of the global pandemic can be found in the literature (Jacks, 2021). The ongoing pandemic has created challenges in IS research, so researchers in this field may now play a key role (Ågerfalk et al., 2020). Specifically, research in the IS field focusing on the information-intensive organizations viewpoint in the "new normal" remains limited.

Frequency of use is recognized in the literature as a popular index in the context of IS (Bala & Bhagwatwar, 2018), and its meaning in the organizational context is the extent to which employees use such systems. Several researchers considered system usage as the primary indicator of IS success (Almutairi, 2007). The need to examine the influence of the COVID-19 pandemic on the frequency of use of digital platforms in the new working environment has been emphasized in a previous study (Nakash & Bouhnik, 2022).

This research adopts an organizational-strategic perspective that seeks to shed light on the use of organizational IS during the COVID-19 outbreak. We do this in comparison to the pre-pandemic period, as well as in relation to the employees' perceptions of the organizational digital efforts and of the level of technological maturity for remote work. Therefore, we formulate these research questions:

RQ1: Is there a difference in the frequency of employees using IS before and after the COVID-19 outbreak? If so, what is it?

RQ2: How is the IS use frequency during COVID-19 related to employees' perception of the organizational digital efforts to enable remote work upon the pandemic outbreak?

RQ3: How is the IS use frequency during COVID-19 related to employees' perception of the organizational technological maturity for remote work?

LITERATURE REVIEW

THE "NEW NORMAL" FOLLOWING THE GLOBAL COVID-19 CRISIS

"COVID-19 has been a disrupting event of unprecedented proportions unlike anything else in modern history" (Dwivedi et al., 2020, p.7). As part of public health efforts aimed at breaking the transmission chains of the infectious viral disease, various governments adopted digital mechanisms for contact tracing and location data mining (Kariuki et al., 2021). With the awareness of the magnitude of the epidemiological crisis, drastic measures were put in place worldwide, including restrictions on movement and social gatherings. These measures caused many to turn to the Internet for a variety of needs such as work, education, social interaction and entertainment. Therefore, a significant increase in the demand for the Internet was observed and there were changes in the behavior of its users (Feldmann et al., 2021).

The human effort to cope with the implications of the coronavirus, encouraged adaptation to the "new normal" with changes in many areas, including the work environment (Barnes, 2020). The lockdown periods at the height of the COVID-19 pandemic accentuated how deep existing digital divides were, by the exposure of the jobs and services which could be provided or performed remotely and which not (Mazzucato & Kattel, 2020). Issues of reducing digital divides, continuous internet access and cyber security threats surfaced in the online environment (Herath & Herath, 2020).

MOVING TO DIGITAL WORKPLACE FOLLOWING THE PANDEMIC OUTBREAK

Given the growing expectations of the power and capability of technological tools, the work environment is expected to rely more and more on atomization (Nakash & Bouhnik, 2022). COVID-19 accelerated the transition from a traditional office workplace to working from home (Al-Madadha et al., 2022; Yang et al., 2021). Owing to the widespread adoption of digital tools that provide access to organizational applications and systems (Dwivedi et al., 2020), the digital skills of employees also improved significantly in just a short time (Richter, 2020). The widespread use of information technologies (IT) quickly became a cultural norm around the world, including cloud computing, video conferencing, collaboration platforms, and broadband Internet (Jacks, 2021).

The COVID-19 pandemic demonstrated that IT infrastructures need to be accessible and adequate for remote workplaces (Batra, 2020). An upward trend has been observed in digital tools that provide means of communication and facilitate remote meetings, such as ZOOM, Google Meet, Skype for Business and Microsoft Teams (Karl et al., 2022). The transformations born due to COVID-19 required greater integration of remote teams and reinforced the importance of seamless organizational communication (Ajmal et al., 2021). It seems that the global pandemic had enormous consequences on the role that technology plays in the workplace (Carroll & Conboy, 2020). COVID-19 showed the world the immense power of technology (Tomé et al., 2022) and brought it to the forefront (Barnes, 2020). Overall, many believe the DT at work has accelerated in response to the COVID-19 pandemic (Karanasios, 2022; Nagel, 2020). This acceleration has the potential to mitigate the vulnerability of organizations if and when the next crisis appears (Dwivedi et al., 2020).

IS AND THEIR APPLICATION IN ORGANIZATIONS

Many different views exist regarding the definition of the term "IS" (Paul, 2010). IS may be considered as "computer-based systems, which are combinations of hardware, software, and telecommunications networks that people build and use to collect, create, and distribute useful information" (Jessup & Valacich, 2008, p.567). According to another definition, IS are work systems "whose processes and activities are devoted to processing information, that is, capturing, transmitting, storing, retrieving, manipulating, and displaying information" (Alter, 2008, p.451). IS can also be defined as an integrated and cooperating set of software directed IT supporting individual, group, organizational, or societal goals (Watson, 2008).

IS provide users appropriate, timely and accurate information. In order to increase employee productivity and generate positive organizational results, organizations implement IS (Bala & Bhagwatwar, 2018). The concept of IS in the organizational context refers to a computer system which provides the employees with updated information on the organizational performance, such as current inventory and sales (UKEssays, 2015). Organizations are increasingly implementing IS to transform business models, support operations, and drive strategic decision making (Li & Yoo, 2022). IS in companies, businesses and corporations were developed with the aim of capturing, analyzing, and sharing the organizational information among colleagues. The advancement of technology has led to the emergence of new categories of IS that include databases, office automation, expert systems and more (UKEssays, 2015).

EMPLOYEES' USE OF ORGANIZATIONAL IS

"The massive availability of information poses several challenges, including storage, processing, meaningful organization, and presentation for future consumption" (Kumar & Priyadarsini, 2022, p.23). Because information is considered a key element for improving performance and is experienced as a strategic asset (Nakash & Bouhnik, 2022), effective solutions for searching and handling it are constantly required (Karim & Hussein, 2008). In the dynamic business environment,

organizations actively invest in IS and undertake DT initiatives (Li & Yoo, 2022). The common perception is that the use of IS may indicate their success (Al-mutairi, 2007).

Previous works presented different techniques for successful adoption of IS in information-intensive organizations. For example, a Technology Acceptance Model has been widely used for predicting the acceptance, adoption, and use of IT (Chen et al., 2011; Jokonya, 2015). How organizational-level strategies facilitate the IS use is a question that has been the focus of previous research (Li & Yoo, 2022). IS success was found to depend on various factors, such as user expectations, extrinsic motivation, IT infrastructure, attitudes towards technology, and user involvement (Petter et al., 2013). However, empirical studies on IS use at the organizational level are considered rare (Lin et al., 2019). Specifically, the frequency of employees' use of the organizational IS was identified as an issue worthy for future research with reference to COVID-19 (Nakash & Bouhnik, 2022).

IS ACCESSIBILITY FOR REMOTE WORK IN GOVERNMENT MINISTRIES IN ISRAEL

The Israeli economy gradually returned to activity upon the lifting of the lockdowns and removal of the movement restrictions, in what became known as the "Corona Routine." Before COVID-19, working beyond the walls of one's office was not common in this country (Flug et al., 2021), and existed mainly in the private sector (Benita, 2020). Therefore, COVID-19 de facto established a critical structural change in the working patterns of public service employees in Israel. A government report determined that the widespread implementation of remote work arrangements among employees of the entire public sector has the potential to increase the gross domestic product in Israel by up to NIS 850 million per year. Thus, a national plan to encourage such measures would be highly recommended (Benita, 2020).

Already in 2014, the Israeli government decided to move the IT and communication infrastructures of the government ministries to a cloud computing model. Efficiency, operational flexibility, and standardization of computing architecture were among the goals of this decision, while providing online access to IS users (Goldschmidt, 2020). However, according to the State Comptroller's report for 2021, only a small percentage of the existing IS in the government has actually transferred to cloud technologies (State Comptroller's Office, 2021b). Indeed, inadequate infrastructure and a lack of suitable equipment characterized the beginning of the transition of the Israeli government ministries to remote work during the COVID-19 period (State Comptroller's Office, 2021a). With the pandemic outbreak IS accessibility in the digital workplace environment was often limited, which indicated a lack of sufficient preparedness for the consequences of the crisis (Kabir, 2021).

METHODS AND MATERIALS

RESEARCH DESIGN

COVID-19 brought to light the ability of the public sector to manage emergencies (Mazzucato & Kattel, 2020). Due to the fact that the proportion of people employed in the public sector constitutes one third of the workforce in the Israeli economy (Benita, 2020), this sector was chosen as a case study of information-intensive organizations. A case study type strategy is considered acceptable in the field of IS research due to its ability to provide a good understanding of the relationship between organizations and technology (Oates et al., 2022).

We adopted the quantitative-positivist paradigm for our research, out of the desire to achieve objective, accurate, and reliable measurements for statistical analysis. A questionnaire was chosen for data collection because of its potential for high representation and low cost (Queirós et al., 2017). Specifically, we preferred to use an online survey. This preference was primarily due to practical reasons concerning the COVID-19 public health emergency crisis, which made field data collection quite challenging. Also, an online survey is considered an effective tool for data collection, allowing

respondents to answer at a time and place convenient for them. Low administration and follow-up costs are a key value of online surveys and were a consideration in the decision (Evans & Mathur, 2005; Regmi et al., 2016).

The study took place during the first year of the COVID-19 pandemic, between May 2020 and March 2021. It is worth noting that results mentioned in this article are part of a more extensive study about the effects of the COVID-19 outbreak on a variety of aspects related to information management in information-intensive organizations (such as information quality, search times, storage sources, etc.). In this paper we have chosen, as mentioned, to focus on the frequency of IS use before and during the pandemic.

DATA COLLECTION AND ANALYSIS

The research issues were examined over two separate periods: the period prior to the outbreak of the COVID-19 pandemic in Israel, and the period from the outbreak in Israel until the completion of the questionnaire. The questionnaires included closed-ended questions and statements graded on a 6-point Likert scale (from 1 (completely disagree) to 5 (completely agree) or 6 (unknown/irrelevant)). Additional questions included single or multiple choices.

The questionnaire consisted of the participants' demographic profile (gender and age) and their professional background (such as position, organizational seniority, work location). The respondents were asked to report on three elements: the frequency of their organizational IS use before and during COVID-19, their assessment of the digital efforts conducted in the organization to enable remote work, and their perception of the technological maturity of the organization to enable efficient and continuous remote work (See Appendix). The questionnaire was completed by 31 members of the control group and passed a credibility test by a certified statistician. Cronbach's alpha coefficient for the questionnaire was 0.78.

Data collection was approved by the Civil Service Commission and was completely anonymous, in accordance with the ethical rules practiced in scientific research, maintaining strict confidentiality. The questionnaire was distributed via email to thousands of government employees in four ministries located in Israel, who are required to use IS by virtue of their position. All offices belong to the public sector, have similar organizational cultures, and for at least part of the pandemic period, adopted flexible employment formats of remote or hybrid work. Participation in this study was voluntary and participants did not receive any compensation. After processing, responses were analyzed systematically using accepted statistical models with SPSS software.

SAMPLE

716 responses to the questionnaire were received in the final sample. 338 men (47.21%) and 378 women (52.79%) participated in the study. The most prominent age group was 41-50 years (n=226, 31.56%). In terms of positions in the organization, 58.24% of the participants (n=417) belong to the category of professional/administrative workers, i.e., those who do not have managerial responsibility. The rest, 41.76% of the sample (n=299), were middle management or senior management level managers. Most of the respondents had more than 10 years of experience in the organization (n=442, 61.73%), while a few were employed in their organization for only one year (n=19, 2.66%). Regarding the sampled organizations, 56.84% of the respondents belonged to a large government office employing over 5,000 employees (n=407), 20.39% of them belonged to a medium-sized government office with 1,000-5,000 employees (n=146), and 22.77% belonged to two small government offices with up to 1,000 employees (n=163). At the time the questionnaires were being completed 46.78% worked from the office (n=335) and 53.22% worked from home (n=381). Among those working from home, some worked entirely remotely (n=64, 8.93%), while the others in a hybrid manner (n=317, 44.27%). See detailed segmentation in Table 1.

Table 1. Segmentation of characteristics of the 716 study participants

ITEM	VALUE	N (%)	ITEM	VALUE	N (%)
Gender	Male	338 (47.21%)	Seniority in the Organization	Up to a year	19 (2.66%)
	Female	378 (52.79%)		Over a year to 3 years	82 (11.45%)
Age	Under 30	38 (5.31%)		Over 3 years and up to 5 years	61 (8.52%)
	31-40	167 (23.32%)		Over 5 years and up to 10 years	112 (15.64%)
	41-50	226 (31.56%)		Over 10 years	442 (61.73%)
	51-60	190 (26.54%)	Organization Size	Large	407 (56.84%)
	Over 60	95 (13.27%)		Medium	146 (20.39%)
Position	Professional/administrative employees	417 (58.24%)		Small	163 (22.77%)
	Middle management	234 (32.68%)	Work Location	Work from the office	335 (46.78%)
	Senior management	65 (9.08%)		Fully remote work	64 (8.93%)
				Hybrid work	317 (44.27%)

HYPOTHESES

Based on the theoretical and conceptual background for this study, and taking into account an analytical examination of preliminary findings obtained from the control group, the following research hypotheses were formulated:

(RH1) Following the COVID-19 pandemic outbreak, the frequency of IS use in organizations increased.

(RH2) A significant change in the frequency of IS use during COVID-19 will be found among those who reported that the organization made many digital efforts to enable remote work upon the pandemic outbreak.

(RH3) A significant change in the frequency of IS use during COVID-19 will be found among those who reported high organizational technological maturity for effective and continuous remote work.

RESULTS

DIFFERENCES IN IS USE

In order to examine changes in the frequency of IS use before and during COVID-19, we conducted a Chi-Square test. The analysis showed a significant correlation (Cramer's V=0.535, p<.001). Table 2 shows that 55.3% of respondents who stated that they did not use the organization's IS before the pandemic, stated that this did not change during the pandemic. Additionally, of the respondents who stated that before the pandemic, they did not use IS at all (10.6%) or used it sparingly (15.7%) reported that during COVID-19, they used the systems more than once a day. See Table 2.

Table 2. Frequency of IS use before and during the COVID-19 pandemic

IS USE	DURING COVID-19					
BEFORE COVID-19		No use at all	Rarely	Once a week	Once a day	More than once a day	Total
	No use at all	55.3%	21.2%	11.8%	1.2%	10.6%	100%
	Rarely	5.2%	54.1%	18.0%	7.0%	15.7%	100%
	Once a week	4.0%	8.8%	56.8%	18.4%	12.0%	100%
	Once a day	0.0%	2.3%	8.0%	51.1%	38.6%	100%
	More than once a day	1.1%	3.3%	3.7%	10.2%	81.7%	100%

PERCEPTIONS OF DIGITAL EFFORTS AND FREQUENCY OF IS USE

In order to examine the correlation between perception of the organizational digital efforts to provide access to IS for remote work, and a change in frequency of IS use during the COVID-19 pandemic, we conducted a Spearman's Rho test. The results indicated a positive significant correlation between these variables, rs=.28, p<.001. That is, the more respondents believed that more organizational digital efforts were made during COVID-19, the more they reported increased use of IS. In other words, a significant increase in the frequency of IS use was identified among them.

PERCEPTIONS OF TECHNOLOGICAL MATURITY AND FREQUENCY OF IS USE

In order to examine the correlation between the perception of the organizational technological maturity for remote work, and a change in the frequency of use of IS during the COVID-19 pandemic, we conducted a Spearman's Rho test. The results indicated a significant positive correlation between these variables, rs=.17, p<.01. That is, the more the respondents estimated that the technological tools in their organization were mature enough to enable remote work, the more they reported an increased use of IS. In other words, a significant increase in the frequency of using IS was detected among them.

DISCUSSION

Changes that occur from time to time in the existing processes in public organizations are often related to the implementation of IS (Ziemba & Obłąk, 2015). Many organizations struggled to adapt to DT, in particular as an organizational response to COVID-19 (Moser-Plautz & Schmidthuber, 2023). IS played a critical role during the global pandemic (Karanasios, 2022). In the absence of essential equipment and with inadequate infrastructure, it became clear that the government ministries in Israel were not sufficiently prepared for remote work (full or hybrid) upon the COVID-19 outbreak (Kabir, 2021; State Comptroller's Office, 2021a). Before the pandemic, the application of IS in cloud technologies in these offices was somewhat limited and was not widely implemented (State Comptroller's Office, 2021b).

Fundamentally, organizational IS made it possible to maintain business succession and functional continuity. As part of their activities in this unpredictable period, organizations were forced to adopt

new IS on a large scale (Dwivedi et al., 2020). Given the frequent adoption of IT and communications technologies solutions during an unprecedented global disruption (Ågerfalk et al., 2020), it was natural to assume that COVID-19 contributed to an increase in the frequency of IS use. However, only a partial confirmation of hypothesis **RH1** is obtained.

Technology has played a pivotal role in efforts to normalize the work and life routines in the rather abnormal situation posed by the COVID-19 pandemic (Herath & Herath, 2020). However, a considering that using innovative technological tools was the only way to communicate and complete tasks both in the office and at home (Moser-Plautz & Schmidthuber, 2023), the present study exposes a disturbing finding; over half of the respondents who claimed not to have used IS prior to the pandemic stated that even with the outbreak of COVID-19, this has not changed.

This can perhaps be attributed to low employee awareness of the role and place of IS in an information-intensive organization. Furthermore, organizations that were accustomed to a particular work configuration before the outbreak of COVID-19 were forced to move abruptly to a new and unfamiliar work model. Thus, the implementation of online platforms in the changing work environment was accompanied by a major challenge in the aspects of organizational culture (Barnes, 2020); which may shed light on this finding.

Another logical reason may be related to the timing of the research, which was up to a year into the pandemic. Possibly, a more optimistic picture will be revealed in time, with organizations' further adaptation and acclimation to the "new normal." However, even in the current situation, one can recognize signs of hope and expect a positive trend of improvement, as 26% of workers who reported a lack of use or infrequent use of IS pre-COVID-19 confirmed they use it more than once a day since the pandemic outbreak.

COVID-19 has influenced the attitudes of government employees towards technology and encouraged a spirit of accelerated innovation towards digital government (Moser-Plautz & Schmidthuber, 2023). Our study reveals a significant positive correlation between the perception of the organizational digital efforts upon the pandemic outbreak, and the change in the frequency of IS use. Considering this, we see that hypothesis **RH2** was confirmed. Furthermore, the change in the frequency of IS was found in a significant positive relationship with the respondents' assessment of the organizational technological maturity as high, so that it may enable efficient and continuous work outside the walls of the physical offices. Thus, hypothesis **RH3** was also fully confirmed.

These findings can be explained by the premise that perception is linked to behavior. "Perception and behavior are inextricably intertwined such that people automatically behave as they perceive" (Chartrand et al., 2006. p.334). That is, it is possible that the positive perception regarding the efforts invested by the organization in technological tools in order to enable the continuity of work, in itself encouraged increased use of these tools. Similarly, the increased use of IS can be explained by relying on a positive assessment of the organization's technological maturity to enable work in flexible employment mechanisms. These findings are consistent with evidence that lockdowns have led to an "explosion" in the use of digital tools (Richter, 2020).

CONCLUSION

In conclusion, we found that, in general, the frequency of IS use did not increase as we expected it to increase following COVID-19. More specifically, an increase in the frequency of use was observed among employees who were more inclined to perceive the digital efforts to connect remotely as positive. The findings also indicate that the more an increase in the positive assessment of the organization's technological maturity to enable effective and continuous remote work, the greater the use of IS was observed upon COVID-19.

We take into account that our research focuses on a specific sector in one country; therefore, care should be taken when generalizing the results. If future research will investigate this core subject in

other sectors and/or other countries, it will be possible to arrive at new and complementary empirical insights on a comparative basis. Furthermore, we propose to enrich the findings in a follow-up study on the modes of organizational IS use at work in digital workplace in the post-COVID-19 period.

It has already been claimed that "although no one can foresee how the rapid change to digital work will affect the work situation and spread of digital work forms in the future, the use of digital technologies has clearly increased, at least temporarily, as a result of the COVID-19 pandemic" (Nagel, 2020, p.861). Therefore, it is not impossible that due to the circumstances created by the "new normal," organizations will change forever (O'Leary, 2020). With the flexible employment policy becoming a norm in the post-pandemic era (APQC, 2020; Guyot & Sawhill, 2020; Yang et al., 2021), the research findings are significant.

From a theoretical point of view, the paper contributes to the developing body of empirical knowledge in the IS field in the era of DT. We analyze and compare, for the first time, the changes in organizational IS following the COVID-19 pandemic outbreak. Specifically, the study sheds new light on the fact that employee perceptions motivated increased IS use in a time of crisis. From a practical level, we provide insights that may support chief information officers and chief digital officers in understanding how to promote increased use of IS. In an era of accelerating DT, we believe that the results will be useful in raising awareness of the importance of communicating managerial messages for employees regarding the organizational strategy and resilience achieved through IS not only in routine, but also and in particular during emergency situations. In addition, fertile ground for further research on organizational adaptation to the "new normal" is laid thanks to the findings obtained in this study.

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APPENDIX

Research Questionnaire: The frequency of use of information systems in organizations before and during COVID-19 pandemic

Office Name

a. Office A
b. Office B
c. Office C
d. Office D

Note. In keeping with our commitment to confidentiality of the collected information, the names of the participating offices remain anonymous.

Professional Background

1. Position:
    a. Professional / administrative employee
    b. Manager at the middle management level
    c. Manager at senior management level

2. Seniority in your organization:
    a. Up to a year
    b. Over a year to 3 years
    c. Over 3 years and up to 5 years
    d. Over 5 years and up to 10 years
    e. Over 10 years

3. In the current time period I:
    a. Works from the office
    b. Works sometimes from the office and sometimes from home (remotely)
    c. Works from home (remotely)

Demographic Details

1. Gender:
    a. Male
    b. Female

2. Age:
    a. Under 30
    b. 31-40
    c. 41-50
    d. 51-60
    e. Over 60

Part I – Prior to the COVID-19 pandemic

This part refers to the routines prior to the outbreak of the COVID-19 pandemic in Israel (i.e., before March 2020).

1. Prior to the outbreak of the COVID-19 pandemic, how often did you use the organization's information systems on average (including digital document management tools, regulation and procedures systems, collaborative technology tools, etc.)?
   a. More than once a day
   b. Once a day
   c. Once a week
   d. Rarely (for instance, once or twice a month)
   e. No use at all

Part II – Since the outbreak of the COVID-19 pandemic until today

This part refers to the routines since the outbreak of the COVID-19 pandemic in Israel (March 2020) until today.

Since the outbreak of the COVID-19 pandemic until today	1 Completely Disagree	2 Slightly Agree	3 Partially Agree	4 Agree	5 Completely Agree	6 Unknown/ Irrelevant
Many organizational efforts have been made to provide a connection to the organization's technology systems and digital tools, even in remote work						
From the experience I gained during this period, the technology in the organization is mature enough to enable ongoing and effective work, by making the information accessible even in remote work						

1. Since the outbreak of the COVID-19 pandemic until today, how often do you use the organization's information systems on average (including digital document management tools, regulation and procedures systems, collaborative technology tools, etc.)?
   a. More than once a day
   b. Once a day
   c. Once a week
   d. Rarely (for instance, once or twice a month)
   e. No use at all

AUTHORS

Ms. Maayan Nakash is a Ph.D. student in the Department of Information Science in Bar Ilan University Israel. She is an Information Science magna cum laude M.A. graduate, specializing in knowledge management and information technology, with summa cum laude thesis. Maayan has extensive knowledge and experience in design and implementation of strategic solutions and systematic methodologies for information and knowledge management; mapping needs to improve business performance; modeling, characterization, and analysis of systems. https://orcid.org/0000-0001-6791-1624

Prof. Dan Bouhnik is the Rector of the Jerusalem College of Technology. He was a faculty member in the Department of Information Science in Bar-Ilan University. Dan is the author of a number of books used for teaching advanced computer sciences and his research focouses on knowledge management, information security, big data and the infusion of new technologies in the learning environment. https://orcid.org/0000-0002-3141-8819