

## **Digital Knowledge Sharing and Work Creativity while working from home during the COVID-19 Pandemic Settings: Evidence from Lebanese Teleworkers**

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### **Abstract**

*COVID-19 imposed a new working behavior. As governments imposed national confinements to contain the virus, companies shifted towards WFH – Working from Home further relying on digital applications to facilitate the exchange of work-related information and digital knowledge sharing (DKS) among co-workers. Although many scholars outlined the influence of DKS on the Creative Performance (CP) of knowledgeable teleworkers according to previous research, WFH was considered as optional work behavior, while it has become a reality during COVID-19. Thus, this paper aims to elucidate the various, still unexplored aspects of working from home, reassessing the correlation between DKS and CP next to studying the possible influence of contextual factors (organizational climate, individual factors, and demographics) on both DKS and teleworkers' CP. In this context, a cross-sectional survey was distributed online to 263 Lebanese teleworkers. The study settles that digital technology is a pivotal factor in affecting employees' digital knowledge sharing and therefore overall business performance as well and highlights the need to develop new theoretical approaches specific for the working from home (WFH) context.*

**Keywords:** *Work from home, digital knowledge sharing, creative performance, COVID-19 pandemic.*

### **1. Introduction**

Generally, pandemics play major role in affecting businesses as they cause fiscal impacts on a short-term period and have economic effects on the long run (Shang et al., 2021). During the Black Death plague outbreak, Europe, infected by the bubonic pandemic, witnessed radical changes, where small businesses went bankrupt and large corporations weathered better and seized beneficial opportunities (Economics Observatory, 2020). In the same context, the coronavirus pandemic's both characteristics and economical influence can be analyzed through the depicted attributes of the historical epidemic. Yet, the occurred damage and aftermath of COVID-19 lingered to affect humans' behavior and social lives as governments across the globe imposed various regulations such as social distancing and nationwide lockdowns. Thus firms, which were able to shift to digital operations employed the work from home (WFH) system. WFH is generally associated with systems and programs that offer workers and employees a work life balance, inside and outside their desks in workplaces (Afrianty et al., 2021). In this scope, global

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companies have coped rapidly with this new model and contributed with conscious efforts to encourage and elevate both employee connection and knowledge sharing (KS). Yet, the regulations to contain the coronavirus' spread, pushed employers to shift towards digital knowledge sharing (DKS). As a result, all tasks and meetings were scheduled and screen-shared via digital communications tools and applications (Skype for business, Zoom, MS teams...).

In the literature, scholars anticipated that digital and online platforms affect the creative performance (CP) of employees (Chandra et al., 2020) and that implementing digital technologies inside corporations can stimulate CP effectively, next to employees' engagement in creative problem solving in case they have digital skills or are provided with digital tools (Cai et al., 2020). Previous research also involved an examination of the drawn association between DKS and employees' CP, concluding that both internal DKS and external DKS result in a greater CP within the working from home context (Tønnessen et al., 2021). In fact, internal and external DKS has been highlighted in relation to employees' problem-solving skills to showcase the positive impact DKS has over workers' performance inside organizations, according to Carmeli et al. (2013). Similarly, Van der Meulen et al. (2019) have mentioned DKS in reference to implementing much knowledge in the digital sources domain both inside and outside organizational boundaries, claiming that this integration can raise creative performance of employees. Actually, in prior studies, CP is understood when an employee resorts to innovation and production of creative ideas while working, as a response to contextual factors and access to KS. Accordingly, other determinants such as demographics (employees' age, gender, job position...), individual factors (stress, motivation, productivity...) as well as the organizational climate take part of the investigation alongside DKS and teleworkers' CP. In a similar context, teleworkers' CP is captured as a result of multifaceted interactions between individual factors related to stress and motivation, and contextual one such as the organizational climate (Woodman et al., 1993). COVID-19 plague had a destructive effect on the economic situation and businesses worldwide, thereby, employees seem to express concerns regarding their job security and employment prospects on the long run (Camilleri, 2021). In consequence, worried employees can be demotivated and expose to high level of stress, especially while working remotely from home and absorbing all related news to the uncertainties in dealing with the coronavirus global crisis, and whether business life will return to normal in offices on the short run or no. Stress, a studied factor in this research as an individual feature, has long been proven to have a pejorative and harmful effect on creativity. Indeed, it has been demonstrated that stress can disrupt processes related to creativity, which encompass cognitive flexibility and task alternation (Plessow et al., 2011; Steinhäuser et al., 2007). Hence, based on prior evidences, the creative performance of knowledgeable employees might be influenced in both manners: by the digital knowledge sharing (DKS) and by contextual factors such as individual factors related to motivation and stress.

Lebanon started taking measures to fight the coronavirus epidemic since March 2020, with intermittent lockdowns and other adopted protective measures in the aim of mitigating the virus' impact and reduce its toll on the Lebanese society. COVID-19 negatively impacted Lebanese firms, as they face severe major economic uncertainties, as well as different obstacles, especially that they lack the technological tools as well as infrastructure needed (e.g., low internet speed and power interruptions) to provide an easy working from home (WFH) experience. The empirical research related to examining employees' behavior while working remotely from home and what they underwent from anxiety and low productivity during COVID-19 in Lebanon, is considered poor and missing evidences. Consequently, this study seeks to narrow down this gap by evaluating the impact of these individual factors along other contextual ones on the digital knowledge sharing (DKS) within the various Lebanese private firms. In fact, one recent conducted research investigated the different reactions of employees belonging to the

Lebanese banking sector, towards knowledge sharing via digital tools. The findings revealed that the majority of the surveyed workers keened to exchange their know-how and expertise with each other, as well as to support the development of new innovative strategies and adoption of new technology (Al Ahmad et al., 2020). Hence, teleworking has been considered as a vital key response to overcome the coronavirus plague in Lebanon and has been adopted by the government and private corporations.

This research paper pays contribution to prior literature of remote working as it encounters the remote system during the COVID-19 pandemic contingent circumstances, hence, heightening the outcomes of WFH, being enforced, whereas prior research considered the working from home system as an optional substitute. In fact, the outcomes of the imposed and nationwide WFH practices on the organizational detriments such as DKS and CP remain unexplored in prior research. Our study investigates the association of DKS and CP under the extraordinary circumstances, unlike previous studies. Indeed, conducted research on WFH prior to the COVID-19 pandemic revealed that working remotely from home resulted in higher creative performance for teleworkers in parallel to office work lifestyle (Naotunna & Zhou, 2018; Vega et al., 2015). Furthermore, based on scholars' previous observations, KS digital practices greatly influence the CP of teleworkers prior to the COVID-19 pandemic (Belanger & Allport, 2008; Van der Meulen et al., 2019). However, since these findings of such correlations between DKS and CP might have altered considering the COVID-19 framework and nationwide lockdowns, reassessing such correlation is important to perceive the newly emerged outcomes of WFH practices post pandemic era. Poor research shed the light on WFH during and after this worldwide plague affects both DKS and CP of teleworkers, hence, this study aims to fill this research gap. Also, the WFH literature prior to pandemic related crisis stresses on dominant factors affecting DKS and knowledge workers' CP. These detriments are categorized in terms of demographical variables, organizational climate and individual factors (Soda et al., 2019; Kim et al., 2018; Moolenaar et al., 2014). Yet, it is still questionable whether these results haven't changed post pandemic era. Tønnessen et al. (2021) have investigated such association while analyzing the collected data adopting different parametric tests such like the one-way ANOVA test, alongside a linear regression analysis. Our study stands differently as it assumes The ordinal regression to examine the drawn hypotheses and analyzed the data collected, by that, it delivers different results and add to the prior literature new evidences in both knowledge management and employee performance domains. Thus, the conducted investigation is fundamental as it depicts and analyzes the relationship between all measured variables by drawing two important research questions:

RQ1. Is there a relationship between the contextual factors (demographic, individual, and organizational) and the DKS during COVID-19 pandemic in Lebanon?

RQ2. Is there a relationship between the contextual factors (demographic, individual, and organizational) and knowledge workers' CP during COVID-19 pandemic in Lebanon?

To answer the proposed questions, an online comprehensive survey encompassing a total of 248 respondents was conducted and ordinal regression pre-estimation tests were performed over the sample. Teleworkers were classified based on their age, gender, job position entitlement (manager or non-manager), job specialty and type of organization they work in. Also, the goodness-of-fit for the pre-estimation tests was verified before performing the regression.

Our findings reveal that among the studied contextual factors, both organization climate and individual factors are associated to the digital knowledge sharing (DKS), implying that an increased usage of devices and tools as part of the organizational technical subsystem during COVID-19 lockdown, as well as more related work information are shared online, DKS is better fostered and levels of stress rise for remote employees so they become more productive in executing tasks while working remotely from home.

Additionally, this study's results show that age is significantly associated with teleworkers' creative performance (CP) unlike previous studies findings. This postulates that as more aged employed have better creativity in performing work from home tasks. Based on these results, managers are required to pay a closer attention to younger teleworkers to find ways to boost their work creativity as well as to foster a healthy work digital environment where all necessary devices and tools are adopted for information interchange.

The rest of the paper is organized as follows: Literature reviewing is summarized in Section 2 with a take on theoretical and empirical prior findings. Section 3 delivers the adopted data collection and treatment methodology. Following section 3, a discussion of key findings is presented in section 4, while a summary of the contributions and implications for practice and further research is given in Section 5.

## 2. Theoretical framework and hypotheses

### 2.1 Theoretical framework

The social capital theory (SCT) is adopted along a contingent socio-technical frame view, in order to validate or disprove the developed hypotheses. This theoretical framework relies on the social capital concept which is considered as a series of networks put together and having common criteria like norms and values, which enables co-operation among groups (OECD insights, 2020). Also, DKS, both internally and externally, is influenced by these networks (Tønnessen et al., 2021). The socio-technical perspective is utilized when investigating the impact of contextual factors on KS in a certain company, and it accompanies the social capital theory (SCT). It introduces two key functions that constituted any organization, which are the social and technical sub-systems (Lee, 2018). The social sub-system of a corporation englobes employees and employers' knowledge, skills and expertise, work related motivation, alongside organizational structures. While the technical sub-system encompasses devices, tools, and techniques which improves general organizational performance.

### 2.2 Hypothesis Development

#### 2.2.1 Organizational climate, DKS and CP

Following Cohen & Cromweel (2020), organizations, which shifted to remote working, faced cybersecurity threats and had hard time to manage time and devices used to transmit knowledge digitally, implying a negative impact of the infected organizational climate by COVID-19 on DKS. Based on Mutonyi et al. (2020) research findings, the organizational climate (OC) is influential on employees' creative performance, as the individual creativity of the worker mediates the correlation between OC and employee's innovative behavior. Following Chanana & Sangeeta (2020), organizations which are implementing engagement activities in the work from home context, have their employees feel committed to their firms, and staying motivated by learning new skills, self-improving and unleashing their work creativity. So, it seems interesting to investigate whether the organizational factors and the DKS are correlated or not, and it is also efficient to evaluate the relation between organizational climate and employees' creative performance. These hypotheses are formulated as follows:

Hypothesis 1a. There is a relation between the organizational climate and DKS.

Hypothesis 1b. There is a relation between the organizational climate and knowledgeable employees' CP.

#### 2.2.2 Individual factors, DKS and CP

Employees and managers' motivational attitude fosters DKS in online networks, according to Wasko & Faraj (2005). In addition, Golden & Gajendran (2019) claim that

CP significantly depends on intrinsic motivation rather on employee work site. Other scholars have highlighted the stress factor, as a result of employees' issues and concerns regarding external reasons or subjects related to their work. Stress has been proven as a detrimental variable negatively impacting creativity in terms of workers' cognitive flexibility and task alteration (Plessow et al., 2011; Steinhäuser et al., 2007). Therefore, individual factors and employees' creative performance seem to establish a correlation that is stimulating to study its existence. Thus, the following hypothesis is assumed:

Hypothesis 2a. There is a relation between individual factors and DKS

Hypothesis 2b. There is a relation between individual factors and knowledgeable employees' CP.

### 2.2.3 Demographic factors, DKS and CP

Scholars have identified demographic variables as predictors of the DKS techniques (Wang & Noe, 2010) since these types of factors influence the social interactions, which aid the network ties to be formed. Demographic factors cover knowledgeable employees' gender, age, and job position/role, along with both organizations' size and type. Based on recent findings, small and medium enterprises (SMEs) are presented as the leading organizations for better DKS since the number of employees, that is the size of the companies is limited (Tassabehji et al., 2019). Moreover, both age and gender play significant role in affecting DKS: Few studies point out that middle-age and old employees face difficulties in handling digital technologies, thus they slow down the pace of DKS operations inside firms (Tønnessen et al., 2021). Many papers have also proved that male workers have stronger ability to cope with digital networks for KS, in comparison with female workers' lower ability to do so (Ma & Yuen, 2011). Foss et al. (2013) study tackles the gender factor where the surveyed female employees seem to showcase lower capability in their CP than male employees due to the gender stereotyping found inside corporations. Hendrawijaya (2019) suggests that the demographic indicators positively influence CP. Consequently, the following hypotheses are developed taking into account all prior literature review:

Hypothesis 3a. There is a relation between demographic factors and DKS

Hypothesis 3b. There is a relation between demographic factors and knowledgeable employees' CP.

The theoretical framework constructed based on the studied variables and formulated hypotheses is presented in Figure 1.

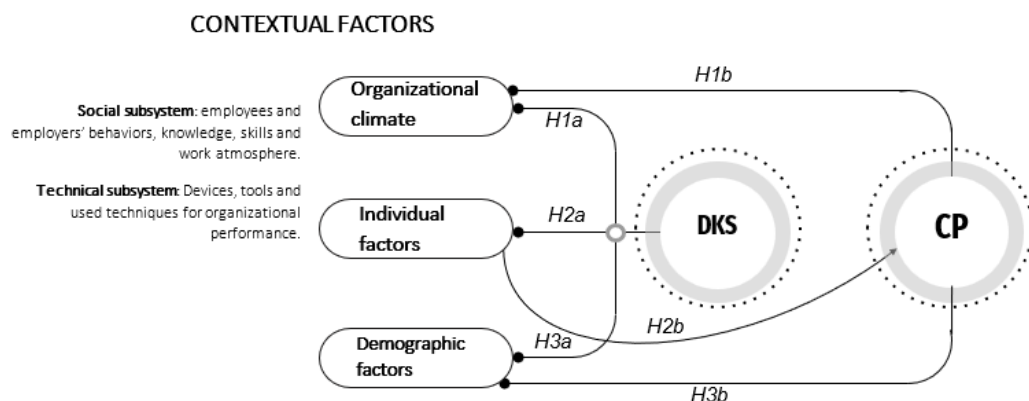


Figure 1: Study model under SCT. Source: "Author"

### 3. Methodology

#### 3.1 Sample and procedure

The five studied variables are measured by carrying a quantitative method approach. The collected primary data is sourced from a conveyed survey composed of fifteen closed-ended questions directed towards knowledgeable employees belonging to private Lebanese firms from different sectors specialized in engineering, information communication technology (ICT), management and many others, and who were working from home during the lockdown period. This type of employee was carefully chosen to participate in the survey by conveying questions to eliminate entrepreneurs, or employees like hotels receptionists, labors, waiters, site workers, or who belong to an organization yet haven't engaged in remote working activities and didn't work from home (WFH) during the lockdown. The cross-sectional survey was distributed online via professional emails for organizations that participated in the investigation and via social media platforms like WhatsApp, Instagram, and Twitter, yet the secrecy and privacy of respondents' answers were assured along their personal information regarding their participation.

After Lebanon confirmed its first coronavirus case on February 21, 2020; the Lebanese government imposed a first national lockdown on March 15 as the COVID-19 cases kept surging till they hit 870 confirmed cases per day along 26 deaths in total. Thence, data was collected from October 1, 2021 to February 23, 2022, encompassing a total of 263 participants in the study yet whom 15 responses were removed, either due to incomplete or insufficient data or the responses were irrelevant to the WFH context since the surveyed employees didn't engage in this type of working behavior. Thus, the final dataset comprises 248 respondents. The elaborated descriptive statistics are elucidated in Table 1.

Table 1: A summary of the descriptive statistics

Descriptive statistics	Teleworkers belonging to SME enterprises	Teleworkers belonging to large companies	Teleworkers belonging to ICT companies	Teleworkers belonging to insurance and health-care services sector	Teleworkers belonging to education institutions	Teleworkers belonging to digital marketing and advertising sectors	Teleworkers belonging to engineering firms
Total of participants (248 respondents)	51.6 %	48.4 %	22.9 %	20.2 %	18.5 %	17.3 %	13.3 %
Lawyers, real-estate agents or working in industrial field	Teleworkers aged between 20 and 30	Teleworkers aged between 31 and 39	Teleworkers aged between 40 and 39	Teleworkers aged 50 and above	Female teleworkers	Male teleworkers	
Total of	7.8 %	32.7 %	35.5 %	22.6 %	9.2 %	53.2 %	46.8%

participants  
(248  
respondent  
s)

### 3.2 Variables characteristics and Measures

In this paperwork, the studied variables are quantified data as they are assessed following five or more criteria for each one, which are stated in the distributed survey with closed-ended questions in Likert scale form.

#### 3.2.1 Demographics

The demographical factor is tested based on six different criteria shown in the table 2 below, alongside their measurement scales.

Table 2: Demographical factor measured criteria. Source: “Author”

Studied variable	Criterion	Category/ Measurement scale
Demographics	Age of employees	20-30 years old 31-39 y.o 40-49 y.o 50 and above
	Gender	Male Female
	Job position/ Job title	Manager, chief or director Non-manager, specialist, coordinator, supervisor or executive Technician Others
	Type of organizations	Public Private
	Specialty of organizations	Real estate Engineering services IT, communication and technology services (ICT) Financial, marketing, or management or business services Industrial or Material company Health care services Law firm Education institution Others



	Size of organizations (The size of any firm is measured according to the number of employees it withholds)	0-50 employees 51-100 employees Above 100 employees
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### 3.2.2 Organizational climate

The organizational climate (OC) is assessed within a social-technical view as discussed earlier, thereby the closed ended questions are divided into two sub-sections: the social sub-system and the technical sub-system. Participants were asked to state their opinions that suits them best by answering with “1= Strongly disagree; 2= Disagree; 3= Neutral; 4= Agree or 5= Strongly agree” to the following five statements: “I feel that the COVID-19 pandemic didn’t affect my organization’s work atmosphere”, “My co-workers and I gained new knowledge and skills while working from home (WFH)”, “I am satisfied with my organization’s digital capabilities at managing apps and devices to accomplish work tasks while WFH”, “I am satisfied with my organization’s innovative climate for WFH”, and “I appreciate my organization’s effort for providing support and opportunities to boost my performance while WFH”. As part of the data treatment, the organizational climate (OC) is measured by the mode of the five Likert scale questions set responses.

### 3.2.3 Individual factors

The individual factors (IF) are assessed according to five criteria encompassing the tested level of stress while working from home (WFH), the level of motivation as well, the employee’s digital skills, productivity and the tools and equipment the employee was surrounded with to accomplish work tasks remotely during the lockdown period. Respondents were asked to share their opinions and answer with “1= Strongly disagree; 2= Disagree; 3= Neutral; 4= Agree or 5=Strongly agree” to the following five statements: “I have very high level of stress while performing work from home (WFH)”, “I feel less productive to work from home as compared to working at the office”, , “I am satisfied with my digital skills at managing apps to accomplish work remotely from home”, “I am motivated while performing WFH” and “I have all the necessary equipment to fulfill my role as my usual standards”. Individual factors (IF) was measured in data analysis by the mode of the five Likert scale questions set responses.

### 3.2.4 Creative performance

CP is tested for the surveyed employees based on five criteria covering the creative behavior of the employees, the tools and resources that nourish their creativity and the type of online communication where knowledge sharing takes pace. The surveyed participants were asked to give their opinion to the following five statements following the Likert scale: “I have less creative performance (CP) while working from home (WFH) than I used to have while working inside office spaces”, “During an online meeting, I have an opportunity for a type of discussion that spurs my ideas”, “I feel probably more inspired to find new solutions at the workplace with my team than I do at home while working”, “I am much unlikely to adapt to new changes and new uncertainties of COVID-19 while WFH” and “I possess the ability to use the available resources and tools in order to improve my skills and find creative means to help me with my work”. Creative performance (CP) is measured by the mode of the five Likert scale questions set responses.

### 3.2.5 Digital knowledge sharing

DKS is also assessed in this study following two categories: internal and external DKS. So, respondents were asked to give their opinion to these following five statements: “The internal digital knowledge sharing (DKS) during the lockdown (online exchange of useful



info related to work) was beneficial”, “The external DKS during the lockdown (online exchange of info related to COVID-19 and other topics) was sufficient”, “My organization adopted the right necessary tools, devices and apps to help improve the DKS to the employees”, “The more years of experience I have, the more I am motivated to share or receive info during an online meeting” and “The quality of online conversation I had with my co-workers during the lockdown period, is much lower compared with the quality of conversation we had at the office”. Digital knowledge sharing (DKS) was measured by the mode of the five Likert scale questions set responses.

### 3.3 Data analysis

The ordinal regression is assumed to examine the drawn hypotheses since it’s considered the adequate parametric test given that the dependent variables for both Equation 1 and Equation 2 are ordinal scale data. With the aid of IBM SPSS Statistics program, the ordinal regression analysis is carried out with to predict DKS and CP along all contextual factors (demographics, individual factors(IF), and organizational climate(OC)). Both equations are presented as follows:

$$DKS = \alpha_0 + \alpha_1 IF + \alpha_2 OC + \alpha_3 \sum Demo + \varepsilon \quad (1) \quad \text{Equation (1)}$$

$$CP = \beta_0 + \beta_1 IF + \beta_2 OC + \beta_3 \sum Demo + \varepsilon \quad (2) \quad \text{Equation (2)}$$

Where  $\alpha_0$  is the model intercept,  $\alpha_1$  to  $\alpha_3$  are slope coefficients; and where  $\beta_0$  is the model intercept,  $\beta_1$  to  $\beta_3$  are slope coefficients.

## 4. Results and Interpretations

The results of the conducted analysis are elaborated in each following section depicting this study’s findings according to each formulated hypothesis.

### 4.1 Reliability Test

Cronbach’s Alpha values for the five tested variables range from 0.72 till 0.82 for the DKS variable, as illustrated in table 3, hence, within the acceptable range. This postulates a significant inter-relatedness for each variable’s set of items (criteria), thus, the proposed Likert scale statements are proved to be reliable.

Table 3: Cronbach's Alpha values for the studied variables

	N of items	Cronbach’s Alpha
Demographics	6	0.720
Organizational climate (OC)	5	0.759
Individual factors (IF)	5	0.816
Creative performance (CP)	5	0.812
Digital knowledge sharing (DKS)	5	0.829

### 4.2 Pre-estimation tests

The ordinal regression pre-estimation tests were conducted over the data sample, for each of Equations (1) and (2). Furthermore, based on the likelihood ratio of the chi-square test, the models showed to be significant and fit. The chi-square of the goodness of fit tests was 0.90 for equation 1 regression and 1.00 for equation 2 regression, which is significant at a 1% level of significance.

Table 4: Ordinal regression pre-estimation test

Equation	1		2	
Test	Chi-Square	Sig.	Chi-Square	Sig.
Model Fitting -2 Log Likelihood	43.147	<0.01	14.693	0.065
Deviance Goodness-of-Fit	407.756	1.000	589.785	1.000

#### 4.3 Work practices during COVID-19 pandemic

According to the ordinal regression analysis, both the organizational climate (OC) and individual factors (IF) are significantly positively associated with DKS ( $p < 0.05$ ). The Age of the teleworkers on the other hand, a criterion of the demographic variable is significantly positively associated with CP ( $p < 0.05$ ) (See Table 5).

Table 5: Ordinal regression analysis. Indicators for DKS and CP

Parameter Estimates						
		Equation 1		Equation 2		
		Estimate	Sig.		Estimate	Sig.
Threshold	[DKS = 1]	-3.970	0.049	[CP = 1]	-3.745	0.033
	[DKS = 2]	-2.315	0.242	[CP = 2]	-1.545	0.374
	[DKS = 3]	-0.504	0.799	[CP = 3]	-0.696	0.688
	[DKS = 4]	3.366	0.090	[CP = 4]	1.992	0.255
Location	OC	0.464	0.001	OC	-0.192	0.136
	IF	0.602	0.000	IF	-0.031	0.801
	Age	0.202	0.212	Age	0.368	0.012
	Gender	0.448	0.111	Gender	0.404	0.102
	Job title	-0.297	0.330	Job title	0.038	0.887
	Type of organiz.	-1.581	0.057	Type of organiz.	-0.780	0.281
	Specialty of organiz.	-0.108	0.088	Specialty of organiz.	0.026	0.642
Size of organiz.	-0.069	0.701	Size of organiz.	-0.13	0.411	

## 5. Discussion

Based on our findings, H1a is validated as the organizational climate (OC) scores a significant positive correlation with DKS, which conveys that an increasing usage of devices and tools as part of the organizational technical subsystem during COVID-19 lockdown, as well as more teleworkers' skills and knowledge foster a better DKS. This finding stands in consistency with previous results, notably in Tønnessen et al. (2021) and it is also in harmony with the findings of Al kurdi et al. (2020) study, where authors indicate a strong influence of the organizational climate on academics' knowledge sharing (KS) practices. Moreover, the proven association between OC and DKS is evidenced in Lee (2018) paper where the scholars demonstrate that suggest that the use of digital platforms for work information exchange is a key enabler for DKS in contemporary

corporations. Nevertheless, based on Cohen & Cromweel (2020) study's results, the organizational climate (OC) during COVID-19 pandemic scored a negative association on DKS due to the cybersecurity threats teleworkers faced and the difficulty in managing time and devices. H1b isn't supported since no statistical association is outlined between OC and knowledgeable employees' CP. This result postulates that a better OC doesn't necessarily enrich the creativity of employees while working from home. Our findings stand incongruous with Mutonyi et al. (2020) deduction, as authors considered the organizational climate as a pivotal aspect in employees' creative performance since it demonstrates a positive strong connection to the studied creative performance variables. Likely, Akinola et al. (2019) demonstrated in their research that employees' CP is observed as essential fosterer for organization innovation (OI) and thus, organizational work creativity, which stands incoherent with our result. Also, our finding conflicts with Chanana & Sangeeta (2020) who concluded that organizations implementation of the work from home practices, lead to employees staying motivated by learning new skills and self-improving, implying a positive correlation between OC and teleworkers' CP. H2a is supported as DKS is significantly associated with internal factors (IF), notably remote employees' stress and productivity highlighted in our study as internal detriments. This result suggests that more related work information and knowledge are exchanged digitally or online, levels of stress rise for employees and they become more productive in executing tasks while working remotely from home. Our evidences are coherent with prior research such like the proposed interpretation by Pennington (2021), which states that information communication technologies can induce stress and anxiety for the teleworkers since the established boundaries between their professional and private lives. In addition, prior literature has highlighted that COVID-19 global spread induced a collective trauma, increasing the level of stress for remote employees (Garfin et al., 2020). As a result, they tend to reach out to their co-workers or managers for more knowledge regarding the subject and for social support (Wang et al., 2021). Also, DKS is positively correlated with remote employees' productivity, confirming the findings of previous studies like the one conducted by Kianto et al. (2018). Yet, H2b is not accepted since no association between IF and teleworkers' CP is statistically proven, in contrast with Tang et al. (2020) conducted research; where work-related stress variable is studied as the determinant of teleworkers' perceived work ambiguity and insecurity during COVID-19. Hence, the authors have validated a positive association between work-related stress and teleworkers' work creativity, yet they demonstrated the relationship by using moderator parameters. Furthermore, according to Golden & Gajendran (2019), the creative performance of employees is significantly more relying on intrinsic enthusiasm than on their work sites, weighing IF more as influential detriment to teleworkers' CP, which contradicts our study's finding. Additionally, H3b is supported since age, a demographical factor is significantly associated with remote employees' creative performance (CP). This finding postulates that as teleworkers evolve in age, their creativity in performing work from home is enhanced, contradicting previous results like Belloti et al. (2021) 's findings, proposing that older workers express generally more pejorative misconceptions towards the experience of remote work. Besides age, the specialty of organization proves to be non-influential factor on knowledgeable workers' CP, incongruous with Cai et al. (2020) research's result where it has been heightened that ICT services and oriented firms and business settings are able to trigger and support employee creativity and performance. Finally, H3a is not accepted as none of the demographical detriments score positive association with DKS, which is congruous with Tønnessen et al., (2021) study results, where the authors indicate an insignificant association established between demographic variables and DKS. Other scholars have proposed demographical detriments evidenced to be associated with DKS: Romero et al. (2012) proved a positive moderate association found between internal DKS and age suggesting that teleworkers who are more advancedly aged have better internal DKS since they are better equipped with problem solving skills and more work experience than their younger fellow co-workers. Also, it has been found that gender is positively

associated with DKS as female teleworkers, when communicating in ‘technology’ or online communities, they tend to show and express positive emotions and participate in a proposed topic, more frequently than male participants who seek to provide information help only (Sun et al., 2020). Gibbs et al. (2021) evidenced within a study encompassing more than ten thousands skilled professionals working at a big sized IT company in Asia, that teleworkers in the IT domain have high internal DKS while working from home (WFH), concluding a positive association between teleworkers’ job title and DKS.

## 6. Conclusions

COVID-19 pandemic deteriorating impact on Lebanon has casted its shadow on Lebanese private firms and small businesses as they express severe economic qualms next to the weakened consumer demand according to many research analysts. Lebanese businesses are facing an array of challenges in order to provide a suitable working from home process and environment, this encounters technology and digital communications methods, shipment and customs delays along payment methods and other main obstacles to be studied and heightened. Understanding working remotely from home (WFH) practices within the COVID-19 pandemic frame differs from prior research where WFH was an optional substitute and not an enforced one such as the case in today’s situation. Hence, prior paper reviews didn’t shed the light on the outcomes of this type of working behavior, once imposed and not opted to. This elaborated study stands differently from prior ones since it aims to address the largely unexplored standpoints and gap in research. It discusses the working from home practices under these pressing circumstances, by examining its effects on a variety of knowledgeable workers, their work life and psychological factors. Also, with the WFH system imposed due to the COVID-19 pandemic, teleworkers have nobody to supervise them, this implies that the past theories on employees’ stress, motivation and productivity are to be re-questioned and updated.

In order to investigate the association between DKS and teleworkers’ CP along the contextual factors (organizational climate, individual factors and demographics), an online comprehensive survey of 248 Lebanese remote employees was conducted by asking a series of Likert scale questions covering digital knowledge sharing (DKS), creative performance (CP), demographics, individual and organizational detriments along working from home behavior practices.

The major findings of this study cover a significant association between the organizational climate and DKS from one hand and a drawn relationship between individual factors related to teleworkers’ stress, motivation and productivity, and DKS from another hand. Also, remote employees’ age is positively related to their creative performance. In effect, our paper delivers new evidences that contradict many theories: no correlation between knowledgeable workers’ creative performance (CP) and the stress factor is outlined, while prior research like Tang et al. (2020) approach suggests a positive correlation between work creativity and work-related stress. This suggests that it’s vital to develop new theoretical approaches specific for the working from home (WFH) context. In effect, in Saleem et al. (2021) current study, the stress factor was considered as work-related stress linked to COVID-19 variable designated as “COVID-19 STR”. Furthermore, one of the study’s major conclusions is the significant association between the digital knowledge sharing (DKS) and the organizational climate, specifically employees’ social ties, newly gained knowledge and skills as well the innovative climate, meeting with the social capital theory (SCT), which assists this research as theoretical lens. Hence, following SCT, the social relationships which existed prior to the coronavirus pandemic between the knowledgeable workers persist even after the plague, which means that the remote working practices didn’t affect these social ties. Thereby, SCT can be adopted for studies which tackles topics related to teleworking.

Additionally, this paper's results suggest that digital technology plays a pivotal role in affecting employees' digital knowledge sharing and therefore overall business performance as well. Hence, it is recommended that managers apply the necessary digital technology accompanied with an intensive training program. According to our conducted survey, employees who were familiar with the WFH work behavior prior to the lockdown period, didn't express high levels of stress while remotely working from home and didn't face difficulties to use the adopted technology like devices and applications that ease the flow of DKS. Teleworkers who demonstrate high digital skills are the most employees to have high DKS. Finally, this study provides further insights into remote working system's conditions and implementations. Managers are now urged to heighten and develop more the IT department due its beneficiary and vital role in ensuring both firm's performance and employees' engagement via the necessary adopted technology.

This study proves many limitations which constrain its efficacy and leading results. First, the collected responses of the conducted survey were based on convenience sampling. While this type of non-probability sampling is most useful and easy to undertake, it derives from an incapability to draw statistically significant deductions from obtained findings. Thence, by referring to this method, this research cannot be considered as a generalizable model and its results and conclusions cannot be adopted to reflect the entire Lebanese society. Also, this evaluation is limited methodologically as the developed research model doesn't encompass an assessment for the studied measurements taking into account time lapse periods to highlight cause and effect relationship, which is an additional and important area of exploration.

Further studies should focus more on the digital knowledge sharing (DKS), expand its dimensions to cover tacit and explicit DKS and draw comparative studies between knowledge sharing (KS) and DKS in order to conclude which is more efficient and beneficial to adopt for employees and organizations in today's corporate world, which is affected by the ongoing global crisis of COVID-19. Also, future approaches can heighten different contextual factors like the internet and technology's infrastructure as part of the organizational factors, as well as the employees' personality traits and cultural background which is underlined in the individual factors. It will be also interesting to evaluate the innovative performance (IP) of the knowledgeable workers rather than CP to further evaluate whether DKS and contextual components affect IP differently than it affects CP. Moreover, in future research concerning DKS, CP, IP, and contextual factors in the working from home (WFH) context, it's stimulating to emphasis the role of management and HR managers' heterogeneous standpoints towards remote working activities they encountered during the COVID-19 pandemic.

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