# Technology as a Source of Risk in Remote Work: Limitation, Challenges and Mitigation

Omran Al Matrooshi[1], Muaid Salami[1], Ali Bin Khadim[1], Mounir Elkhatib[2]

[1]*Graduate Business Management, Hamdan bin Mohamad Smart University, School of Business & Quality Management, Dubai. UAE*

[2]*Associate Professor, Hamdan bin Mohamad Smart University, School of Business & Quality Management, Dubai. UAE.*

| A R T I C L E   I N F O | A B S T R A C T |
|---|---|
| **Keywords:**<br>Remote work, Technologies, Challenges, limitations, mitigations<br><br>Received: Oct, 06, 2023<br>Accepted: Nov, 29, 2023<br>Published: Dec, 22, 2023 | Many factors led to the adoption of remote working in the work place. Existing technologies are identified and the readiness of organizations in the UAE to utilize them is assessed. The research combined a thorough literature review along with interviews and surveys from employees in the country's various public and private sectors. The findings reveal that most companies in the UAE did have the necessary technologies for adopting remote working in a highly efficient and effective way, with a limited impact on the productivity of employees but posing a higher risk of cyber security threats. After the pandemic, the majority of the findings reveal a hybrid system to be adopted in the UAE between working in the office and remotely due to the technological benefits and limited risks. |

## 1. INTRODUCTION

The COVID-19 pandemic was one of the latest catalysts in increasing the reliance on technological solutions across different aspects of everyday life (Khatatbeh et al., 2023). The utilization of digital innovation and technology transformed the way people work, adopting remote working methods and technological solutions for traditionally in-person activities (A. Al-Maroof et al., 2021; Battisti et al., 2022). An increase in the demand and market size of such virtual activities brought forth many new service providers in the growing market for remote working solutions; these range from adopting existing technologies to innovating newer ones to further expand the capabilities (Ng et al., 2022).

Appreciating the conveniences and efficiencies of technology is necessary, but the associated risks must also be considered (Russell and Frachtenberg, 2021) (Aljumah et al., 2020; Khatib

et al., 2022). Latest innovations have proven to provide innovative solutions and the pandemic accelerated the technological advancement and adoption (Kurdy et al., 2023). However, with more digital reliance comes a new set of threats that should be understood and correct mitigations considered. The focus of this study will be on the most widely adopted technological trends during the pandemic in the context of remote working, acknowledging their benefits but also evaluating the associated risks (Hackney et al., 2022; Nuseir et al., 2021). Additionally, the research will explore what leading organizations are doing and governmental policies in place to deal with the threats that the latest technologies pose.

### 1.1. Research Objective

The study will aim to achieve the following objectives:

1. Identify latest and most relevant technologies

adopted during the pandemic for remote working

2. Evaluate the opportunities and risks the high reliance on such technologies on employers and employees

3. Assess the needed measures to mitigate risks of such technologies

*1.2. Hypothesis*

The study will look at the developments and adoption of technologies and illustrate how innovations and digital solutions were helpful and what risks must be considered. What technologies became widely adopted because of the restrictions is addressed to formulate the following hypotheses:

1. Accelerated adoption of existing technologies prompted the innovation of new ones

2. The high adoption of technologies facilitating remote working transformed the nature of the workplace

3. Conveniences of technologies are exaggerated and leads to risks being overlooked

4. Lack of a robust mitigation of associated risks could lead to compromising security and quality of remote work productivity

## 2. LITERATURE REVIEW

Technology is naturally ever changing, with new innovations catering to solving problems or providing an improved, more cost-efficient ways of doing something (Urbaniec et al., 2022) (I. A. Akour et al., 2022; Al-Kassem et al., 2022). As technological developments cater to the latest external factors and addressing a need, there are unprecedented benefits and opportunities that arise with the adoption of these innovations (Al-Kassem et al., 2012; Aziz et al., 2023) (Tariq et al., 2022a). More often than not, these technologies would not have adequate testing in the implementation phase when widely adopted, which means there are associated risks with the technology that is not fully recognized (Alshawabkeh et al., 2021; Amiri et al., 2020; Khatib et al., 2023). Organizations adopting these technologies are considered risk takers (Abudaqa et al., 2021; El khatib et al., 2023b). These include hardware and software risks in the technology implemented, which could impact both the direct users and the wider community (H. M. Alzoubi et al., 2020; Blooshi et al., 2023; Nuseir and Elrefae,

2022). As more private and confidential information is being treated online, the security risks must be treated with the right protocols and measures in place (H. M. Alzoubi et al., 2022d; Nuseir and Aljumah, 2022).

In contrast, when an organization chooses to adopt a tested and applied technology, it is labelled risk avoider or risk averse (Muhammad Turki Alshurideh et al., 2022b; El Khatib et al., 2021a). Comparatively the same concept is applied to investors (Aityassine et al., 2022; Al-Kassem, 2014; Almasaeid et al., 2022). A risk averse investor is prone to only consider a guaranteed payment to his investment (Alhamad et al., 2021; Farrukh et al., 2023).

Technology is a ubiquitous term that is used in a multitude of situations and for countless devices and software (Tariq et al., 2022b). For the purpose of the research, technology refers to the increased adoption of existing and emerging software and hardware that are deemed necessary, specifically in the context of facilitating remote work (Al-Kassem, 2017; M. M. El Khatib et al., 2023; Louzi et al., 2022a).

Hacking, identity theft and data manipulation are some of the external risks that are associated with higher reliance on technological solutions (M T Alshurideh et al., 2022; T M Ghazal et al., 2023b; Yasir et al., 2022). It is particularly true due to the lack of international consensus and practices by governments in setting consistent and global laws regarding cyber activities (Nadzri et al., 2023). Technologies often involve hardware equipment as well, from computers to smart gadgets and servers, which are susceptible to crashes, theft and damage (I. Akour et al., 2022; El Khatib et al., 2021b; Mohammed T. Nuseir et al., 2022). Any compromise in the hardware can disrupt business continuity and the ability of the users relying on the technology to achieve their responsibilities; therefore (Akour et al., 2023; El Khatib et al., 2019), the quality and durability of the hardware plays an important role in optimizing the benefits of the technology (M. T. Alshurideh et al., 2023d; H. M. Alzoubi et al., 2022f; M. El Khatib et al., 2023d).

One of the critical aspects that organizations of all economic sectors had to balance is between business continuity and not exposing employees to risk (Ahmed et al., 2022; Al-Maroof et al., 2022b). The idea of remote working is not a new one, but was not widely adopted; this changed with the

pandemic, as various technologies became highly instrumental in the ability of employees to work from the safety of their homes (M. Alshurideh et al., 2023)(Bawaneh et al., 2023; M. El Khatib et al., 2023e). While this is not true for all job roles, many corporate roles continued using audio visual solutions to replace physical meetings, and a higher reliance on virtual communication to share files (H. M. Alzoubi et al., 2022e; M. El Khatib et al., 2021) (M Alshurideh et al., 2022). In the case of the UAE, the government rapidly reacted to the pandemic by ensuring the telecommunications infrastructure of the country was ready for accommodating to remote working across different economic segments (M. El Khatib et al., 2023g; Nuseir and Aljumah, 2020). Working from home, or remotely, was also instated in the governmental sector of the UAE, especially for vulnerable populations such as the elderly and pregnant women (Aljumah et al., 2023; Gaytan et al., 2023; E. Khatib et al., 2021) (Elkhatib, M., Al Hosani, A., Al Hosani, I., & Albuflasa, 2022).

The UAE's network industry is the fastest of the region, with exponential growth in Internet penetration and digitization of industries (El khatib et al., 2023a; Louzi et al., 2022b; Nuseir, 2021), sectors and processes (Al-Kassem et al., 2013). Governmental readiness to handle the high capacity of technological activity both within the country and abroad in connection to the country's network is crucial to ensure a seamless and safe experience for users (Alzoubi et al., 2019; Nuseira and Aljumahb, 2020).

The Computer Emergency Readiness Team has therefore become one of the crucial entities in safeguarding the data in the country (Kassem and Martinez, 2022), ensuring the servers, networks and the backend security of the digital information minimizes the chances of any risks to compromise them (A I Aljumah et al., 2022a; Alzoubi and Ahmed, 2019) (R. S. Al-Maroof et al., 2021a). This entity works closely with over governmental agencies to have a proactive approach in improving online activities, identifying room for improvement and identify any hardware or software risks that could compromise data integrity and security (M. T. Alshurideh et al., 2023c) (M. Alzoubi et al., 2021; Mubeen et al., 2022).

Dubai's successful global positioning as a destination of choice for innovation, tourism and business is facilitated by the high extent of digitization the emirate offers, providing efficient solutions for processes and dynamic experiences (Al-Awamleh et al., 2022; Arshad et al., 2023; M. El Khatib et al., 2023h). This was further enforced by the pandemic, where companies shifted from physical processes to a highly digitized way, utilizing audio-visual solutions such as Zoom, MS Teams and other online platforms (Abudaqa et al., 2022; Ahmad Ibrahim Aljumah et al., 2022b; Lee et al., 2023b).

To have a secure technological infrastructure, the top-down approach of clarifying what the government facilitates versus the limitations of use within the country is necessary [62], [63]. Dubai government has established a standard information security policy that makes it clear of what constitutes as a violation and lists the guidelines of what online activity is permitted or not (M. T. Alshurideh et al., 2023a; Nuseir et al., 2020). This provides an elaborate list of what users must do to protect their online activities (H. Alzoubi et al., 2022; M T Nuseir et al., 2022a).

Remote working was made possible due to existing technologies, albeit not being optimizing to the current extent prior to the pandemic (A I Aljumah et al., 2022b; El Khatib et al., 2022; Lee et al., 2023a). The adoption of virtual meetings, and providing employees with a sense of flexibility in the working environment brought forth many conveniences, with or without the COVID-19 related risks, and broke through technological barriers that were not thought possible (Al-Maroof et al., 2022a) (H. M. Alzoubi et al., 2022b). A tech-driven approach in continuing operations across numerous industries was accelerated by the pandemic, but brought with it many risks that must be considered (Ahmed and Nabeel Al Amiri, 2022; R. S. Al-Maroof et al., 2021b; Muhammad Turki Alshurideh et al., 2022a; H. M. Alzoubi et al., 2022c; El Khatib and Ahmed, 2018). While the initial reaction was to speed up the process of adopting technological solutions for remote working (Aljumah et al., 2021a; T M Ghazal et al., 2023a), the witnessed shift is not sustainable and needs to consider the risks that have not been evaluated thoroughly yet (Akour et al., 2021; H. M. Alzoubi et al., 2022g; M. El Khatib et al., 2023b). One of the core prerequisites is for organizations and communities as a whole to have the right IT infrastructure that facilitates the right network speed (Aljumah et al., 2021b), reliability and

availability of hardware for employees to utilize technological solutions (Al-Dmour et al., 2023; Mat Som and Kassem, 2013).

Some of the key risks that occurred with the rise of remote working is the security of the data that is being shared, the reliability of the hardware used (H. Alzoubi et al., 2020; M. El Khatib et al., 2023a; Hani Al-Kassem, 2021; Sakkthivel et al., 2022), the productivity of the employees and the line of sight that management no longer have on their employee's performance (H. M. Alzoubi et al., 2022h; El Khatib et al., 2020; Gulseven and Ahmed, 2022; Nuseir, 2020). Reliance on technological solutions was helpful as an immediate reaction to the pandemic (H. M. Alzoubi et al., 2022a; M. El Khatib et al., 2023f; M T Nuseir et al., 2022b), but untested technologies in terms of their privacy security, reliance of operation and the quality of output by employees should be considered (Muhammad Alshurideh et al., 2022; El Khatib and Ahmed, 2020).

## 3. METHODOLOGY

A combined research methodology is adopted to link the findings from theories and studies already conducted about the topic with first-hand data gathering. The primary research will comprise of a series of questionnaires (see appendix 1) with employees and employers in the UAE that rely on remote working technologies. Interviews (see appendix 2) will also be conducted with senior staff of various background and authority in organizations within the UAE to identify the benefits and risks they face since the adoption of remote working technologies. The secondary research will be conducted by a thorough literature review from credible publications that address the latest technologies that emerged and helped in addition to addressing their benefits and risks.

## 4. EMPIRICAL ANALYSIS

### 4.1. Quantitative Results

The quantitative survey was completed by 51 respondents in the form of a questionnaire, where the participants were given the choice of not answering questions they did not want to do so. The survey began with questions to get a general understanding of the demographics and professional specialization of the participants to ensure they are in the UAE and working in a diverse range of industries and economic sectors. The latter questions address the perception of the respondents towards remote working and ask them for their opinions and experiences with remote working.

The majority of the participants at 62.7% were men. Also, the breakdown in the following question in regards to nationality illustrates a much higher portion of the participants being Emirati, with 23.5% non-Emirati respondents. A split of the different emirates in which the respondents work shown in the graph below reveals 58.8% in Dubai as the highest, followed by Abu Dhabi and then Sharjah
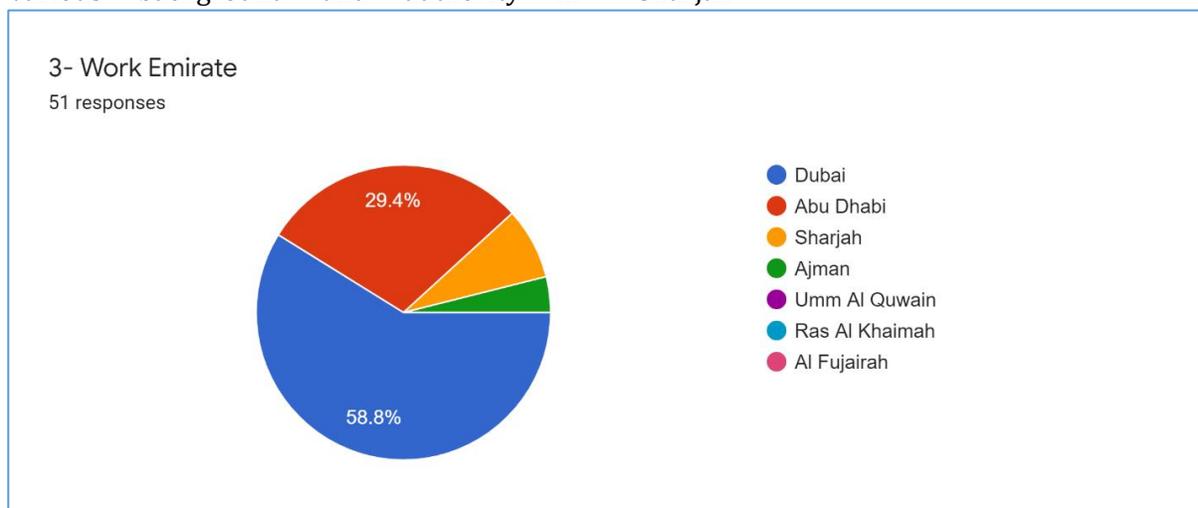


Figure (1)

The professional industries were broadly split into the private and governmental sectors, and of the 51 respondents, 68.6% worked in the governmental entities while 31.4% work in the private sector. The following question was aimed to understand the diversity of the different organizations, with 41

people choosing to respond. The most participants from a given entity were 4 survey takers working in Dubai Statistics Authority, followed by 3 in Du. Drilling down deeper into the nature of work the

participants do revealed a very diverse range among the participants as can be seen in the below chart, with the highest being in the IT field at 14.6%
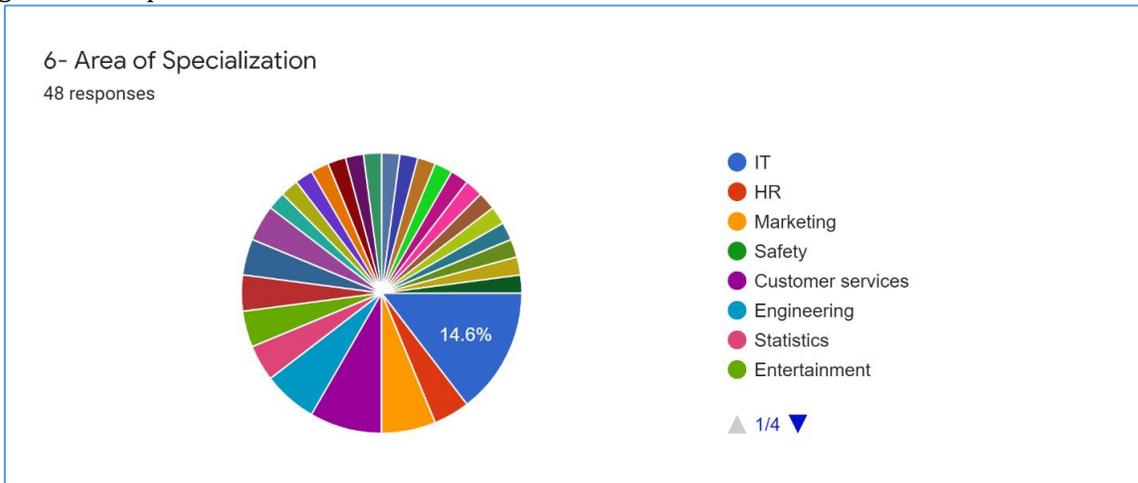


Figure (2)

When asking is the COVID-19 pandemic affected how the organization they worked in functioned, 78% said yes. Relating the effects of the pandemic on the organization, the question of whether their organization responded with the right tools and procedures to mitigate the situation, 84.3% agreed, 13.7% somewhat agreed and 2% disagreed.

The survey goes on to ask what the respondents preferred as their modes of working after the recovery of the pandemic, the below pie chart illustrates that the majority at 72.5% chose a blend of remote working and in-office, while 17.6% preferred working completely remotely and the lowest mode of choice was in the office at 9.8%
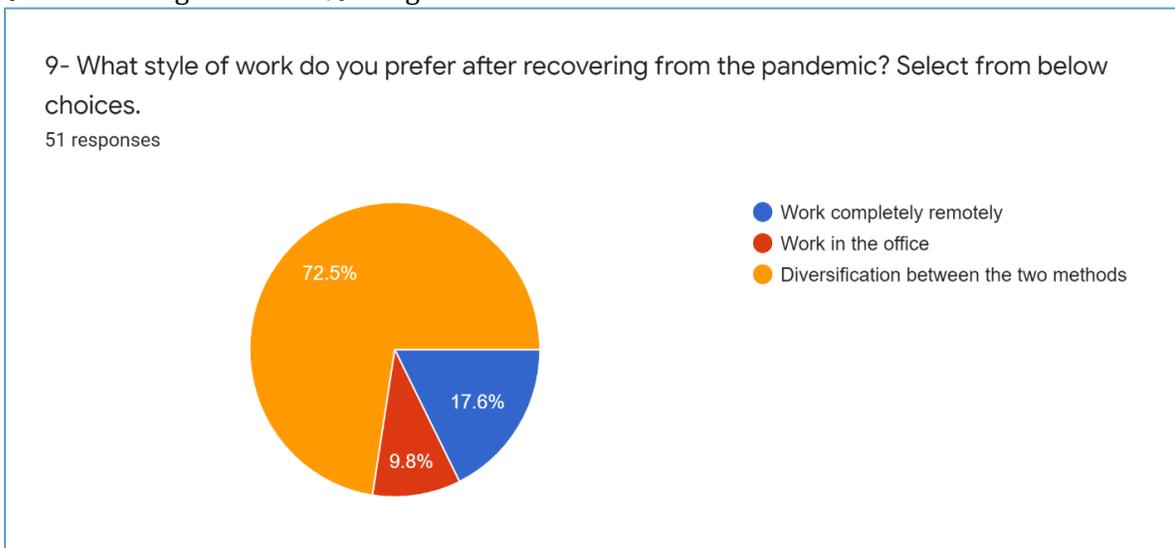


Figure (3)

There are different technologies that organizations adopted during the pandemic, and question 10 reveals that in the case of the UAE, the most common form of adoption was in VPN technology by 31 of the 49 responses, followed by communication technology, content management systems and electronic identity verification. The

level of readiness for the organizations and their ability to react in a timely and prompt manner to the pandemic were the focus of the following questions. 82.4% of the participants viewed their organization well equipped to have the necessary technologies for remote working, and the remaining 17.6% somewhat agreed with no

participants disagreeing. In regards to the investment in new technologies, the below graph portrays the split with the 88.2% of the participants either agreeing or somewhat agreeing that the organizations they work in have bought and incorporated new systems and tools to facilitate remote working.
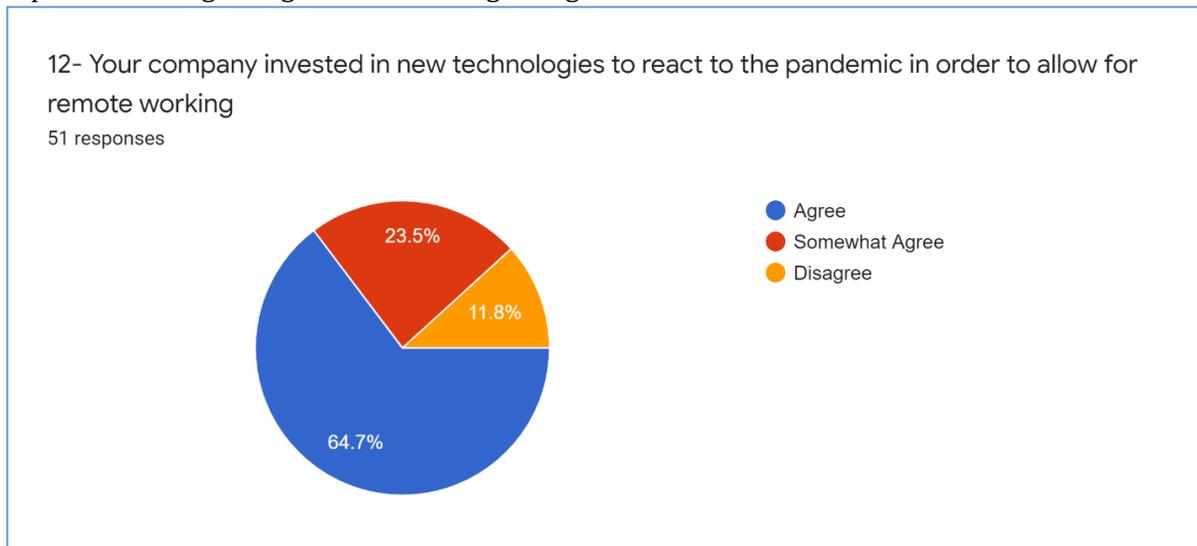


Figure (4)

With the technology being integrated, the survey addresses how proficient the employees were in using them. The following questions illustrates that 71.4% strongly agreed all the employees in the company were well versed in using the adopted technologies, while 20.4% somewhat agreed and 8.2% disagreed. Further, as the focus is on remote working, the following question was whether working remotely is more convenient than going to an office, and the split of the 51 responses below shows that only 15.7% did not agree.
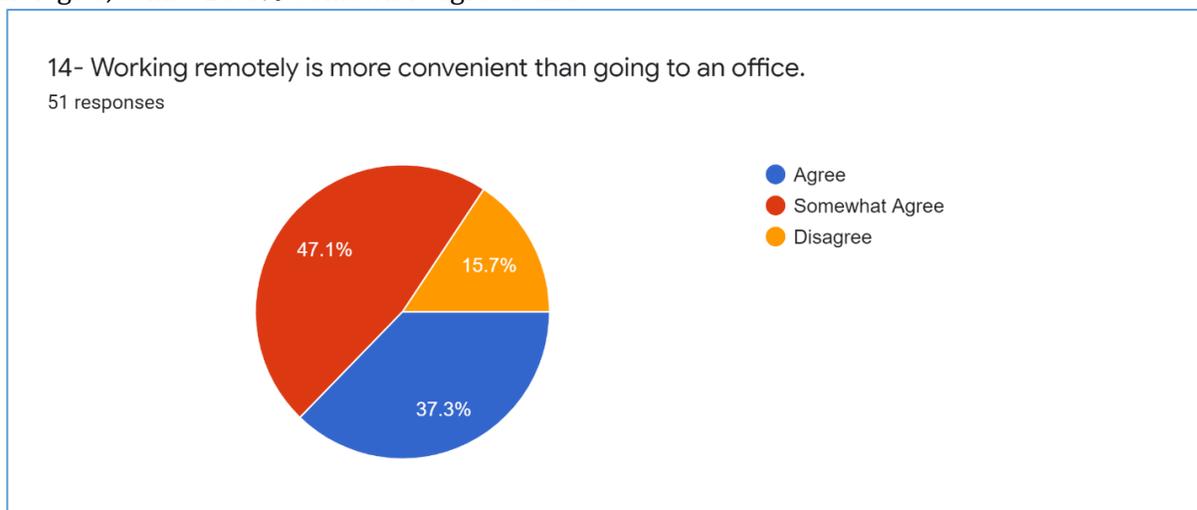


Figure (5)

Interestingly, while 62.8% of the responses for Question 14 thought working remotely is more convenient, over 66% of the participants believed that working remotely compromises with the quality of work as shown in the graph below.

**15- Working remotely compromised the quality of work of employees**
51 responses

- Agree
- Somewhat Agree
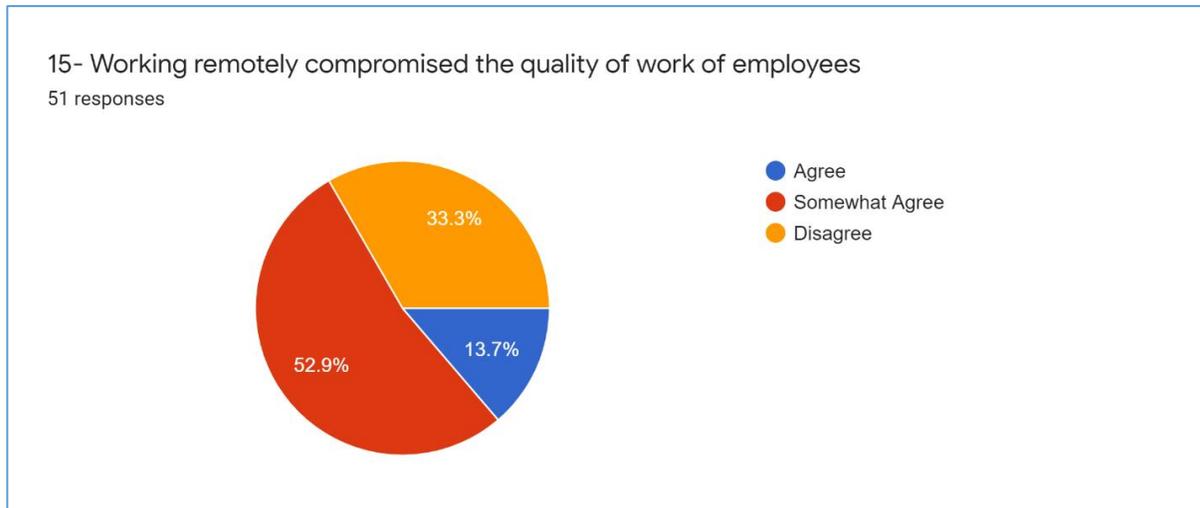- Disagree

33.3%
52.9%
13.7%

Figure (6)

Addressing the role of technology, Question 16 asks if technology replaced the need for employees to go to the office, with the highest portion being unsure (somewhat agree) at 45.1%, followed by 41.2% agreeing and 13.7% disagreeing with this role for technology. Moreover, the survey addresses the risks that come with high reliance on technology, and the responses for Question 17 below show that the overwhelming majority either agree or somewhat agree with only 7.8% not thinking there are any risks.

**17- There are risks associated with the high reliance on technologies**
51 responses

- Agree
- Somewhat Agree
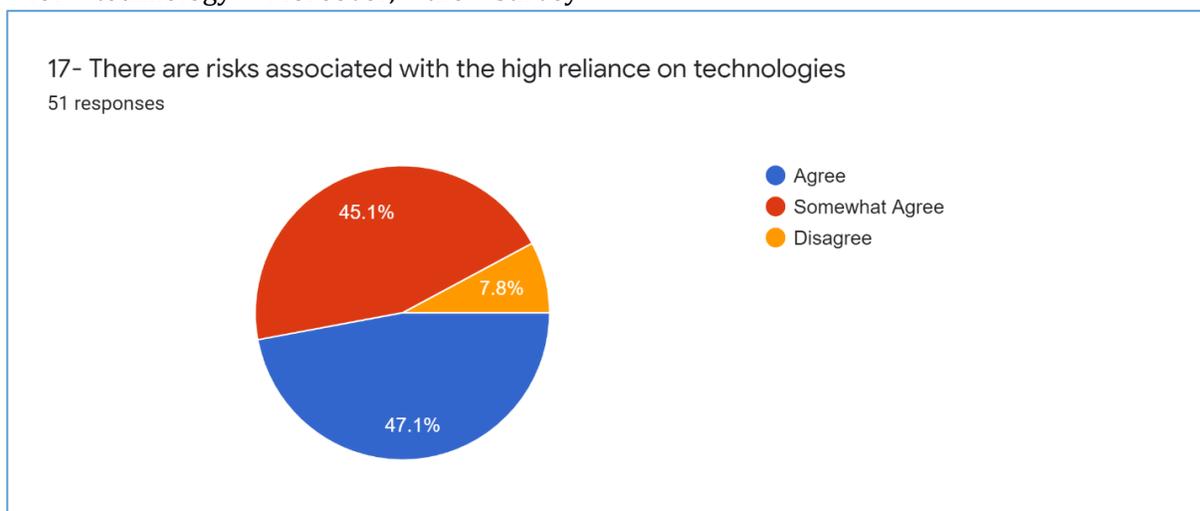- Disagree

45.1%
7.8%
47.1%

Figure (7)

When asked about the type of risks and opportunities that remote working and technological reliance have, 23 of the 51 responses mentioned the difficulty of being able to separate work and private life. The second most common risk is data leakage at 45.1% of the responses, and the loss of the workplace being a risk identified by 19 of the survey takers. The opportunities identified in this is to organize meetings in an easier way, which was mentioned in 14 of the answers and to achieve more tasks in a convenient manner, which was mentioned by 15 participants.

Asking about other risks included answers such as the high reliance on network connections that could severely compromise the ability to achieve the tasks.

The below chart provides a snapshot of the main responses on how participants perceive responding to identified risks. The most common is to provide employees with technical and professional training on how to make the most of the technologies at hand for effective remote working.

Figure (8)

## 4.2. Qualitative Results

Qualitative data, on the other hand, was gathered in the form of semi-structured interviews of professionals working in various economic sectors of the UAE. A total of 12 participants completed the interview. Their answers provided insight on the different ways their organizations dealt with the swift transition to remote working and the associated risks that the change brought with it.

Working remotely meant reducing the size of the organizational operations, putting non-urgent jobs on hold and for a lower number of employees to be in offices. The result was the majority of the employees were asked to work from home and to integrate technologies for the employees to be able to continue their responsibilities without going to the office. Most of the respondents stated that they already had the technologies, but the extent of usage was rapidly increased; one interviewee explained how the organization provided laptops instead of PCs and had to install VPNs in them to allow for uninterrupted video conferencing. Nearly all of the participants in the interview stated that audio-visual tools such as Zoom, Google Meet and MS Teams were the principle technology that was used more than when they worked from offices to conduct online meetings. When asked if technology proved to be helpful for remote working, all of the 12 interviewees agreed, with the most common reasons being uninterrupted meetings, convenient solution for communicating with colleagues and clients and saving time instead of having to commute for physical meetings.

There are risks associated with the heavy reliance on technology; the interview responses indicate the most common risks were in the increased threat of cyber security, data leakage and the stability of the VPN connection. Corporate or operational concerns with the reliance of technology were the increased expectation of deliverables by the management, often overworking employees. The follow-up question addressed whether there was a compromise in the quality of work by the team because of a higher dependence on technological tools for day-to-day tasks and remote working conditions (M. T. Alshurideh et al., 2023b). Most participants disagreed with a drop in productivity or efficiency, stating that the technology was helpful in speeding otherwise tedious paperwork and approvals. The remote working conditions also save time and resources for tasks to be completed; however, one respondent stated that the remote working environment allowed some employees to take advantage of not being monitored and work fewer hours.

## 5. RESULTS ANALYSIS

The research illustrated the necessity of adopting technologies in the way that organizations adapted and transform their modes of operation to have higher degree of remote working. The reliance on technologies in the UAE were largely in the form of adopting audio-visual programs and VPN technologies to replace physical meetings with virtual ones. The results illustrated how the majority found this a necessary and beneficial transition, where remote-working methods provided unprecedented degrees of convenience. Saving on time and resources in delivering on

duties and responsibilities is a key reason for the high acceptance rate of remote working. As the survey suggested, the majority of people prefer having the flexibility of working remotely. This is largely due to the ability to have higher degree of autonomy without compromising on the quality of work done. The interview results confirm that employees did not feel the shift towards remote working has negatively limited or impacted the quality of work, because the technological tools have provided a direct replacement to otherwise time-consuming methods.

Another interesting outcome of the study was to see the discrepancy in the findings of the survey, where respondents were more likely to agree that their companies have invested in new technologies to meet the requirements of remote-working during the pandemic, while most of the interviewees stated the organization already have the relevant technologies to make the transition. This can fall under a balanced risk or risk neutral approach which illustrates on one hand, the organization is a risk taker, ready to take the lead and invest in new technology, and the other a risk avoider which will only adopt the technology with tested and guaranteed results (AlDhaheri et al., 2023; M. El Khatib et al., 2023c; Taher M. Ghazal et al., 2023). Additionally, these results could be due

to the high rate of participants in the survey being in the IT department of their respective companies, who are more privacy to the specific software upgrades or new digital tools the company had to subscribe to and install on the laptops of the employees.

While technology has a multitude of benefits in facilitating remote working, there are more pressing risks that have been identified. Interestingly, more of the survey responses indicated the rising threat of cyber security and the fear of data leakage. With higher reliance on online communication and sharing data outside of the company intranet ecosystem, there is naturally a higher risk of external breach. Although the technology largely adopted to facilitate remote working is not necessarily new, the volume of data being uploaded, shared and consumed through these platforms have hit an unprecedented rate, making them a particularly appealing target for malicious activity (Ahmad Ibrahim Aljumah et al., 2022a; Khan et al., 2022). This reveals that the interviewees' organizations have had some degree of risk tolerance. In a sense, they are acknowledging the risk and weighted the possibility of attacks that comes with the adoption of remote working.

### 5.1. Risk Probability and Impact Matrix
*The following table illustrates the key risks and their mitigation responses with a weighted score to their impact and value.*

**Table 1**

| Risk ID | Risk | Probability/ Likelihood | Impact/ Severity | Value | Risk Level | Risk response/ Mitigation Action |
|---|---|---|---|---|---|---|
| 1 | Hard to separate Work and personal life | 3 | 3 | 9 | High | That the organizations adopt a set of laws and practices that encourage employees to balance work and personal life, such 1 Make schedule remote work time 2 Stay away from sitting at your home office on vacation |

| 2 | Human Resources Management | 3 | 3 | 9 | High | Placing mechanisms to ensure quality of work and performance remaine constant while remote working. And Link appreciation and rewards to achievement, not time |
| --- | --- | --- | --- | --- | --- | --- |
| 3 | Data Leakage | 2 | 3 | 6 | High | Firewall and security protocols on all servers and machines |
| 4 | Hacking | 1 | 3 | 3 | Meduim | Firewall and security protocols on all servers and machines |
| 5 | Hardware malfunctioning | 1 | 2 | 2 | Low | Extended warranty on all devices and timely maintenance/service |
| 6 | Loss of workplace | 2 | 1 | 2 | Low | Providing all the technical tools that allow the employee access to needed resources at different locations in the organization, while not forgetting the social aspect |



Figure (9)

## 6. RECOMMENDATIONS & CONCLUSION

The technological tools that allowed for a quick and effective transition to remote working has proven to be instrumental across many organizations globally and especially in the UAE. For organizations that did not have the right tools, software and technological infrastructure, the research illustrates that they were able to adapt swiftly with minimal interruption to business continuity. The hypothesis of COVID-19's role in accelerating the adoption of technologies that exist is confirmed by the study, but there were little

findings on the innovation of new ones in relation to remote working. Also, the second hypothesis is also confirmed, where the majority of the employees saw the benefits of working remotely, which has transformed the nature of the workplace. Primary and secondary results show the overwhelming praise of technology, with a lack of robust studies or considerations in regards to the risks of high reliance on the newly adopted tools. Therefore, the risks must be acknowledged in order to have the right mitigation measures in place. It is recommended that, despite the urgency of adopting technologies, there is a need for potential risks in regards to data leakage, security breach and even productivity measurement of employees in remote working are evaluated and the organization has the right safety and security steps taken. Another recommendation is that, additional efforts be applied in evaluating risk tolerance prior to adopting new and existing technologies. More research and analysis need to be made on the different risks that materialized with the shift to remote working to illustrate the medium-to-long term consequences, and if this style of working conditions will remain as the new norm.

## REFERENCES

Abudaqa, A., Alzahmi, R.A., Almujaini, H., Ahmed, G., 2022. Does innovation moderate the relationship between digital facilitators, digital transformation strategies and overall performance of SMEs of UAE? Int. J. Entrep. Ventur. 14, 330–350.

Abudaqa, A., Hilmi, M.F., Almujaini, H., Alzahmi, R.A., Ahmed, G., 2021. Students' perception of e-Learning during the Covid Pandemic: a fresh evidence from United Arab Emirates (UAE). J. E-Learning Knowl. Soc. 17, 110–118.

Ahmed, G., Abudaqa, A., Jayachandran, C., Limbu, Y., Alzahmi, R., 2022. Nation Branding as a Strategic Approach for Emerging Economies: The Case of UAE, in: Marketing Communications and Brand Development in Emerging Economies. Springer, pp. 41–57.

Ahmed, G., Nabeel Al Amiri, 2022. the Transformational Leadership of the Founding Leaders of the United Arab Emirates: Sheikh Zayed Bin Sultan Al Nahyan and Sheikh Rashid Bin Saeed Al Maktoum. Int. J. Technol. Innov. Manag. 2, 1.

Aityassine, F., Soumadi, M., Aldiabat, B., Al-Shorman, H., Akour, I., Alshurideh, M., Al-Hawary, S., 2022. The effect of supply chain resilience on supply chain performance of chemical industrial companies. Uncertain Supply Chain Manag. 10, 1271–1278.

Akour, I., Alnazzawi, N., Alshurideh, M., Almaiah, M.A., Al Kurdi, B., Alfaisal, R.M., Salloum, S., 2022. A Conceptual Model for Investigating the Effect of Privacy Concerns on E-Commerce Adoption: A Study on United Arab Emirates Consumers. Electron. 11, 3648.

Akour, I., Alshurideh, M., Al Kurdi, B., Al Ali, A., Salloum, S., 2021. Using Machine Learning Algorithms to Predict People's Intention to Use Mobile Learning Platforms During the COVID-19 Pandemic: Machine Learning Approach. JMIR Med. Educ. 7, 1–17.

Akour, I., Rahamneh, A.A.L., Al Kurdi, B., Alhamad, A., Al-Makhariz, I., Alshurideh, M., Al-Hawary, S., 2023. Using the Canonical Correlation Analysis Method to Study Students' Levels in Face-to-Face and Online Education in Jordan. Inf. Sci. Lett. 12, 901–910.

Akour, I.A., Al-Maroof, R.S., Alfaisal, R., Salloum, S.A., 2022. A conceptual framework for determining metaverse adoption in higher institutions of gulf area: An empirical study using hybrid SEM-ANN approach. Comput. Educ. Artif. Intell. 3, 2.

Al-Awamleh, H.K., Alhalalmeh, M.I., Alatyat, Z.A., Saraireh, S., Akour, I., Alneimat, S., Alathamneh, F.F., Abu-Farha, Y.S., Al-Hawary, S.I.S., 2022. The effect of green supply chain on sustainability: Evidence from the pharmaceutical industry. Uncertain Supply Chain Manag. 10, 1261–1270.

Al-Dmour, N.A., Ali, L., Salahat, M., Alshurideh, M., Alzoubi, H.M., Ghazal, T.M., Chabani, Z., 2023. Information Systems Solutions for the Database Problems. Stud. Comput. Intell. 2023, 703–715.

Al-Kassem, A., Bakri, A., In'airat, M., 2013. Evaluation Tools of Total Quality Management in Business Organizations. Eur. J. Bus. Manag. 5, 41–51.

Al-Kassem, A.H., 2017. Recruitment and Selection Practices in Business Process Outsourcing Industry. Arch. Bus. Res. 5, 40–52.

Al-Kassem, A.H., Aguenza, B.B., Alghurabli, Z.E., 2022. Accreditation of Academic Programs : Implications on Quality Governance and Administrationof Taguig City University. J. Posit. Sch. Psychol. 6, 3908–3923.

Al-Kassem, Aguenza, B.B., Hami, A., Som, A.P.M., 2012. Social Media and Productivity in the Workplace: Challenges and Constraints. Interdiscip. J. Res. Bus. 2, 22–26.

Al-Kassem, H., 2014. Determinants of employee's overall satisfaction toward training and development programs. Int. J. Econ. Financ. Manag. 3, 129–135.

Al-Maroof, A., Salloum, A., Al-Maroof, R.S., Akour, I., Aljanada, R., Alfaisal, A.M., Alfaisal, R.M., Aburayya, A., Salloum, S.A., 2021. Acceptance determinants of 5G services Title Acceptance determinants of 5G services International Journal of Data and Network Science Acceptance determinants of 5G services. Canada. Int. J. Data Netw. Sci. 5, 613–628.

Al-Maroof, R.S., Alahbabi, N.M.N., Akour, I., Alhumaid, K., Ayoubi, K., Alnnaimi, M., Thabit, S., Alfaisal, R., Aburayya, A., Salloum, S., 2022a. Students' perception towards behavioral intention of audio and video teaching styles: An acceptance study. Int. J. Data Netw. Sci. 6, 603–618.

Al-Maroof, R.S., Alhumaid, K., Akour, I., Salloum, S., 2021a. Factors that affect e-learning platforms after the spread of covid-19: Post acceptance study. Data 6.

Al-Maroof, R.S., Alnazzawi, N., Akour, I., Ayoubi, K., Alhumaid, K., Nasser, N.M., Alaraimi, S., Al-Bulushi, A.A., Thabit, S., Alfaisal, R., Aburayya, A., Salloum, S., 2022b. Students'

perception towards using electronic feedback after the pandemic: Post-acceptance study. Int. J. Data Netw. Sci. 6, 1233–1248.

Al-Maroof, R.S., Alnazzawi, N., Akour, I.A., Ayoubi, K., Alhumaid, K., Alahbabi, N.M., Alnnaimi, M., Thabit, S., Alfaisal, R., Aburayya, A., Salloum, S., 2021b. The effectiveness of online platforms after the pandemic: Will face-to-face classes affect students' perception of their behavioural intention (BIU) to use online platforms? Informatics 8, 4.

AlDhaheri, H., Hilmi, M.F., Abudaqa, A., Alzahmi, R.A., Ahmed, G., 2023. The relationship between HRM practices, innovation, and employee productivity in UAE public sector: a structural equation modelling approach. Int. J. Process Manag. Benchmarking 13, 157–176.

Alhamad, A.Q.M., Akour, I., Alshurideh, M., Al-Hamad, A.Q., Kurdi, B. Al, Alzoubi, H., 2021. Predicting the intention to use google glass: A comparative approach using machine learning models and PLS-SEM. Int. J. Data Netw. Sci. 5, 311–320.

Aljumah, A., Nuseir, M., Refae, G., 2023. Examining the effect of social media interaction, E-WOM, and public relations: Assessing the mediating role of brand awareness. Int. J. Data Netw. Sci. 7, 467–476.

Aljumah, A., Nuseir, M.T., Islam, A., 2020. Impacts of service quality, satisfaction and trust on the loyalty of foreign patients in Malaysian medical tourism. International journal of innovation. Creat. Chang. 11, 451–467.

Aljumah, A.I., Nuseir, M.T., Alam, M.M., 2021a. Traditional marketing analytics, big data analytics and big data system quality and the success of new product development. Bus. Process Manag. J. 27, 1108–1125.

Aljumah, A.I., Nuseir, M.T., Alam, M.M., 2021b. Organizational performance and capabilities to analyze big data: do the ambidexterity and business value of big data analytics matter? Bus. Process Manag. J. 27, 1088–1107.

Aljumah, A I, Nuseir, M.T., El Refae, G.A., 2022a. Exploring the Effect of Social Media Marketing and Destination image on Destination Loyalty in Covid-19 Times: Sequential Mediating Role of Brand Love and Brand Loyalty, in: In 2022 International Arab Conference on Information Technology (ACIT). IEEE, pp. 1–8.

Aljumah, A I, Nuseir, M.T., El Refae, G.A., 2022b. Business Analytics and Competitive Advantage for SMEs in UAE: A Mediating Role of Technology Assets, in: In 2022 International Arab Conference on Information Technology (ACIT). IEEE, pp. 1–9.

Aljumah, Ahmad Ibrahim, Nuseir, M.T., El Refae, G.A., 2022a. The effect of sensory marketing factors on customer loyalty during Covid 19: Exploring the mediating role of customer satisfaction. Int. J. Data Netw. Sci. 6, 1359–1368.

Aljumah, Ahmad Ibrahim, Shahroor, H., Nuseir, M.T., El Refae, G.A., 2022b. The effects of employee commitment and environment uncertainty on product quality: The mediating role of supply chain integration. Uncertain Supply Chain Manag. 10, 1379–1386.

Almasaeid, T., Alzoubi, H., El Khatib, M., Ghazal, T., Alshurideh, M., Al-Dmour, N., Sattar, O., Ae, 2022. Futuristic Design & Development of Learning Management System including Psychological Factors Resolution. J. Reatt. Ther. Dev. Divers. 5, 176–188.

Alshawabkeh, A., Nuseir, M.T., Aljumah, A., 2021. Impacts of social media on the buying intention of the consumers in Edinburgh, UK. Int. J. Procure. Manag. 14, 470–486.

Alshurideh, M., Al Kurdi, B.H., Alzoubi, H.M., Salloum, S., 2023. The Effect of Information Technology on Business and Marketing Intelligence Systems. Springer Nature.

Alshurideh, Muhammad, Almasaeid, T., El Khatib, M., Alzoubi, H., Ghazal, T., Hamadneh, S., Al-Dmour, N., Sattar, O., 2022. Components Determining the Behavior and Psychological impact of Entrepreneurship among Higher Vocational Students. J. Reatt. Ther. Dev. Divers. 5, 189–200.

Alshurideh, M, Alzoubi, H., Alshurideh, M., Kurdi, B., Obeidat, B., Hamadneh, S., Ahmad, A., 2022. The influence of supply chain partners' integrations on organizational performance: The moderating role of trust. Uncertain Supply Chain Manag. 10, 1191–1202.

Alshurideh, M.T., Al-Hadrami, A., Alquqa, E.K., Alzoubi, H.M., Hamadneh, S., Al Kurdi, B., 2023a. The effect of lean and agile operations strategy on improving order-winners: Empirical evidence from the UAE food service industry. Uncertain Supply Chain Manag. 11, 87–94.

Alshurideh, M.T., Al Kurdi, B., Alhamad, A., Hamadneh, S., Alzoubi, H.M., Ahmad, A., 2023b. Does social customer relationship management (SCRM) affect customers' happiness and retention? A service perspective. Uncertain Supply Chain Manag. 11, 277–288.

Alshurideh, M.T., Alquqa, E.K., Alzoubi, H.M., Al Kurdi, B., Alhamad, A., 2023c. The impact of cyber resilience and robustness on supply chain performance: Evidence from the UAE chemical industry. Uncertain Supply Chain Manag. 11, 187–194.

Alshurideh, M.T., Alquqa, E.K., Alzoubi, H.M., Al Kurdi, B., Hamadneh, S., 2023d. The effect of information security on e-supply chain in the UAE logistics and distribution industry. Uncertain Supply Chain Manag. 11, 145–152.

Alshurideh, Muhammad Turki, Alzoubi, H.M., El khatib, M., Ghazal, T.M., Al-Dmour, N.A., Sattar, O., Kukunuru, S., 2022a. An Experimental Evaluation on Resource Attribute, Internal Risks and Regime Structure of R&D Association-Including Exploration of Moderating Effect of Association Management Capability, Psychological. J. Reatt. Ther. Dev. Divers. 5, 201–215.

Alshurideh, M T, Alzoubi, H.M., Ghazal, T.M., Alami, R., Al Masaeid, T., 2022. Risk Management Model for Telecom Enterprises Based on Variables (RM, SO, RC, SI) with Nature, Sense and Positive Psychology Hypothesis. J. Reatt. Ther. Dev. Divers. 2022, 5.

Alshurideh, Muhammad Turki, Obeidat, B.Y., Victoria, V., Alzoubi, H.M., Fatima, A., Ilyas, A., Rustam, I., 2022b. A Systematic Literature Review of Security in 5G based Social Networks, in: International Conference on Cyber Resilience, ICCR 2022. ICCR 2022, 2022.

Alzoubi, H., Ahmed, G., 2019. Do TQM practices improve organisational success? A case study of electronics industry in the UAE. Int. J. Econ. Bus. Res. 17, 459–472.

Alzoubi, H., Alshurideh, M., Gasaymeh, A., Ahmed, G., Kurd, B. Al, 2020. Loyalty program effectiveness: Theoretical reviews and practical proofs. Uncertain Supply Chain Manag. 8, 599–612.

Alzoubi, H., Alshurideh, M., Kurdi, B. Al, Akour, I., Aziz, R., 2022. Does BLE technology contribute towards improving

marketing strategies, customers' satisfaction and loyalty? The role of open innovation. Int. J. Data Netw. Sci. 6, 449–460.

Alzoubi, H.M., Ahmed, G., Al-Gasaymeh, A., Al Kurdi, B., 2020. Empirical study on sustainable supply chain strategies and its impact on competitive priorities: The mediating role of supply chain collaboration. Manag. Sci. Lett. 10, 703–708.

Alzoubi, H.M., Ahmed, G., Alshurideh, M., 2022a. An empirical investigation into the impact of product quality dimensions on improving the order-winners and customer satisfaction. Int. J. Product. Qual. Manag. 36, 169–186.

Alzoubi, H.M., Alshurideh, M., Kurdi, B. Al, Akour, I., Obeidat, B., Alhamad, A., 2022b. The role of digital marketing channels on consumer buying decisions through eWOM in the Jordanian markets. Int. J. Data Netw. Sci. 6, 1175–1185.

Alzoubi, H.M., Alshurideh, M.T., Al Kurdi, B., Ghazal, T.M., Said, R.A., AlHamad, A.Q., Hamadneh, S., Sahawneh, N., Al-kassem, A.H., 2022c. Fuzzy assisted human resource management for supply chain management issues. Ann. Oper. Res. 2, 617–629.

Alzoubi, H.M., Ghazal, T.M., El khatib, M., Alshurideh, M.T., Alami, R., Al Masaeid, T., 2022d. Creation of Indicator System for Quality Estimation of Safety Management of Personnel and it's Psychological impact on Industrial Enterprises. J. Reatt. Ther. Dev. Divers. 5, 143–151.

Alzoubi, H.M., In'airat, M., Ahmed, G., 2022e. Investigating the impact of total quality management practices and Six Sigma processes to enhance the quality and reduce the cost of quality: the case of Dubai. Int. J. Bus. Excell. 27, 94–109.

Alzoubi, H.M., Kurdi, B. Al, Akour, I., Alshurideh, M.T., 2022f. The effect of blockchain and smart inventory system on supply chain performance: Empirical evidence from retail industry. Uncertain Supply Chain Manag. 10, 1111–1116.

Alzoubi, H.M., Kurdi, B. Al, Alshurideh, M., Akour, I., Tariq, E., Alhamad, A., 2022g. The effect of social media influencers' characteristics on consumer intention and attitude toward Keto products purchase intention. Int. J. Data Netw. Sci. 6, 1135–1146.

Alzoubi, H.M., Mehmood, T., Alshurideh, M., Al-Gasaymeh, A., Ahmed, G., 2019. Schumpeterian entrepreneurship theory: Evolution and relevance. Acad. Entrep. J. 25, 1–10.

Alzoubi, H.M., Sahawneh, N., Alhamad, A.Q., Ghazal., T.M., Malik, U., Majid, A., Atta, A., 2022h. Analysis Of Cost Prediction In Medical Insurance Using Modern Regression Models, in: International Conference on Cyber Resilience, ICCR 2022. ICCR 2022, 2022.

Amiri, N. Al, Rahim, R.E.A., Ahmed, G., 2020. Leadership styles and organizational knowledge management activities: A systematic review. Gadjah Mada Int. J. Bus. 22, 250–275.

Arshad, M., Brohi, M., Soomro, T., Ghazal, T., Alzoubi, H., Alshurideh, M., 2023. NoSQL: Future of BigData Analytics Characteristics and Comparison with RDBMS. pp. 1927–1951.

Aziz, A., Brohi, M.N., Soomro, T.R., Alzoubi, H.M., Ghazal, T.M., Alshurideh, M., 2023. Aircraft Turnaround Manager (ATM): A Solution to Airport Operations. Stud. Comput.

Intell. 2023, 679–702.

Battisti, E., Alfiero, S., Leonidou, E., 2022. Remote working and digital transformation during the COVID-19 pandemic: Economic-financial impacts and psychological drivers for employees. J. Bus. Res. 150, 38–50.

Bawaneh, A., Massadeh, D., Akour, I., Abu haija, A., Alshurideh, M., 2023. The Impact of Green Auditing on Organizational Performance in Jordan: the Moderating Effect of the Auditor's Opinion. Inf. Sci. Lett. 12, 1505–1512.

Blooshi, I., Alamim, A., Said, R., Taleb, N., Ghazal, T., Ahmad, M., Alzoubi, H., Alshurideh, M., 2023. IT Governance and Control: Mitigation and Disaster Preparedness of Organizations in the UAE. pp. 661–677.

El Khatib, M., Ahmed, G., Alshurideh, M., Al-Nakeeb, A., 2023a. Interdependencies and Integration of Smart Buildings and Smart Cities: A Case of Dubai, in: Alshurideh, M., Hikmat, A.K.B., Masa'deh, R., M., A.H., Salloum, S. (Eds.), The Effect of Information Technology on Business and Marketing Intelligence Systems. Springer International Publishing, Cham, pp. 1637–1656.

El Khatib, M., Al Qurashi, F., Al Brieki, S., 2021a. Challenges of Design and Implementation of Program Governance &lt;br/&gt;—Cases from Government Bodies in UAE. Am. J. Ind. Bus. Manag. 11, 566–581.

El Khatib, M., Alabdooli, K., AlKaabi, A., Al Harmoodi, S., 2020. Sustainable Project Management: Trends and Alignment. Theor. Econ. Lett. 10, 1276–1291.

El Khatib, M., Alnaqbi, Ahmed, Alnaqbi, Abdulla, Alsuwaidi, H., Marri, M., Ankit, A., 2023b. Implementing IOT in Effective Project Management. Int. J. Comput. Their Appl. 30, 192–200.

El Khatib, M., Alzoubi, H., Hamidi, S., Alshurideh, M., Baydoun, A., Al-Nakeeb, A., 2023c. Impact of Using the Internet of Medical Things on e-Healthcare Performance: Blockchain Assist in Improving Smart Contract. Clinicoecon. Outcomes Res. 2023, 397–411.

El khatib, M., Beshwari, F., Beshwari, M., Beshwari, A., Alzoubi, H.M., Alshurideh, M., 2023a. Covid19 Unknown Risks---Using AI for Disaster Recovery, in: Alshurideh, M., Hikmat, A.K.B., Masa'deh, R., M., A.H., Salloum, S. (Eds.), The Effect of Information Technology on Business and Marketing Intelligence Systems. Springer International Publishing, Cham, pp. 2113–2137.

El Khatib, M., Beshwari, F., Beshwari, M., Beshwari, A., Alzoubi, H.M., Alshurideh, M., 2023d. Can Better Capabilities Lead to Better Project and Program Governance? Cases from Dubai, in: Alshurideh, M., Hikmat, A.K.B., Masa'deh, R., M., A.H., Salloum, S. (Eds.), The Effect of Information Technology on Business and Marketing Intelligence Systems. Springer International Publishing, Cham, pp. 1295–1313.

El Khatib, M., Hamidi, S., Ameeri, I., Zaabi, H., Marqab, R., 2022. Digital Disruption and Big Data in Healthcare - Opportunities and Challenges. Clin. Outcomes Res. 14, 563–574.

El Khatib, M., Ibrahim, A., Blooshi, S., Almansoori, S., El Khatib, A., 2023e. Digital Transformation and Disruptive Technologies: Effect of 3D Printing on Managing Projects. pp. 1–13.

El Khatib, M., Khadim, S., Ketbi, W., Kuwaiti, N., El Khatib, A., 2023f. Digital Transformation and Disruptive

Technologies: Effect of Blockchain on Managing Construction Projects. pp. 1–9.

El Khatib, M., Khayat, A., Mansoori, S., Alzaabi, A., Ankit, A., 2023g. Metaverse Skills for Executives and Senior Managers: The Pros and Cons. pp. 1–7.

El khatib, M., Mahmood, A., Al Azizi, A., Al Marzooqi, A., Al Abdooli, K., Al Marzooqi, S., Al Jasmi, S., Alzoubi, H.M., Alshurideh, M., 2023b. A Trial to Improve Program Management in Government Bodies Through Focusing on Program Resource Management: Cases from UAE, in: Alshurideh, M., Hikmat, A.K.B., Masa'deh, R., M., A.H., Salloum, S. (Eds.), The Effect of Information Technology on Business and Marketing Intelligence Systems. Springer International Publishing, Cham, pp. 1315–1340.

El Khatib, M., Yaish, A., Ali, H., 2021b. Implementation Challenges of Data Quality Management -Cases from UAE Public Sector. iBusiness 13, 144–153.

El Khatib, M., Zitar, R., Alnaqbi, K., Alnaqbi, W., Alharmoodi, S., Baydoun, A., 2023h. Effect of Big Data and Analytics on Managing Projects. Int. J. Comput. Their Appl. 30, 173–182.

El Khatib, M.M., Abidi, N., Al-Nakeeb, A., Alshurideh, M., Ahmed, G., 2023. Dubai Smart City as a Knowledge Based Economy, in: Alshurideh, M., Hikmat, A.K.B., Masa'deh, R., M., A.H., Salloum, S. (Eds.), The Effect of Information Technology on Business and Marketing Intelligence Systems. Springer International Publishing, Cham, pp. 1657–1672.

El Khatib, M.M., Ahmed, G., 2020. Robotic pharmacies potential and limitations of artificial intelligence: A case study. Int. J. Bus. Innov. Res. 23, 298–312.

El Khatib, M.M., Ahmed, G., 2018. Improving Efficiency in IBM Asset Management Software System "Maximo": A Case Study of Dubai Airports and Abu Dhabi National Energy Company. Theor. Econ. Lett. 08, 1816–1829.

El Khatib, M.M., Al-Nakeeb, A., Ahmed, G., 2019. Integration of Cloud Computing with Artificial Intelligence and Its Impact on Telecom Sector—A Case Study. iBusiness 11, 1–10.

Elkhatib, M., Al Hosani, A., Al Hosani, I., & Albuflasa, K., 2022. Agile Project Management and Project Risks Improvements: Pros and Cons. Mod. Econ. 13, 1157–1176.

Farrukh, M., Soomro, T.R., Ghazal, T.M., Alzoubi, H.M., Alshurideh, M., 2023. Perspectives of Online Education in Pakistan: Post-covid Scenario, in: The Effect of Information Technology on Business and Marketing Intelligence Systems. Springer, pp. 519–550.

Gaytan, J.C.T., Rafiuddin, A., Sisodia, G.S., Ahmed, G., Paramaiah, C., 2023. Pass-through Effects of Oil Prices on LATAM Emerging Stocks before and during COVID-19: An Evidence from a Wavelet -VAR Analysis. Int. J. Energy Econ. Policy 13, 529–543.

Ghazal, T M, Al-Dmour, N.A., Said, R.A., Moubayed, A., Ali, L., Alzoubi, H.M., Alshurideh, M., 2023a. DDoS Intrusion Detection with Ensemble Stream Mining for IoT Smart Sensing Devices. Stud. Comput. Intell. 2023, 1987–2012.

Ghazal, Taher M, Hasan, M.K., Ahmad, M., Alzoubi, H.M., Alshurideh, M., 2023. Machine Learning Approaches for Sustainable Cities Using Internet of Things. Stud. Comput. Intell. 2023, 1969–1986.

Ghazal, T M, Hasan, M.K., Alzoubi, H.M., Alshurideh, M., Ahmad, M., Akbar, S.S., 2023b. Internet of Things Connected Wireless Sensor Networks for Smart Cities. Stud. Comput. Intell. 2023, 1953–1968.

Gulseven, O., Ahmed, G., 2022. The State of Life on Land (SDG 15) in the United Arab Emirates. Int. J. Soc. Ecol. Sustain. Dev. 13, 1–15.

Hackney, A., Yung, M., Somasundram, K.G., Nowrouzi-Kia, B., Oakman, J., Yazdani, A., 2022. Working in the digital economy: A systematic review of the impact of work from home arrangements on personal and organizational performance and productivity. PLoS One 17.

Hani Al-Kassem, A., 2021. Significance of Human Resources Training and Development on Organizational Achievement. PalArch's J. Archaeol. Egypt / Egyptol. 18, 693–707.

Kassem, A., Martinez, E.B., 2022. Operationalization of Negosyo Center as an Entrepreneurial Strategy to Selected Micro, Small, and Medium Enterprises in Taguig City. Glob. Bus. Manag. Res. 14, 88–104.

Khan, A., Hasana, M.K., Ghazal, T.M., Islam, S., Alzoubi, H.M., Mokhtar, U.A., Alam, R., Ahmad, M., 2022. Collaborative Learning Assessment via Information and Communication Technology, in: Proceedings - 2022 RIVF International Conference on Computing and Communication Technologies, RIVF 2022. RIVF 2022, 2022, pp. 311–316.

Khatatbeh, I.N., Alshurafat, H., Shbail, M.O. Al, Jamaani, F., 2023. Factors Affecting Employees Use and Acceptance of Remote Working During the COVID-19 Pandemic: Evidence From the Jordanian Insurance Sector. SAGE Open 13, 21582440231181390.

Khatib, E., M., Z., A., R., Al-Nakeeb, A., 2021. The effect of AI on project and risk management in health care industry projects in the United Arab Emirates (UAE). Int. J. Appl. Eng. Res. 6, 1.

Khatib, M. El, Alzoubi, H.M., Mulla, A. Al, Ketbi, W. Al, 2022. The Role of Blockchain in E-Governance and Decision-Making in Project and Program Management. Adv. Internet Things 12, 88–109.

Khatib, M. El, Beshwari, F., Beshwari, M., Beshwari, A., 2021. The impact of blockchain on project management. ICIC Express Lett. 15, 467–474.

Khatib, M. El, Shehhi, H. Al, Nuaimi, M. Al, 2023. How Big Data and Big Data Analytics Mediate Organizational Risk Management. J. Financ. Risk Manag. 12, 1–14.

Kurdy, D.M., Al-Malkawi, H.-A.N., Rizwan, S., 2023. The impact of remote working on employee productivity during COVID-19 in the UAE: the moderating role of job level. J. Bus. Socio-economic Dev. 3, 339–352.

Lee, K.L., Nawanir, G., Cheng, J., Alzoubi, H., Alshurideh, M., 2023a. Educational Supply Chain Management: A View on Professional Development Success in Malaysia. pp. 2473–2490.

Lee, K.L., Wong, S., Alzoubi, H., Al Kurdi, B., Alshurideh, M., El Khatib, M., 2023b. Adopting smart supply chain and smart technologies to improve operational performance in manufacturing industry. Int. J. Eng. Bus. Manag. 15, 1–14.

Louzi, N., Alzoubi, H.M., Alshurideh, M.T., El khatib, M., Ghazal, T.M., Kukunuru, S., 2022a. Psychological & Prototypical

Model of Execution Management evaluation for the framework Development. J. Reatt. Ther. Dev. Divers. 5, 216–223.

Louzi, N., Alzoubi, H.M., El Khatib, M., Ghazal, T.M., Alshurideh, M., Kukunuru, S., 2022b. Psychological Health and Environmental Effect of using Green Recycled Amassed Concrete on Construction. J. Reatt. Ther. Dev. Divers. 5, 163–175.

M. Alzoubi, H., Ghazal, T., Hasan, M., Alshurideh, M., Ahmad, M., Akbar, S., Al Kurdi, B., Akour, I., 2021. IoT for Smart Cities: Machine Learning Approaches in Smart Healthcare-A Review. Futur. Internet 13, 218.

Mat Som, A.P., Kassem, H. Al, 2013. Domestic Tourism Development in Asir Region, Saudi Arabia. J. Tour. Hosp. 02.

Mubeen, S., Shahid, M.H., Sahawneh, N., Al-Kassem, A.H., Ahmad, A., Naseer, I., 2022. Education, Employment and Women Empowerment in an Agrarian Economy: A Case Study. pp. 1–9.

Nadzri, W., Hashim, A., Majid, M., Jalil, N., Alzoubi, H., Alshurideh, M., 2023. Share Your Beautiful Journey: Investigating User Generated Content (UGC) and Webrooming Among Malaysian Online Shoppers. pp. 2265–2285.

Ng, P.M.L., Lit, K.K., Cheung, C.T.Y., 2022. Remote work as a new normal? The technology-organization-environment (TOE) context. Technol. Soc. 70, 102022.

Nuseir, M., Elrefae, G., 2022. The effects of facilitating conditions. Cust. Exp. Brand Loyal. Cust. Brand equity through Soc. media Mark. 6, 875–884.

Nuseir, M.T., 2021. Assessing the impact of brand equity and customer experience on brand loyalty in the United Arab Emirates' hotel industry. Int. J. Bus. Excell. 25, 459–473.

Nuseir, M.T., 2020. Potential impacts of blockchain technology on business practices of bricks and mortar (B&M) grocery stores. Bus. Process Manag. J. 27, 1256–1274.

Nuseir, M.T., Aljumah, A., 2022. The impact of entrepreneur orientation on sustainable entrepreneurship among SMEs in the UAE: mediating effects of the sustainability orientation and bricolage behaviours of entrepreneurs. Int. J. Trade Glob. Mark. 16, 250–264.

Nuseir, M.T., Aljumah, A., 2020. The role of digital marketing in business performance with the moderating effect of environment factors among SMEs of UAE. Int. J. Innov. Creat. Chang. 310–324.

Nuseir, Mohammed T., Aljumah, A.I., El-Refae, G.A., 2022. Digital marketing and public relations: A way to promote public relations value. Int. J. Data Netw. Sci. 6, 1331–1340.

Nuseir, M T, Aljumah, A.I., El Refae, G.A., 2022a. The Influence of E-Iearning M-learning, in: And D-Learning on the Student Performance: Moderating Role of Institutional Support. In 2022 International Arab Conference on Information Technology (ACIT) . IEEE, pp. 1–9.

Nuseir, M T, Aljumah, A.I., El Refae, G.A., 2022b. Trust in Adoption of Internet of Things: Role of Perceived Ease of Use and Security, in: In 2022 International Arab Conference on Information Technology (ACIT). IEEE, pp. 1–7.

Nuseir, M.T., Basheer, M.F., Aljumah, A., 2020. Antecedents of entrepreneurial intentions in smart city of Neom Saudi

Arabia: Does the entrepreneurial education on artificial intelligence matter? Cogent Bus. Manag. 7.

Nuseir, M.T., El-Refae, G.A., Aljumah, A., 2021. The e-Learning of Students and University's Brand Image (Post COVID-19): How Successfully Al-Ain University Have Embraced the Paradigm Shift in Digital Learning, Studies in Systems, Decision and Control. Springer International Publishing.

Nuseira, M.T., Aljumahb, A., 2020. Digital marketing adoption influenced by relative advantage and competitive industry: a UAE tourism case study. Int. J. Innov. Creat. Chang. 2020, 617–631.

Russell, A., Frachtenberg, E., 2021. Worlds Apart: Technology, Remote Work, and Equity. Computer (Long. Beach. Calif). 54, 46–56.

Sakkthivel, A.M., Ahmed, G., Amponsah, C.T., Muuka, G.N., 2022. The influence of price and brand on the purchasing intensions of Arab women: an empirical study. Int. J. Bus. Innov. Res. 28, 141–161.

Tariq, E., Alshurideh, M., Akour, I., Al-Hawary, S., 2022a. The effect of digital marketing capabilities on organizational ambidexterity of the information technology sector. Int. J. Data Netw. Sci. 6, 401–408.

Tariq, E., Alshurideh, M., Akour, I., Al-Hawary, S., Kurdi, B. Al, 2022b. The role of digital marketing, CSR policy and green marketing in brand development. Int. J. Data Netw. Sci. 6, 995–1004.

Urbaniec, M., Małkowska, A., Włodarkiewicz-Klimek, H., 2022. The Impact of Technological Developments on Remote Working: Insights from the Polish Managers&rsquo; Perspective. Sustainability 14.

Yasir, A., Ahmad, A., Abbas, S., Inairat, M., Al-Kassem, A.H., Rasool, A., 2022. How Artificial Intelligence Is Promoting Financial Inclusion? A Study On Barriers Of Financial Inclusion, in: 2022 International Conference on Business Analytics for Technology and Security (ICBATS). pp. 1–6.

**Appendix**

**Appendix 1 – Questionnaire**

*Technology may improve quality of life, but it may also be a source of risks. Especially, in COVID-19 pandemic time. Many new technologies or wide adoption of existing technologies appeared, primarily in the field of remote working.*

**Section 1: General Information**

1- Gender
- Male
- Female

2- Nationality
- Emirati
- Non Emirati

3- Work Emirate
- Dubai
- Abu Dhabi
- Sharjah
- Ajman
- Umm Al Quwain
- Ras Al Khaimah
- Al Fujairah

4- Work sector
- Government sector
- Private sector

5- Establishment Name

Your answer

6- Area of Specialization
- IT
- HR
- Marketing
- Safety
- Customer services
- Other:

7- Has the Covid19 pandemic affected the mechanism, method of work and service delivery in your organization?
- Yes
- No

8- In your opinion, has your organization responded to these influences and made/provide the necessary procedures/tools and adjustments to coexist with the current situation?
- Agree
- Somewhat Agree
- Disagree

9- What style of work do you prefer after recovering from the pandemic? Select from below choices.
- Work completely remotely
- Work in the office
- Diversification between the two methods

10- What technologies did your company adopt during the pandemic?
- VPN Technology
- Communication Technology
- Electronic identity verification
- Content Management Systems
- Other:

11- Your company already had the necessary technological infrastructure to accommodate for remote working
- Agree
- Somewhat Agree
- Disagree

12- Your company invested in new technologies to react to the pandemic in order to allow for remote working
- Agree
- Somewhat Agree
- Disagree

13- All employees in your company were well versed in using the adopted technologies
- Agree
- Somewhat Agree
- Disagree

**Section 2 – Personal Views**

14- Working remotely is more convenient than going to an office.
- Agree
- Somewhat Agree
- Disagree

15- Working remotely compromised the quality of work of employees
- Agree
- Somewhat Agree
- Disagree

16- Technology replaced the need for employees to go to the office
- Agree
- Somewhat Agree
- Disagree

17- There are risks associated with the high reliance on technologies
- Agree
- Somewhat Agree
- Disagree

18- What are the risks (Threats and opportunities) associated with working remotely?
- Loss of workplace
- Data leakage
- Difficulty to managing time
- Hard to separate your work and personal life
- Ease of organizing meetings
- Greater achievement of tasks
- Other:

19- How do you think it is possible to respond to these risks?
- Investing in information technology that serves remote work
- Setting legislations that serve the expansion of remote work
- Providing technical and professional training related to the quality of remote work
- Linking rewards to achievement rather than some other factors such as commitment to working hours
- Other:

20- What other risks or opportunities did technology yield with remote working?
Your answer

## Appendix 2 – Interview

*Technology may improve quality of life, but it may also be a source of risks. Especially, in COVID-19 pandemic time. Many new technologies or wide adoption of existing technologies appeared, primarily in the field of remote working.*

### Section 1: General Information

1- Gender
- Male
- Female

2- Nationality
- Emirati
- Non Emirati

3- Work Emirate
- Dubai
- Abu Dhabi
- Sharjah
- Ajman
- Umm Al Quwain
- Ras Al Khaimah
- Al Fujairah

4- Work sector
- Government sector
- Private sector

5- Establishment Name

Your answer

6- Area of Specialization
- IT
- HR
- Marketing
- Safety
- Customer services
- Other:

### Section 2 – Interview

1- How did your company react to the pandemic and the lockdown? What types of changes did it immediately apply in response to the situation?

Your answer

2- What technologies did the company apply that was not used before?

Your answer

3- Did you find the technology to be useful? If so, how?

Your answer

4- What risks, if any, did you experience with the reliance on technology for remote working?

Your answer

5- Did the remote working approach compromise the quality of work of the team? If so, how?

Your answer