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Exploring the viability of remote work for SME

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ABSTRACT

Purpose: This study aims to identify and examine the relevance of implementing remote work by small and medium-sized enterprise (SME) business operators during the post-COVID-19 era in developing nations.

Design/methodology/approach: The study utilised a qualitative methodology, conducting interviews with twenty SME businesses, including business leaders and management level employees. It explores the challenges faced by these operators in maintaining remote work and its impact on their business operations. Data was analysed and compiled using ATLAS.ti software.

Findings: The findings indicate that not all SME are capable of sustaining remote working environments. The nature of the business plays a crucial role in providing flexibility to employees in their operations. There are also weaknesses in remote work security that need to be addressed, as they can potentially impact business operations and performance.

Research limitations/implications: The implications of the pandemic on business operations, regardless of size, are significant globally. This study sheds light on the challenges faced by SME in implementing remote work and its feasibility in the post-COVID-19 period.

Originality/value: The content of this paper is based on information, observations, and discussions with SME operators on how COVID-19 has compelled their businesses to adapt to the changing environment. Previously, there was no urgency for businesses to embrace remote work operations, but the pandemic has forced them to adopt such measures.

Introduction

The COVID-19 pandemic has caused significant disruptions in the global political, commercial, and economic landscape (Karabag, 2020; Siebold et al., 2023). Post-pandemic, the virus has affected millions of people worldwide, resulting in numerous deaths and necessitating the implementation of restrictions and lockdowns by governments (Karabag, 2020; Fairlie and Fossen, 2021; Ibadunni et al., 2022; Worldometer, 2022). Industries, particularly the airline and tourism sectors, have been severely impacted by the crisis (Gössling et al., 2020). Extensive research has focused on examining the effects of the pandemic on small and medium-sized enterprises (SME), with many businesses experiencing significant disruptions and closures (Cepel et al., 2020; Fitriyani, 2020; Kalemli-Ozcan et al., 2020).

SME owners are known for their innovation and agility in transforming their business operations to adapt to changing circumstances

(Marques and Ferreira, 2009; Skordoulis et al., 2020; Cadden et al., 2023; Donbesuur et al., 2023; Evers et al., 2023; Zulu-Chisanga et al., 2023). They play a crucial role in driving economic growth and development, as their specialised business concepts cater to the needs of consumers (Marques and Ferreira, 2009). SME generate new opportunities that can be scaled up, making a significant contribution to the overall economy. For instance, in Africa, SME account for more than 50% of the GDP and provide an average of 60% employment opportunities to residents (Muriithi, 2017). Therefore, SME are vital to the economic development of any nation and have a profound impact on gross domestic product (GDP) growth (Organisation for Economic Co-operation and Development, 2015).

Operations and performance of SME have been significantly impacted by government-imposed restrictions, disrupting their revenue and bottom line. Many SME were compelled to either innovate or scale down their operations in response to these challenges (Pu et al., 2021;

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Okuwhere and Tafamel, 2022). As a result, some businesses turned to technological transformation to adapt their day-to-day operations (Yun et al., 2020b; Andrikopoulos, 2021). This shift has brought the concept of remote working environments to the forefront, enabling employees to work from home and affecting organisational performance. With the increasing acceptance and success of vaccination efforts, the world is gradually transitioning back to its pre-pandemic economic environment. It is crucial to investigate whether business owners will embrace this new working culture adopting a dynamic approach or revert to their previous operational methods (Yun et al., 2020a). This study aims to explore the challenges, impact, viability, and feasibility of continuing remote work processes for SME business operators.

The Malaysian small and medium enterprises

Malaysian small and medium enterprises (SME) accounted for approximately \$120 billion USD of the country's gross domestic product (GDP), representing 38.2% of the overall national GDP (Department of Statistics Malaysia, 2021). In the early 2000 s, SME in Malaysia played a significant role in the country's vibrant economy across various industries such as manufacturing, textiles, food and beverages, metal products, and wood products, offering substantial employment opportunities (Saleh and Ndubisi, 2006). SME hold a crucial position in developing countries, as highlighted by the Organisation for Economic Co-operation and Development (OECD), which states that SME contribute approximately 33% of national income and 44% of employment in these countries (Organisation for Economic Co-operation and Development, 2017). The significance of ensuring the sustainability of SME should not be underestimated, given their substantial contributions to the social and economic landscape of these developing nations.

Problem statement

Remote work, also known as distance working or working from home, refers to the practice of employees engaging in work outside of their designated work area using designated equipment and agreed-upon terms with their employer (Bailey and Kurland, 1999). Over the years, the acceptance of remote work has been a matter of debate. Many employers and business owners have been hesitant to adopt this operational context, primarily due to concerns about its impact on productivity (Popovici and Popovici, 2020). With less oversight and limited face-to-face communication between employees and supervisors, there are perceived challenges in managing remote work arrangements (Campbell, 2015).

Research on remote work has highlighted the influence of different working conditions at home on worker productivity (Neufeld and Fang, 2005). The COVID-19 pandemic forced businesses to find ways to continue operations while ensuring the safety of their employees, leading many business owners to explore remote work as a viable solution for maintaining business continuity (Barrett et al., 2021). This has sparked growing interest in researching the feasibility and impact of remote work on businesses and employees (Brynjolfsson et al., 2020; Popovici and Popovici, 2020; Yang et al., 2022). The relevance of this study lies in investigating the feasibility and impact of remote work specifically for SME. It presents an opportunity to gain insights into how SME have adopted, utilised, or disregarded remote work policies in their organisations. Additionally, the study can explore how SME that have not previously utilised remote work have implemented work-from-home operations.

Overall, this research aims to contribute valuable insights and information on remote work practices within the context of SME, shedding light on its feasibility and potential impact on business operations.

Theory

Theories associated with remote work can vary depending on the

specific approach taken. One theory commonly used to study individual performance in remote work is self-efficacy theory, which explains employees' expected behaviour in executing their assigned tasks (Staples et al., 1999). Self-efficacy theory is particularly relevant in contexts where employees are given autonomy in how they carry out their work. In the handbook of research on remote work and workers' well-being in the Post-COVID-19 Era, various theories are explored to understand the factors contributing to the success and development of remote work (Wheatley et al., 2021). These theories include determination theory, dialogical self-theory, communication theory, and others, all aimed at investigating the impact and effectiveness of remote work. Communication theory, for example, examines the role of technology in facilitating communication between individuals, electronic devices, and organisations. Some studies have adopted a grounded theory approach to capture employees' experiences and challenges with remote work (Wang et al., 2021). Self-efficacy theory relates to remote work by influencing individuals' confidence and abilities to adapt to a remote work environment, affecting aspects such as technology use, time management, communication, and overall job satisfaction. Employers and leaders can leverage this theory to support and empower remote workers.

Studies in China although considers itself as a borderline developing and developed nation, had examined the effect of SME operator's self-efficacy relations to remote work (Wan and Wang, 2018). The study had found in their survey were that companies were found to be more creative in their business. Studies in Mexico had also examined the impact of knowledge and technology on self-efficacy of which directly impacts the potential adaptation of remote work in their SME operators (Kelly and Kumar, 2009). Another study in Tanzania had used the role of mobile phones in remote work on whether it influenced employees self-efficacy on accepting such technologies (Mushi, 2020). Their study shows that when such technology was easier to use, their acceptance of using such method becomes more acceptable.

Research from developing nations has explored the relationship between self-efficacy and remote work within the context of small and medium-sized enterprises (SMEs). Findings suggest that higher self-efficacy among SME operators is associated with increased creativity in their business operations. The impact of knowledge and technology on self-efficacy has also been examined, indicating its direct influence on the potential adoption of remote work among SME operators. Furthermore, studies into the role of technology, like mobile phones, in remote work, showcasing that the ease of using such technology positively affects employees' self-efficacy and their willingness to embrace remote work solutions. These studies collectively highlights the significance of self-efficacy in shaping SMEs' capacity to adapt to and succeed in remote work scenarios, with technology and accessibility mirroring the objectives of this study.

Labor process theory has been utilised to explain remote work by examining workers' productivity, work methods, and equipment used in carrying out their tasks (Donnelly and Johns, 2021). When focusing on SME, their limited resources are often analysed through the lens of resource-based theory, which recognises the constraints in terms of finance, time, and capacity that influence their decision-making (Husin and Ibrahim, 2014; Srivastava and Srivastava, 2019). In this study, the limited resources of SME are highlighted, emphasising their efforts to ensure that employees maintain productivity and produce the same output even in remote work environments.

Remote work

Remote work, also known as telecommuting, is when employees perform their job tasks from locations other than a central office, often from home, using computers and the internet (Errichiello and Pianese, 2016; Popovici and Popovici, 2020; Nyberg et al., 2021; Yang et al., 2022). This arrangement provides flexibility, enhancing work-life balance, reducing commuting time, and potentially increasing job

satisfaction and productivity. Remote work has become more common, primarily driven by technological advancements and the influence of the COVID-19 pandemic (Nyberg et al., 2021).

The movement control order (MCO) introduced during the pandemic covid-19 has brought a significant change to the working environment globally. The restriction order has made organisations to change from working from office to work from home, except for the essential sector, such as healthcare. Since then, the companies have introduced a remote working policy to accommodate the changes implemented by the government, and at the same time making sure the sustainability of their business. Since it was done abruptly due to pandemic covid-19, the employees are currently enjoying the privilege of remote working from home, that creates a dilemma for the top management in deciding their endemic working plan, whether to proceed with hybrid working policy to back to basic of working from the office.

Remote working has both advantage and disadvantage. Although there is lack of social interaction, inability to separate work from home, and lack of visibility (Allen et al., 2015; Hafermalz and Riemer, 2021), remote working helps improve employees' work efficiency (Ipsen et al., 2021). It is seen that employees who are satisfied with their job tends to perform better than the rest. The work-life balance achieved during remote working has helped in improving the work efficiency of the employees and it gives better control to the employees in managing their work, as long as they are able to achieve the expected outcome set by the employer (Blahopoulou et al., 2022). It also improves the wellbeing of the employees with greater flexibility in time management as it allows employees to work from different locations at flexible working time and duration, depending on the nature of the job (Yu et al., 2019). The flexibility also provides additional time for employees to spend time with their families (Beck and Hensher, 2022).

Remote working presents several challenges for small and medium-sized enterprises (SME). One significant hurdle is the need for robust technological infrastructure and support to ensure employees can effectively work from remote locations, which can strain limited IT resources (Howe et al., 2021). Additionally, remote work may blur the lines between work and personal life, potentially leading to burnout and decreased job satisfaction as measuring levels of work may be difficult from home (Kaduk et al., 2019). SME must grapple with security concerns, as data breaches and cyber threats can have severe consequences (Antunes et al., 2021). Furthermore, overseeing and managing remote teams may be a new and complex task for SME leaders, demanding effective strategies for supervision and performance assessment. Lastly, the lack of face-to-face interaction may impact company culture and employee morale, necessitating innovative approaches to maintain a positive work environment as this is thoroughly discussed in this paper.

However, there are also challenges faced when working remotely, especially for the employees who have small kids. Employees with family find it difficult to focus while working from home as there is high interruption from family and children during working hours, making it difficult to provide undivided attention especially during videoconferencing (Beck and Hensher, 2022; Lee et al., 2022). This occurred when other people such as the spouse or kids entered the space used for videoconference and it distracted the employee's attention away from videoconference (Lee et al., 2022).

The employees also find it challenging in adapting to the remote working environment, due to lack of IT knowledge and lack of facilities to accommodate the videoconferencing. Lack of facilities may refer to poor internet connection and poor digital devices to cater the apps used for the videoconferencing (Kohont and Ignjatović, 2022).

Small-medium enterprise

Small businesses have a significant impact on global economies, making up a large portion of them. Due to their importance, researchers and government agencies are increasingly interested in understanding these firms (Nasr and Rostom, 2013; Madanchian et al., 2015; Muriithi,

2017; Onjewu et al., 2023) Business practices are faced with constant changes and pressure in their business landscape. These unpredictable conditions require Small and Medium Enterprise adapt to changing market conditions. This leads to the need for Small and Medium Enterprise to have agility in order to survive, grow and expand in such unpredictable conditions.

SME Corporation Malaysia (SME Corp. Malaysia) is a Central Coordinating Agency under the Ministry of International Trade and Industry Malaysia that is responsible to encourage the growth and development of innovative, competitive and resilient SME in Malaysia. SME Corp stated the conditions for SME to be considered as SME depends on the size of the business and their overall revenue (NESDC, 2013). For instance, SME in the service sector must have a turnover of less than RM 5 million ringgit or have less than 50 employees. SME Corp had also stated that SME are crucial for the country's development as it had contributed to over 60% of employment and 50% of Gross Domestic Product of the nation (Khan and Khalique, 2014).

The importance of SME business should not be taken lightly. The ability by the SME to always maintain a competitive advantage with the limited resources should be further explored. This is where remote work comes into play with the intention to ensure that SME are able to operate more effectively in their day-to-day operation.

Research framework

Existing works of literature examined on the lessons that can be learnt from the implementation, motivations and opportunities of remote work (Barsness et al., 2005; Nyberg et al., 2021). The framework on remote work focuses on two specific themes which are the drivers of adoption and the outcomes of the implementation (Errichiello and Pianese, 2016). The framework of this study is based on the proposed framework of remote work of these research streams.

There are limited literatures that had attempted to design frameworks for remote work as most studies are based on grounded theoretical approaches (Donnelly and Johns, 2021; Wang et al., 2021; Wheatley et al., 2021). This study finds it suitable to implement the suggested framework in Figure 1 as it attempts to address on the issues involved in the implementation of remote work in organisations due to its direct and simple presentation of the scenario (Errichiello and Pianese, 2016). The systematic review of remote work suggests that businesses or organisations ultimately aim to have overall control over their employees in order for them to achieve the intended output for the organisation (Pianese et al., 2022).

The study explores on the antecedents, implementation process and its expected outcome in the context of remote working solutions in SME business owners and operators. The antecedents would be the original state of the organisation prior to the implementation of remote work, then the catalyst such as the pandemic or business change towards the implementation process. Then it examines on the expected outcomes of these implementations. The following research question was proposed in the study:

Research Question. : What is the context and relevance of remote work for SME business owners and operators?

This research question aims to explore the specific context and relevance of remote work for small and medium-sized enterprises (SME) business owners and operators. It seeks to understand the factors and considerations that make remote work applicable and valuable in the context of SME. By examining the context of remote work for SME, the study intends to investigate the conditions and circumstances under which SME are faced when they implement remote work arrangements. Furthermore, the question seeks to uncover the relevance of remote work for SME, highlighting its potential benefits and impact on various aspects of their businesses. This may include exploring how remote work can enhance productivity, flexibility, cost-effectiveness, and employee well-being within the SME context.

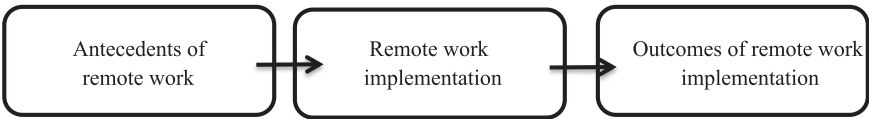


Figure 1. Proposed Research Framework.
Source: (Errichiello and Pianese, 2016).

By addressing the context and relevance of remote work for SME business owners and operators, the study aims to provide insights and practical implications for SME considering or currently implementing remote work arrangements. The findings may inform decision-making processes, policy development, and resource allocation in relation to remote work initiatives within SME.

Method

The study designed structured questions based on the objective of the proposed research framework in Figure 1 (Errichiello and Pianese, 2016). The question was designed to examine on what are the antecedents or prior conditions in the organisation and their perspective on remote work. Next would be the implementation process of remote work arrangements and the outcomes of such implementations. The design of the questions are exploratory in nature to include inquiries based on what, why and how (Patton, 2002; Crouch and McKenzie, 2006).

The structured questions designed in the Table 1 was based on the study of remote work arrangements framework that completely evaluates the overall context of implementation and outcomes of remote work (Errichiello and Pianese, 2016). These questions when directed to the SME would provide insight based on the designated subject matter.

Sample

Sample used in the study are from SME business owners and operators operating in the Klang Valley area Malaysia. The city itself is the central hub of economic growth and development of the nation. The context, size, type and categories of SME are based on the definition by the SME Corporation Malaysia (SME Corp. Malaysia) which is the central coordinating agency (CCA) under the Ministry of Entrepreneur Development and Cooperatives (KUSKOP) that coordinates the implementation of development programmes for small and medium enterprises (SME) across all related Ministries and agencies in Malaysia (SME Corp. Malaysia, 2021). It is one of the key organisation that coordinates programmes and development of the nation SME.

Table 1
Structured Questions.

No	Question
Antecedents of remote work	
1	What are the environmental factors of adopting remote work in your organisation?
2	What are the organisational factors of adopting remote work in your organisation?
3	Why does your organisation implementing or not implementing remote work?
Remote work implementation	
3	What are the implemented control systems or configurations adopted in your remote work arrangements?
4	How do managers or supervisors maintain control?
5	Do the employees maintain self-control and professionalism on their remote work arrangements?
6	What are the roles of technologies in this process?
Outcome of remote work implementations	
7	Why does your organisation continue with remote work arrangements?
8	What are the individual, group and organisational outcomes of remote work?
9	Would the organisation continue to adopt and expand remote work?

Source: Table is authors own creation based on the study of remote work arrangements framework (Errichiello and Pianese, 2016).

Sample consists of twenty business leaders, management level employees from SME in Malaysia. The business that they operate is located in Klang Valley Malaysia and the participants were selected based on a snowball sampling method (Ahmad and Seet, 2010). The selection of various levels of positions from business owners, and management level employees provided more information to the data and multi perspective viewpoints on the discussed subject. These people are the most suited to answer the questions brought in by the research as they had experienced the issue and transitioned from normal operations towards remote working environment (Harvard Newsletter, 2015). As the study is exploratory in nature, similar studies that investigated such an event in SME indicated that qualitative methods was suitable in such fields of subject (Salam et al., 2021). The following Table 2 profiles the interviewees used in this study.

Research method

The qualitative approach was suitable in inquiring the subject matter as it provides information with the situation that caused the business engage into remote work, the implementation process, the impact it has on their operations and whether it achieves the short term and long term goals of the organisation. These business owners, managers are management level employees who are the people that had experienced the COVID-19 unique environment, situations and limitations. The qualitative method of inquiry to these individuals would also provide insight to key matters such as the challenges, feasibility and expected continuity of remote work for certain types of SME business operators (Salam et al., 2021).

The SME businesses were interviewed through online sessions with the group of researchers and designated participants. The pandemic had brought forth a shift in research methods of where interviews are easily conducted through online communications such as Zoom and Google Meet (Santhosh et al., 2021). Some of the micro business owners had become adapt to such changes and are able to use simple telecommunications devices such as mobile telephones to participate in the interview. The interviews were conducted at the fall of 2021 and the first quarter of 2021 as this was the prevalent circumstances that business owners are starting to shift to the pre-COVID-19 era environments. These business owners had also adapted to the new norms of operating their businesses in order to achieve higher levels of income and operations.

The structured questions were used by the researchers to the participants of the study. Prior to the interview process, these businesses were inquired of their interest in participating in the study. Each of the participating businesses were given tokens of appreciation (that was not informed beforehand in order to not influence bias of the respondents) only after a month the interview was conducted. During the interview, there are open discussions and researchers were allowed to inquire ad-hoc questions to the respondents to maintain the levels of participation from the respondents (Marton, 2004). A two-way communications method between the participants and the researchers enabled an active learning process that brought forward various information's related to remote work.

Coding

The study employed thematic coding as the chosen approach for analysing a substantial amount of data. This method involved reading

Table 2
Profile of participants (qualitative study).

Ref ID	Business Type	Position	Size	No of employees	Remote work COVID-19 (2020–2021)	Remote work Post COVID-19 (Fall 2021–2022)
A1	Wholesale and retail trade	Owner	Micro	Less than 5	Hybrid	Hybrid
A2	Food	Owner	Micro	Less than 5	Hybrid	Hybrid
A3	Wholesale and retail trade	Owner	Small	5–30	Hybrid	Hybrid
A4	Business services	Owner	Small	5–30	Full remote	Full remote
A5	Basic metal and fabricated metal products	Owner	Small	5–30	Hybrid	Hybrid
A6	Non-metallic mineral products	Owner	Small	5–30	Hybrid	No remote
A7	Food and beverage	Owner	Medium	30–75	Hybrid	No remote
A8	Wholesale and retail trade	Owner	Medium	30–75	Hybrid	No remote
A9	Business services	Manager	Micro	Less than 5	Full remote	Full remote
A10	Information and communication	Manager	Small	5–30	Full remote	Full remote
A11	Business services	Manager	Medium	30–75	Full remote	Hybrid
A12	Manufacturing	Manager	Medium	30–75	Hybrid	No remote
A13	Business services	Management	Medium	30–75	Full remote	Hybrid
A14	Business services	Management	Medium	30–75	Full remote	Hybrid
A15	Business services	Management	Medium	30–75	Full remote	Hybrid
A16	Food and beverage	Management	Small	5–30	No remote	No remote
A17	Wholesale and retail trade	Management	Small	5–30	No remote	No remote
A18	Wholesale and retail trade	Management	Small	5–30	No remote	No remote
A19	Business services	Management	Small	5–30	Full remote	Full remote
A20	Business services	Management	Medium	30–75	Full remote	Full remote

Notes: The year 2020–2021 was the peak of the pandemic that had a significant impact to the economy globally. The year fall of 2021–2022 was transitional period where the pandemic was designated as the pandemic and most of the population had already sufficiently vaccinated based on the monitoring of the World Health Organisation (WHO) standards.

Source: Authors own creation based on data collected.

and coding the data, subsequently identifying and creating relevant themes within the study (Boyatzis, 1998; Nowell et al., 2017; Kiger and Varpio, 2020). Thematic coding, recognised as a powerful analytical method for qualitative data analysis, follows paradigmatic or epistemological orientations (Kiger and Varpio, 2020). Its foundation lies in identifying recurring patterns within the dataset (Braun and Clarke, 2017). The process of thematic coding can occur from top to bottom or vice versa, meaning that themes can be assigned first, followed by code identification (Kiger and Varpio, 2020). In this study, structural coding was employed, where themes and sections of the study were identified based on the underlying structure (Williams and Moser, 2019). The study involved semi-structured interviews, with the initial codes derived from the interview questions and further expanded to capture the main content of the subject matter.

To enhance the data analysis process, the study utilised ATLAS.ti version 9 software. This software offered flexibility and improved the effectiveness of the coding process by leveraging its capabilities (Amini et al., 2018). The approach to data analysis in this study was aligned with a framework analysis, as it utilised a developed conceptual framework to structure the contents covered in the semi-structured interviews and to explore the subject matter.

Data analysis and findings

Data was transcribed in verbatim word for word in order to improve on the information databank of the study. These data were then transferred to ATLAS.ti for the next process of data analysis. The members of the research project independently interpreted the data obtained from

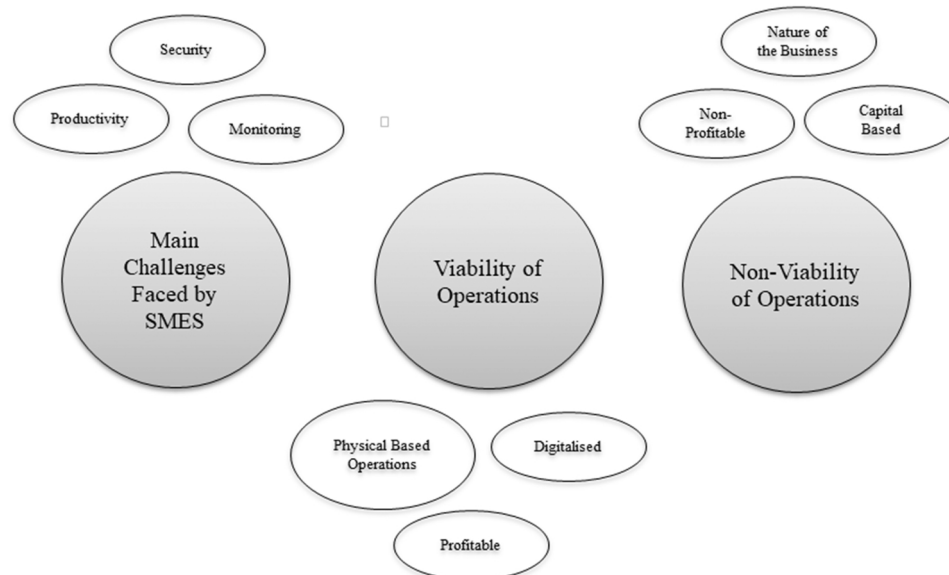


Fig. 2. Overview of the findings from the qualitative study: Key themes.

Source: Authors own creation and expansion based on the initial research on remote work arrangements framework.

the interviews and categorised it based on higher level themes and sub themes.

The members of the research team had identified three main themes that had emerged from the interviews as in Fig. 2. The first theme was based on the overall challenges that are currently being faced by the business operators and their ongoing challenges throughout the process of remote work antecedents and implementations. The other two themes are based on the viability and non-viability of operations of remote work during the pandemic and post COVID-19 era of how business operators had adapted to the crisis and whether they find it feasible to still continue or not continue with remote working arrangements.

The questions used during the interview mainly asked on the respondent's perspective on the main concepts and challenges involved in working from home as shown in the centre of Fig. 2. The sub-themes that emerged are shown separately by each identified area.

The key themes arising in the overall are tied with the suggested framework in Fig. 1 as the challenges faced by SME covers the antecedents of remote work, implementation, and outcomes, provides a comprehensive structure for investigating the challenges. By examining these antecedents, the study can identify what factors influence the adoption of remote work within SME. Implementation processes can reveal the practical hurdles and potential bottlenecks that SME owners face when trying to establish remote work setups. Additionally, studying outcomes can shed light on the effectiveness and impact of remote work in the SME context, helping to identify challenges and areas that need improvement.

This includes the viability of working from home in Fig. 2 represents the framework's focus on antecedents allows the study to explore factors that make remote work viable for SME. By understanding these elements, it can identify the conditions under which working from home is a feasible and beneficial option. This information can be used to help SME make informed decisions regarding the adoption of remote work. The non-viability of working from home becomes evident when examining antecedents and outcomes. This aspect of the study identifies circumstances or situations where remote work may not be a practical option for SME. For instance, it could reveal conditions where implementing remote work hinders productivity or presents operational challenges. This valuable insight is crucial for SME as it helps them grasp the boundaries and potential risks associated with adopting remote work.

The proposed research framework in Fig. 1 serves as a valuable tool for investigating the challenges, viability, and non-viability of working from home for SME (Errichiello and Pianese, 2016). By delving into the antecedents, implementation, and outcomes of remote work, the study can provide SME owners with a well-rounded understanding of when and how remote work can be effectively employed in their businesses.

Challenges

Throughout the interview findings in terms of the challenges faced by the SME had consistently brought forward these main highlighted themes. These are based on the aspects of productivity, monitoring and security challenges faced when conducting work from home process. Fig. 3 shows the coding comments in explaining the challenges faced by SME of working from home. There are three sub-themes identified under the challenges which consist of productivity, monitoring and security.

Working from home can present various productivity challenges related to software and hardware. In a remote work setup, employees often use their own software applications, which may not be fully compatible with the organisation's systems. This can result in difficulties accessing and sharing files, collaborating with colleagues, or using specific software required for certain tasks. Working from home might require employees to rely on their personal devices, which may not meet the same standards as the company's hardware. Limited processing power, insufficient storage capacity, or outdated hardware can impact productivity, especially when working with resource-intensive applications or handling large datasets.

[...] as we managed to avoid any implications to workers productivity when working from home (Ref ID A9).

Note: Please refer to Table 2 for the interview response reference.

The business owners are mainly concerned on the overall output of workers when they are working from home. Here the SME managers had stated that they were able to avoid implications to productivity by setting up consistent targets that must be achieved from the employee when they are remote working.

Monitoring an employee had always been a challenge whether it involves remote work or working from operations. Monitoring work from home presents unique challenges, particularly in the absence of direct supervision. Continuous monitoring becomes crucial to ensure productivity and adherence to work-related commitments.

[...] has thought of using software to monitor workers movement during remote work, currently they are just required to clock in and we would track their whereabouts. (Ref ID A10).

[...] company will soon implement 'digital monitoring', however not to an extent that staff will feel like being a 'digital prisoner' in their own home. (Ref ID A19).

In the remote work setting, supervisors may have limited visibility into employees' daily activities, making it essential to implement mechanisms for ongoing monitoring. This can involve regular check-ins, progress updates, and the use of project management tools to track task completion. Additionally, the presence of family commitments adds another layer of complexity, as individuals may face interruptions or distractions while juggling work and personal responsibilities. Establishing open communication channels and setting clear expectations can help address these challenges and maintain accountability. Employers

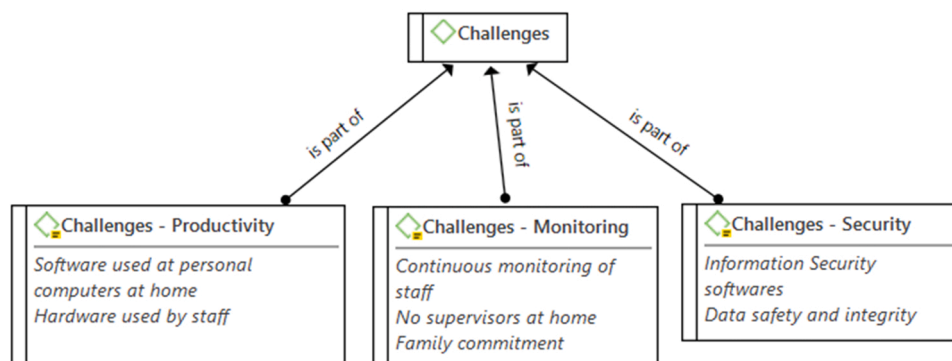


Fig. 3. Coding of challenges faced by SME.
Source: Data from collected from respondents.

may need to strike a balance between trust and monitoring to ensure work is being completed effectively while considering the unique circumstances and dynamics of remote work environments.

[...] use unlicensed version or trial version of the software. We are aware of the security threats but sometimes we don't always use that software. (Ref ID A20).

[...] a lot of email spam that come to the employees e-mail, some of them (employees) are aware that these emails are fake and brings viruses. (Ref ID A13).

While it's understandable that SMEs often seek cost-effective solutions, the use of unlicensed trial software presents certain risks. SMEs need to be aware that relying on unlicensed trial versions may result in unexpected disruptions to their workflow when the trial period ends. Prior studies on unlicensed software indicated that there are risks involved whether the SME business utilise an unlicensed software, cracked software, pirated software or an unlicensed operating system which are mainly on information integrity safety and security (Sessink, 2020; Le and Nguyen, 2023).

The managers are concerned with what employees interact with their home computers. They stated that they consistently receive a lot of spams and emails from external parties. Home networks and personal devices may not have the same level of security measures as corporate networks and devices. This can expose sensitive company information to potential cyber threats, including malware, phishing attacks, or data breaches. Employees need to be diligent in adhering to security protocols and keeping their software and hardware up to date.

Literature on remote work had stated that achieving work life balance is important for overall productivity and happiness (Putra et al., 2020). The study had stated that when the workers were able to achieve work life balance, they had improved job satisfaction.

Viability of operations

SME that operates their business explained that there are some aspects of limitations that appear when operating work from home processes. Although employees welcome such initiatives, it is important to the business to ensure that operations are maintained smoothly in order to remain sustainable. Fig. 4 shows the coding comments in explaining the viability of working from home.

There are businesses that require the person to physically come to their office and require labour work. These type of businesses for instance retail were unable to employ working from home conditions. However, these companies were able to enable support employees such as administration and finance to work from home for a certain period. There are also instances that working from home had generated new opportunities.

[...] are now more focused on digital marketing. We promote our products online through Facebook and Instagram and employees can do this at home. (Ref ID A7).

[...] government had provided digital grants and the business had made good use of this in investing on digital investments. (Ref ID A11).

The flexibility of remote work allows employees to engage in these digital marketing efforts from the comfort of their homes, effectively reaching a wider audience and driving customer engagement.

Furthermore, the government's provision of digital grants has been instrumental in supporting SME' digital investments. These grants have enabled businesses to invest in various digital tools, technologies, and resources to enhance their online presence, streamline operations, and improve customer experiences. By making good use of these digital grants, SME have embraced the digital transformation and positioned themselves for growth and success in the evolving market landscape similar to studies in Indonesia (Raya et al., 2021). Businesses in the healthcare industry had also shown that digital investment brings in forward more opportunities (Chang et al., 2023).

[...] our consultancy services had experienced a large number of growth of clients (Ref ID A4).

[...] had experienced a boom in our business since the pandemic. Remote work had brought forward new opportunities (Ref ID A10).

The SME owners that experienced significant growth is mostly from consultancy organisations. They were able to hold more sessions and were able to capture more market share due to the changed working conditions of remote working. For instance, a company in technological consultation such as data cloud for able to provide their services remotely with their customers. This flexibility not only enabled efficient collaboration but also widened their reach, as geographical barriers were no longer a limiting factor. As a result, these SME in consultancy have capitalised on the opportunities presented by remote working to drive their growth and establish a stronger market presence.

Non-viability of operations

There are indicators of when SME stated that working from home was not aligned to the business operations. There can be a number of reasons as the business would require physical presence in their activities such as services, retail and maintenance. These types of businesses are focused on labour intensive processes. Fig. 5 shows the coding comments in explaining the non-viability of working from home.

Business owners and SME operators stated that working from home requires a significant amount of investment. Most of the SME operators that was interviewed stated that they had insufficient funds to fully capitalise on the online digitalisation process in the context of investing their hardware and software (Vuchkovski et al., 2023). Employees that were tasked to work from home had given excuses such as having outdated equipment's or computers. Some had also stated that their internet connection was not stable and this directly disrupted the business operations during video calls or online group meetings. Findings reveal that SME had stated the limits of their capabilities on investing on technology are one of the main reasons that they are unable to

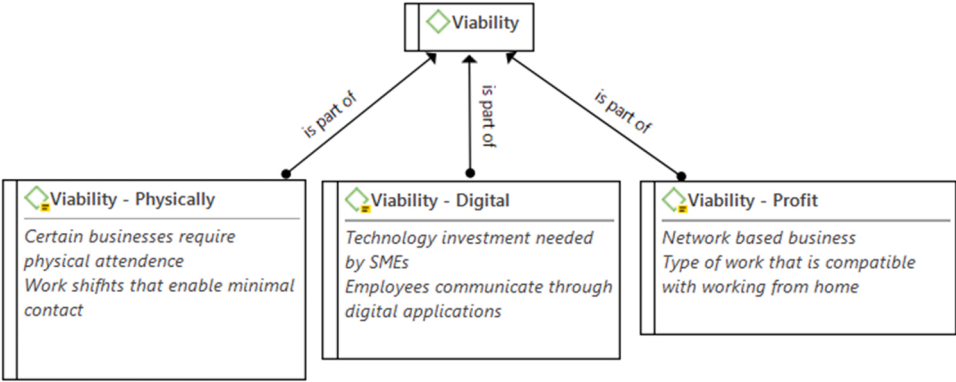


Fig. 4. Coding of viability of working from home. Source: Data from collected from respondents.

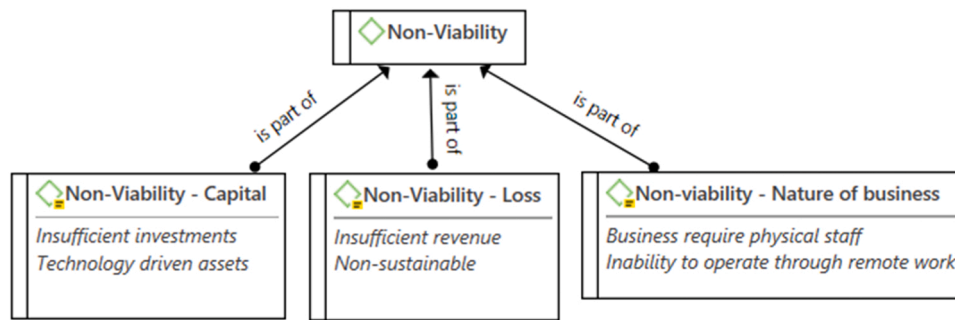


Fig. 5. Coding of non-viability of working from home.
Source: Data from collected from respondents.

implement remote work.

[...] are unable to allow the workers to work from home as they do not have the necessary training. (Ref ID A17).

[...] we are limited to what we can give them (employees). (Ref ID A3).

[...] are just running a small business, I don't have the money to buy super computers or fancy gadgets. (Ref ID A4).

Their managers stated that when employees are required to remote work from their office, they must first be sufficiently trained in order to fully understand their responsibility in working from home or work remotely.

There are business owners that stated that their company was unable to operate remotely due to the decline in revenue. The alternative was to reduce on expenditures as the income was stagnant and consistently declining. The business owners of the SME stated they had trimmed down on their operations by reducing the number of workers to cushion the blow to their business. One of the SME owners stated that they had to reduce from five (5) workers to two (2) workers during the pandemic. Small business owners would not have the capability to withstand long term financial impact to their businesses. Another business owner had stated that they simply did not operate their business as the business was unable to operate. This was mainly towards the catering business operators that stated they were unable to work from home in catering businesses.

[...] had to reduce the workers as the business was losing money. (Ref ID A16).

This would coincide with the themes that stated that the nature of the business plays an important role in determining remote work operations. The food caterer stated there are still aspects of the business that allowed working from home employees such as from online bookings or promoting the packages through digital media outlets.

The limitations faced by retail and service industries are that the business model itself was unable to operate remotely. For instance, a business that operates on selling on retail items such as furniture stated that customers prefer to go to retail stores to see for themselves on product selection and variety. A shoe business owner had also stated that their customers would always prefer to go to their retail outlets to test on their shoe sizes and comfortability. Most of these types of businesses stated that once the pandemic limitations was limited, they had gradually implemented physical working conditions to their employees. Literature had commented that the people that were unable to work from home are majority from lower income workers and the majority of the workload are unable to be done at home (Khazan, 2020). Another commentary had stated that working from home would not apply to a number of categories of business services such as restaurants, hotels and retail outlets (Shackleton, 2020). Skill based workers that require employees to operate any type machinery would also require their presence in the office or workplace.

Discussion and conclusion

In the context of monitoring work from home, it is important to address issues such as the use of unlicensed or trial versions of software and the presence of email spam that may contain viruses. While employees may sometimes resort to using unauthorised software due to various reasons, it is crucial to emphasise the security threats associated with such practices. Unauthorised software may lack essential security updates, making systems vulnerable to cyberattacks and compromising sensitive data. Encouraging employees to use licensed and updated software helps mitigate security risks and ensures compliance with legal and ethical standards.

The findings that highlight the varying capabilities of SME to maintain remote working environments align with the diverse nature of businesses and their specific operational requirements (Yang et al., 2022). Not all SME may be suitable for remote work, as it depends on factors such as the type of business and the need for operational flexibility (Shackleton, 2020). The study suggests that SME have different capabilities when it comes to maintaining remote working environments due to their distinct operational requirements. Factors like the nature of the business and the need for operational flexibility significantly influence the feasibility of remote work for SME. In SMEs, the relevance of self-efficacy theory becomes even more crucial as it directly impacts the small business owners themselves. Their confidence in navigating the challenges of remote work, which may include limited resources and smaller teams, is pivotal to the success of the business. Small business owners with strong self-efficacy are more likely to effectively lead their teams and make the necessary adaptations to ensure remote work contributes positively to their business's performance and sustainability.

The originality and value of the paper lie in its reliance on information, observation, and discussions with SME operators who have first-hand experience of the impact of COVID-19. The urgency imposed by the pandemic compelled SME to adopt remote work measures, which were previously not prioritised by many of these businesses. Understanding their experiences and perspectives adds depth to the understanding of remote work implementation in the context of developing nations and SME.

The findings that highlight the varying capabilities of SMEs to maintain remote working environments make a significant contribution to theory discussed in this paper especially the theory of self-efficacy (Wheatley et al., 2021). Every company or organisations benefit from further insight obtained from such related study. This insight aligns with the diverse nature of businesses and their specific operational requirements, emphasizing the importance of recognising that not all SMEs are equally suitable for remote work. This contributes to the development of a different levels of understanding of how different business types and operational needs impact the feasibility of remote work, enhancing the theoretical foundation for future research in this area.

The study utilised the relevance of self-efficacy theory, particularly

in the context of SME (Staples et al., 1999; Faraz et al., 2021). It brought forward that self-efficacy significantly affects small business owners' ability to navigate the challenges of remote work, even in cases of limited resources and smaller teams. They have a need to survive in conditions that are unpredictable and move forward towards stronger levels of resilience (Marcazzan et al., 2022). The instance of a pandemic, such small and medium sized companies were able to adapt and had used digitalisation as method of further enhancing their business. This practical insight can be invaluable to SMEs, as it highlights the role of confidence and adaptability in remote work success. SME owners can leverage self-efficacy to enhance their leadership and drive positive contributions to their businesses' performance and sustainability.

The paper's value is not limited to theoretical and practical contributions; it also makes a methodological contribution by demonstrating the importance of firsthand experiences. By relying on information, observation, and discussions with SME operators who have directly experienced the impact of COVID-19, the study showcases the relevance of primary data sources in understanding the challenges and dynamics of remote work. This methodological approach serves as a model for future research, emphasising the importance of engaging with the actual experiences and perspectives of those affected by remote work, particularly in developing nations and within the SME context.

Overall, this study contributes to the existing knowledge by providing insights into the challenges, feasibility, and security concerns associated with remote work implementation for SME in the post-COVID-19 era in developing nations.

Study limitations

The research limitations and implications acknowledged in the study recognise the significant impact of the pandemic on business operations worldwide. The study highlights those businesses of all sizes, including both large and small enterprises, have had to adapt to the changing environment caused by the pandemic. By specifically examining the challenges faced by SME in implementing remote work, the study offers valuable insights into the specific difficulties and feasibility of remote work for this particular segment of businesses.

Statements on compliance with ethical standards

The author(s) would like to thank the Malaysian Ministry of Higher Education, the university (UiTM Shah Alam), department (Accounting Research Institute), government agencies that participated and supported this research. The author(s) declare that they have no conflict of interest. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Statement of human and animal rights

This article does not contain any information on animal and human subjects under the Bioethics Act.

Statement of informed consent

Verbal informed consent was obtained from the respondent (s) for their anonymised information to be published in this article.

Ethical statement

Not applicable because this article does not contain any information on animal and human subjects under the Bioethics Act.

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CRediT authorship contribution statement

Salwa Zolkafilil: Conceptualization, Methodology, Software, Writing – review & editing. **Dewi Izzwi Abdul Manan:** Data curation, Writing – original draft. **Afzal Izzaz Zahari:** Visualization, Investigation. **Fazlida Mohd Razali:** Supervision. **Jamaliah Said:** Software, Validation.

Declaration of Competing Interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

Data Availability

All data used for this project are available on request from the corresponding authors. The data are not publicly available due to involving sensitive information discussed during the interview. Selected sections can be requested in order to not compromise the privacy of the research participants.

References

- Ahmad, N.H., Seet, P.-S., 2010. Gender variations in ethical and socially responsible considerations among SME entrepreneurs in Malaysia. *Int. J. Bus. Soc.* 11 (1).
- Allen, T.D., Golden, T.D., Shockley, K.M., 2015. How Effective is Telecommuting? Assessing the status of our scientific findings. *Psychol. Sci. Public Interest* 16 (2), 40–68.
- Amini, Z., Arasti, Z., Bagheri, A., 2018. Identifying social entrepreneurship competencies of managers in social entrepreneurship organizations in healthcare sector. *J. Glob. Entrep. Res.* 8 (1), 1–14.
- Andrikopoulos, C., 2021. Robotics Technology in Agro-food SME Clustering after the COVID-19 Crisis in Europe: Legal aspects and socio-economic implications. *Eur. J. Law Technol.* 12 (2).
- Antunes, M., Maximiano, M., Gomes, R., Pinto, D., 2021. Information security and cybersecurity management: A case study with SMEs in Portugal. *J. Cybersec. Priv.* 1 (2), 219–238.
- Bailey, N., Kurland, N.B., 1999. The advantages and challenges of working here, there, anywhere, and anytime. *Organ. Dyn.* 28 (2), 53–68.
- Barrett, G., Dooley, L., Bogue, J., 2021. Open innovation within high-tech SMEs: a study of the entrepreneurial founder's influence on open innovation practices. *Technovation* 103, 102322.
- Barsness, Z.I., Diekmann, K.A., Seidel, M.-D.L., 2005. Motivation and Opportunity: the role of remote work, demographic dissimilarity, and social network centrality in impression management. *Acad. Manag. J.* 48 (3), 401–419.
- Beck, M.J., Hensher, D.A., 2022. Australia 6 Months after COVID-19 Restrictions Part 2: the impact of working from home. *Transp. Policy* 128, 274–285.
- Blahopoulou, J., Ortiz-Bonnin, S., Montañez-Juan, M., Torrens Espinosa, G., García-Buades, M.E., 2022. Telework satisfaction, wellbeing and performance in the digital Era. lessons learned during COVID-19 lockdown in Spain. *Curr. Psychol.* 41 (5), 2507–2520.
- Boyatzis, R.E., 1998. *Transforming Qualitative Information: thematic analysis and code development*. Sage Publications, Thousand Oaks.
- Braun, V., Clarke, V., 2017. Using thematic analysis in psychology. *Qual. Res. Psychol.* 3 (2), 77–101, 2006.

- Brynjolfsson, E., Horton, J.J., Ozimek, A., Rock, D., Sharma, G., TuYe, H.-Y., 2020. COVID-19 and Remote Work: An early look at US data. National Bureau of Economic Research.
- Cadden, T., Weerawardena, J., Cao, G., Duan, Y., McIvor, R., 2023. Examining the role of big data and marketing Analytics in SMEs innovation and competitive advantage: a knowledge integration perspective. *J. Bus. Res.* 168, 114225.
- Campbell, K.M., 2015. Flexible Work Schedules, Virtual Work Programs, and Employee Productivity. Walden University.
- Cepel, M., Gavurova, B., Dvorský, J., Belas, J., 2020. The impact of the COVID-19 crisis on the perception of business risk in the SME segment. *J. Int. Stud.*
- Chang, V., Xu, Q.A., Hall, K., Wang, Y.A., Kamal, M.M., 2023. Digitalization in omnichannel healthcare supply chain businesses: the role of smart wearable devices. *J. Bus. Res.* 156, 113369.
- Crouch, M., McKenzie, H., 2006. The logic of small samples in interview-based qualitative research. *Soc. Sci. Inf.* 45 (4), 483–499.
- Department of Statistics Malaysia. (2021). Small and Medium Enterprises (SMEs) Performance 2020. Retrieved from Department of Statistics Malaysia website: (https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=159&bul_id=KzdrS25pRTZ1VGfKcTINY0fEczBYUT09&menu_id=TE5CRUZCb1h4ZTZMODZlbnk2aWRRTQT09).
- Donbesuur, F., Owusu-Yirenkyi, D., Ampong, G.O.A., Hultman, M., 2023. Enhancing export intensity of entrepreneurial firms through bricolage and international opportunity recognition: the differential roles of explorative and exploitative learning. *J. Bus. Res.* 156, 113467 <https://doi.org/10.1016/j.jbusres.2022.113467>.
- Donnelly, R., Johns, J., 2021. Recontextualising Remote Working and its HRM in the Digital Economy: an integrated framework for theory and practice. *Int. J. Hum. Resour. Manag.* 32 (1), 84–105.
- Errichiello, L., Pianese, T., 2016. Organizational control in the context of remote work arrangements: a conceptual framework. *Stud. Manag. Financ. Account.* 31 (September), 273–305. <https://doi.org/10.1108/S1479-351220160000031009>.
- Evers, N., Ojala, A., Sousa, C.M.P., Criado-Rialp, A., 2023. Unraveling Business Model Innovation in Firm Internationalization: a systematic literature review and future research agenda. *J. Bus. Res.* 158, 113659.
- Fairlie, R., Fossen, F.M., 2021. The early impacts of the COVID-19 pandemic on business sales. *Small Bus. Econ.* 1–12.
- Faraz, N.A., Ahmed, F., Ying, M., Mehmood, S.A., 2021. The interplay of green servant leadership, self-efficacy, and intrinsic motivation in predicting employees' Pro-environmental Behavior. *Corp. Soc. Responsib. Environ. Manag.* 28 (4), 1171–1184.
- Fitriyani, F., 2020. How do Small and Medium Enterprise (SME) Survive the COVID-19 Outbreak? *J. Inov. Ekon.* 5 (02).
- Gössling, S., Scott, D., Hall, C.M., 2020. Pandemics, tourism and global change: a rapid assessment of COVID-19. *J. Sustain. Tour.* 29 (1), 1–20.
- Hafermalz, E., Riemer, K., 2021. Productive and connected while working from home: what client-facing remote workers can learn from telenurses about 'belonging through technology'. *Eur. J. Inf. Syst.* 30 (1), 89–99.
- Harvard Newsletter, 2015. Research Methods. *Harv. Econ.* 1, 186–191. <https://doi.org/10.1111/j.1740-8784.2007.00058.x>.
- Howe, D.C., Chauhan, R.S., Soderberg, A.T., Buckley, M.R., 2021. Paradigm shifts caused by the COVID-19 pandemic. *Organ. Dyn.* 50 (4), 100804.
- Husin, M.A., Ibrahim, M.D., 2014. The role of accounting services and impact on small medium enterprises (SMEs) performance in manufacturing sector from east coast region of malaysia: a conceptual paper. *Procedia - Soc. Behav. Sci.* 115 (Icics 2013), 54–67. <https://doi.org/10.1016/j.sbspro.2014.02.415>.
- Ibidunni, A.S., Ayeeni, A.W.A., Ogundana, O.M., Otokiti, B., Mohalajeng, L., 2022. Survival during times of disruptions: rethinking strategies for enabling business viability in the developing economy. *Sustainability* 14 (20), 13549.
- Ipsen, C., van Veldhoven, M., Kirchner, K., Hansen, J.P., 2021. Six key advantages and disadvantages of working from home in europe during COVID-19. *Int. J. Environ. Res. Public Health* 18 (4), 1826.
- Kaduk, A., Genadek, K., Kelly, E.L., Moen, P., 2019. Involuntary vs. Voluntary Flexible Work: insights for scholars and stakeholders. *Community, Work Fam.* 22 (4), 412–442.
- Kalemlı-Ozcan, S., Gourinchas, P.-O., Pencikova, V., Sander, N., Kalemli-Özcan, Şebnem, Pencikova, V., Sander, N., 2020. Covid-19 and SME failures. International Monetary Fund.
- Karabag, S.F., 2020. An Unprecedented Global Crisis: The global, regional, national, political, economic and commercial impact of the coronavirus pandemic. *J. Appl. Econ. Bus. Res.* 10 (1), 1–6.
- Kelly, L., Kumar, R., 2009. Impact of knowledge management on the self-efficacy of entrepreneurs: Mexican SME context. *Int. J. Manag. Decis. Mak.* 10 (1–2), 111–124.
- Khan, M.W.J., Khalique, M., 2014. An overview of small and medium enterprises in Malaysia and Pakistan: past, present and future scenario. *Bus. Manag. Horiz.* 2 (2), 38.
- Khazan, O. (2020). Work from Home is Here to Stay. *The Atlantic*. Available at: (<https://www.theatlantic.com/Health/Archive/2020/05/Work-from-Home-Pandemic/611098/Last>) (Accessed 02 27, 2021).
- Kiger, M.E., Varpio, L., 2020. Thematic analysis of qualitative data: AMEE guide No. 131. *Med. Teach.* 42 (8), 846–854.
- Kohont, A., Ignjatović, M., 2022. Organizational support of working from home: aftermath of COVID-19 from the perspective of workers and leaders. *Sustainability* 14 (9), 5107.
- Le, P.B., Nguyen, D.T.N., 2023. Stimulating knowledge-sharing behaviours through ethical leadership and employee trust in leadership: the moderating role of distributive justice. *J. Knowl. Manag.* 27 (3), 820–841.
- Lee, M., Park, W., Lee, S., Lee, S., 2022. Distracting moments in videoconferencing: a look back at the pandemic period. *Proc. 2022 CHI Conf. Hum. Factors Comput. Syst.* 1–21.
- Madanchian, M., Hussein, N., Noordin, F., Taherdoost, H., 2015. The role of SMEs in economic development: case study of Malaysia. *Int. J. Acad. Res. Manag.* 4 (3), 77–84.
- Marcazzan, E., Campagnolo, D., Gianecchini, M., 2022. Reaction or Anticipation? Resilience in small-and medium-sized enterprises. *J. Small Bus. Enterp. Dev.* 29 (5), 764–788.
- Marques, C.S., Ferreira, J., 2009. SME innovative capacity, competitive advantage and performance in a traditional industrial region of Portugal. *J. Technol. Manag. Innov.* 4 (4), 53–68.
- Marton, F., 2004. Phenomenography: a research approach to investigating different understandings of reality. *Qual. Res. Educ.*
- Muriithi, S.M. (2017). *African Small and Medium Enterprises (SMEs) Contributions, Challenges and Solutions*.
- Mushi, R.M., 2020. Assessing the influence of self-efficacy on the acceptance of mobile phones: a case of employees of SMEs. *Int. J. Inf. Commun. Technol. Hum. Dev. (IJICTHD)* 12 (4), 1–18.
- Nasr, S., Rostom, A.M., 2013. SME contributions to employment, job creation, and growth in the Arab world. *Job Creat., Growth Arab World (October 1, 2013)*.
- NESDC, 2013. Guideline for SME definition. SME Corp. Malays. 1–13.
- Neufeld, D.J., Fang, Y., 2005. Individual, social and situational determinants of telecommuter productivity. *Inf. Manag.* 42 (7), 1037–1049.
- Nowell, L.S., Norris, J.M., White, D.E., Moules, N.J., 2017. Thematic Analysis: striving to meet the trustworthiness criteria. *Int. J. Qual. Methods* 16 (1), 1609406917733847.
- Nyberg, A.J., Shaw, J.D., Zhu, J., 2021. The people still make the (Remote Work-) place: lessons from a pandemic. *J. Manag.* 47 (8), 1967–1976. <https://doi.org/10.1177/01492063211023563>.
- Okuwere, M.P., Tafamel, A.E., 2022. Coronavirus (COVID-19) and entrepreneurship in Africa: challenges and opportunities for small and medium enterprises innovation. In: Eniola, A.A. (Ed.), *Entrep. Post-Pandemic Future* 7–21. <https://doi.org/10.1108/978-1-80117-902-720221002>.
- Onjewu, A.-K.E., Olan, F., Paul, S., Nguyen, H.T.T., 2023. The effect of government support on bureaucracy, COVID-19 resilience and export intensity: evidence from north Africa. *J. Bus. Res.* 156, 113468.
- Organisation for Economic Co-operation and Development. (2015). *Active with Southeast Asia*. Retrieved from (<https://www.oecd.org/southeast-asia/Active-with-Southeast-Asia.pdf>).
- Organisation for Economic Co-operation and Development. (2017). Enhancing the Contributions of SMEs in a Global and Digitalised Economy. In *Meeting of the OECD Council at Ministerial Level*. Retrieved from (<https://www.oecd.org/mcm/document/s/C-MIN-2017-8-EN.pdf>).
- Patton, M.Q., 2002. Qualitative research and evaluation methods. Sage publications. Sage Publications Sage CA, Canada (Thousand Oaks, CA).
- Pianese, T., Errichiello, L., Cunha, J.V., 2022. Organizational control in the context of remote working: a synthesis of empirical findings and a research agenda. *Eur. Manag. Rev.* (April) <https://doi.org/10.1111/emre.12515>.
- Popovici, V., Popovici, A.-L., 2020. Remote work revolution: current opportunities and challenges for organizations. *Ovidius Univ. Ann. Econ. Sci. Ser.* 20, 468–472.
- Pu, G., Qamruzzaman, M., Mehta, A.M., Naqvi, F.N., Karim, S., 2021. Innovative finance, technological adaptation and SMEs sustainability: the mediating role of government support during COVID-19 pandemic. *Sustainability* 13 (16), 9218.
- Putra, K.C., Pratama, T.A., Linggautama, R.A., Prasetyaningtyas, S.W., 2020. The impact of flexible working hours, remote working, and work life balance to employee satisfaction in banking industry during Covid-19 pandemic period. *J. Bus. Manag. Rev.* 1 (5), 341–353.
- Raya, A.B., Andiani, R., Siregar, A.P., Prasada, I.Y., Indana, F., Simbolon, T.G.Y., Nugroho, A.D., 2021. Challenges, open innovation, and engagement theory at Craft SMEs: evidence from Indonesian batik. *J. Open Innov.: Technol., Mark., Complex.* 7 (2), 121.
- Salam, M.T., Imtiaz, H., Burhan, M., 2021. The perceptions of SME retailers towards the usage of social media marketing amid COVID-19 crisis. *J. Entrep. Emerg. Econ.* 13 (4), 588–605. <https://doi.org/10.1108/JEEE-07-2020-0274>.
- Saleh, A.S., & Ndubis, N.O. (2006). SME Development in Malaysia: Domestic and Global Challenges. *Working Paper 06–03, Department of Economics, University of Wollongong*, 2006., (May), 29. Retrieved from (<http://www.uow.edu.au/commerce/econ/wpape rs.html>).
- Santhosh, L., Rojas, J.C., Lyons, P.G., 2021. Zooming into focus groups: strategies for qualitative research in the era of social distancing. *ATS Sch.* 2 (2), 176–184.
- Sessink, D., 2020. Creating and Maintaining Organizational Security Awareness in SMEs. University of Twente.
- Shackleton, J.R., 2020. Pass the remote: why we can't all work from home. *Inst. Econ. Aff.*
- Siebold, N., Oelrich, S., Roche, O.P., 2023. "I am your partner, am I not?" An inquiry into stakeholder inclusion in platform organizations in times of crisis. *J. Bus. Res.* 160, 113776.
- Skordoulis, M., Ntanos, S., Kyriakopoulos, G.L., Arabatzis, G., Galatsidas, S., Chalikiak, M., 2020. Environmental innovation, open innovation dynamics and competitive advantage of medium and large-sized firms. *J. Open Innov.: Technol., Mark., Complex.* 6 (4), 195.
- SME Corp. Malaysia. (2021). SME Definitions. Retrieved from SME Corp. Malaysia website: (<https://www.smecorp.gov.my/index.php/en/policies/2020-02-11-08-01-24/sme-definition>).

- Srivastava, P., Srivastava, D.K., 2019. Resource-based theory and SMEs internationalisation: evidences from Indian firms. *Int. J. Entrep. Small Bus.* 37 (3), 364–398.
- Staples, D.S., Hulland, J.S., Higgins, C.A., 1999. A self-efficacy theory explanation for the management of remote workers in virtual organizations. *Organ. Sci.* 10 (6), 758–776.
- Vuchkovski, D., Zalaznik, M., Mitreša, M., Pfajfar, G., 2023. A look at the future of work: the digital transformation of teams from conventional to virtual. *J. Bus. Res.* 163, 113912 <https://doi.org/10.1016/j.jbusres.2023.113912>.
- Wan, Z., Wang, Y., 2018. The effects of sellers' entrepreneurial self-efficacy and remote work self-efficacy in online marketplaces: an empirical investigation. *Int. J. Electron. Bus.* 14 (1), 28–48.
- Wang, B., Liu, Y., Qian, J., Parker, S.K., 2021. Achieving effective remote working during the COVID-19 pandemic: a work design perspective. *Appl. Psychol.* 70 (1), 16–59.
- Wheatley, D., Hardill, I., Buglass, S., 2021. Handbook of research on remote work and worker well-being in the Post-COVID-19 era. IGI Global.
- Williams, M., Moser, T., 2019. The art of coding and thematic exploration in qualitative research. *Int. Manag. Rev.* 15 (1), 45–55.
- Worldometer. (2022). COVID-19 Coronavirus Pandemic. Retrieved 14 April 2022, from Worldometer website: (<https://www.worldometers.info/coronavirus/>).
- Yang, L., Holtz, D., Jaffe, S., Suri, S., Sinha, S., Weston, J., Hecht, B., 2022. The effects of remote work on collaboration among information workers. *Nat. Hum. Behav.* 6 (1), 43–54.
- Yu, R., Burke, M., Raad, N., 2019. Exploring impact of future flexible working model evolution on urban environment, economy and planning. *J. Urban Manag.* 8 (3), 447–457.
- Yun, Jinhyo Joseph, Zhao, X., Park, K., Shi, L., 2020b. Sustainability condition of open innovation: dynamic growth of alibaba from sme to large enterprise. *Sustainability* 12 (11), 4379.
- Yun, JinHy Joseph, Zhao, X., Jung, K., Yigitcanlar, T., 2020a. The culture for open innovation dynamics. *Sustainability* Vol. 12, 5076 (MDPI).
- Zulu-Chisanga, S., Oghazi, P., Hultman, M., Leonidou, C.N., Boso, N., 2023. Developing and utilizing coopetitive relationships: evidence from small and medium-sized enterprises in sub-Saharan Africa. *J. Bus. Res.* 166, 114111 <https://doi.org/10.1016/j.jbusres.2023.114111>.
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Exploring the viability of remote work for SME

[Zahari, Afzal Izzaz^a](#); [Abdul Manan, Dewi Izzwi^c](#); [Razali, Fazlida Mohd^b](#); [Zolkafil, Salwa^b](#) ; [Said, Jamaliah^b](#) [Save all to author list](#)^a School of Management, Universiti Sains Malaysia, Penang, 11800, Malaysia^b Accounting Research Institute, Universiti Technology MARA, Shah Alam, 40450, Malaysia^c Faculty of Business, Accountancy & Social Sciences, Universiti Poly-Tech Malaysia, Cheras, 56100, Malaysia[View PDF](#) [Full text options](#) [Export](#) [Abstract](#)[Author keywords](#)[Sustainable Development Goals 2023](#)[SciVal Topics](#)[Metrics](#)[Funding details](#)**Abstract**

Purpose: This study aims to identify and examine the relevance of implementing remote work by small and medium-sized enterprise (SME) business operators during the post-COVID-19 era in developing nations. **Design/methodology/approach:** The study utilised a qualitative methodology, conducting interviews with twenty SME businesses, including business leaders and management level employees. It explores the challenges faced by these operators in maintaining remote work and its impact on their business operations. Data was analysed and compiled using ATLAS.ti software. **Findings:** The findings indicate that not all SME are capable of sustaining remote working environments. The nature of the business plays a crucial role in providing flexibility to employees in their operations. There are also weaknesses in remote work security that need to be addressed, as they can potentially impact business operations and performance. **Research limitations/implications:** The implications of the pandemic on business operations, regardless of size, are significant globally. This study sheds light on the challenges

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(2010) *International Journal of Business and Society*, 11 (1), pp. 77-88. Cited 23 times.

☐ 2 Allen, T.D., Golden, T.D., Shockley, K.M.

How effective is telecommuting? Assessing the status of our scientific findings

(2015) *Psychological Science in the Public Interest*, 16 (2), pp. 40-68. Cited 758 times.

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☐ 3 Amini, Z., Arasti, Z., Bagheri, A.

Identifying social entrepreneurship competencies of managers in social entrepreneurship organizations in healthcare sector

(2018) *J. Glob. Entrep. Res.*, 8 (1), pp. 1-14. Cited 16 times.

☐ 4 Andrikopoulos, C.

Robotics Technology in Agro-food SME Clustering after the COVID-19 Crisis in Europe: Legal aspects and socio-economic implications

(2021) *Eur. J. Law Technol.*, 12 (2). Cited 3 times.
