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Article

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Impact of COVID-19 on Singapore human resource practices

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ABSTRACT

The COVID-19 pandemic has completely changed the landscape of organisations, which requires HR professionals to work closely with management to adapt to transformational changes. This research aims to study the impact of COVID-19 on HR practices in Singapore, focusing on remote work and communication. Realism and a deductive approach have been adopted in this Descriptive quantitative research, with the survey as the research strategy to explore remote work experiences and communications during COVID-19 in Singapore. As a cross-section study, the online questionnaire was used to collect responses from 102 employees with different backgrounds from different organisations and industries. It was found that almost half of the employees felt that the impact of COVID-19 on them was moderate, with more than 70% of employees working from home. Employees felt that government advisory was the most important information, and organisations effectively responded to COVID-19 updates. In the post-COVID-19 era, future scholars should consider what organisations and human resource departments must prepare when employees return to the office. Research contributions and implications include recommendations for remote work practices, implementation of partial remote work, good work schedule to improve efficiency and recommendations for communication practices, upgradation of IT systems and skills.

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1. Introduction

The COVID-19 pandemic has completely changed the landscape of organisations, which requires Human Resource (HR) professionals to work closely with management to adapt to transformational changes. One of the most prominent challenges is to adjust the existing working practices of employees. This research studies COVID-19 impact on human resource practices in Singapore, with a focus on remote work and communication. This research also aims to discover human resource practices to improve the efficiency of remote work and communication. The human resource functions in an organisation are to manage and develop employees. HR functions are transforming from focusing on HRM to developing organisational effectiveness. HR now plays the role of a strategic partner and has an essential impact on the company's performance ((Mitsakis, 2014).

Since the COVID-19 outbreak last December, the confirmed cases worldwide have reached 72,851,747 as of 18 December (World Health Organisation, 2020). The global unemployment rate in November was 7.3%, which was 2.1% higher than in February before COVID-19 hit the global labour market (OECD, 2020). In Singapore, the unemployment rate in Q3 reached 3.6%, an increase of 1.3% over the same period last year (Ministry of Manpower Singapore, 2020). One of the challenges during COVID-19 was adjusting employees'

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existing working conditions, such as changing to remote work and implementing new workplace procedures to reduce the contact between employees (Carnevale & Hatak, 2020). Similarly, Carnevale and Hatak (2020) highlighted that organisations had difficulties in people management due to physical distance, including remote work, company policy implementation, communication, employee well-being, etc. In the current COVID-19 situation, these difficulties apply to HRM when facing distance-related challenges. This research will study COVID-19 impact on HR practices in Singapore, focusing on remote work and communication, and intends to unearth HR practices to improve remote work and communication efficiency.

This lockdown brought special challenges to HRM. One of the biggest challenges was remote work. For many employees, this was not only their first time working from home, but they also felt some anxiety. Remote work allowed employees to have flexible home time and reduce travel time. However, employees must have sufficient self-discipline to ensure they perform similarly in the office (Hilton, 2020). Another challenge was communication. During this period, employees worked from home and could not meet each other. Effective communication was essential, not only for daily work but also for information about COVID-19 (PEXNetwork, 2020). Singapore government has implemented a series of measures to prevent the spread of coronavirus. The Ministry of Finance Singapore (Ministry of Finance Singapore, 2020) has launched different job schemes to support employees and organisations. Therefore, HR department needs to constantly adjust company policies and procedures to respond to the government's requirements. Further clarity on how to communicate the changes to employees effectively while working from home is challenging for HR.

COVID-19 has affected HR practices worldwide, including Singapore. Organisations and HR departments have implemented remote work practices in accordance with government measures and policies. This research studied the following questions,

- What challenges and difficulties do working employees in Singapore face during the COVID-19 pandemic?
- How do working employees experience remote work during the COVID-19 pandemic?
- How do working employees experience communication during the COVID-19 pandemic?
- How will human resource management help improve employees' remote work effectiveness and communication experiences?

This research focuses on studying the impact of COVID-19 on HR practices in Singapore, focusing on remote work and communication. This research also aims to discover practices to improve the efficiency of remote work and communication. The objectives of this research are as follows,

- To study the challenges and difficulties faced by working employees during COVID-19 in Singapore
- To study remote work challenges and communication experience of employees during COVID-19 in Singapore
- To evaluate the effectiveness of communication and remote work experiences during COVID-19 in Singapore
- To unearth human resource practices to improve remote work effectiveness and employees' engagement

2. Literature review

The literature review studies and analyses previous research articles published by experts and scholars. These research studies were carried out in related fields. Literature review summarises the content of the reviewed articles, conducts detailed analysis, studies different points of view, identifies research gaps, predicts future research trends, and develops conceptual models for new research topics and fields.

2.1. The development trend of remote work

On the development of the remote work trend, Gajendran et al. (2015) analysed the effectiveness of remote work even before the Covid-19 pandemic. They analysed the data from 467 employees whose

organisations had offered remote work arrangements. The study found that remote work positively affected employee benefits and job performance. It also argued that organisations with remote work practices have appeared to achieve great performance. They suggested that future research needs to prove that remote work could help to improve the working environment under certain circumstances. However, (Ter Hoeven & Van Zoonen, 2015) had a different point of view. They argued that flexible work arrangements such as remote work would negatively impact employees' well-being due to different interruptions.

Another study on remote work development was conducted by Felstead and Henseke (2017). They have pointed out that remote work has become more and more popular and has developed into a 'win-win' situation for both employees and organisations. Remote work may increase employees' commitment and job performance. The authors have assessed labour market data reports from official sources and discovered that only one-third of remote work practices had been implemented because of knowledge economy transformation and flexible working arrangements. They concluded that remote work positively affected employees' commitment and satisfaction. The authors suggested that researchers could study the other two-thirds of the reasons for remote work implementation in future studies. The above point of view was also supported by Kim and Hollensbe (2017), who concluded that remote work would be an inevitable trend in the future. (Hunter, 2019) mentioned that remote work could improve the organisation productivity and employee creativity. (Schall, 2019) has also highlighted that remote work would increase employees' job satisfaction. Since the outbreak of COVID-19 in December 2019, many countries have implemented lockdowns to reduce face-to-face contact (Salcedo et al., 2020). Many organisations imposed remote work practices. Phillips (2020) said that COVID-19 was like an accelerator pushing the workforce to arrange remote work practices. Now, it is a good opportunity for researchers to study remote work experiences and effectiveness.

2.2. COVID-19 impact on HRM and employees

Historically, pandemics and epidemics have had a major impact on world development, usually accompanied by a widespread economic recession, organisation, and HR management transformation, for example, the SARS outbreak in 2003. Most organisations (especially the hotel industry) have adopted various cost-cutting measures, such as reducing working hours, pay-cut, and unpaid leaves (Lee & Warner, 2005). The COVID-19 pandemic has had the same impact and completely changed the landscape of organisations, which requires HR professionals to work closely with management to adapt to transformational changes. Hamouche (2020) studied the articles and found that COVID-19 has caused many stressors for employees. Many organisations have been disrupted by the pandemic, and employees felt financial crises and work insecurity. Employees were isolated at home disturbed by misinformation and disinformation, causing heavy psychological distress and fear. HR department and top management should communicate with employees effectively to reduce their stress levels. The author suggested that future scholars could explore more details about the impact of COVID-19 on employees.

Dirani et al. (2020) discussed challenges faced by employees and the role of HR experts during COVID-19. They analysed documents along with case studies and found that different employees faced different challenges in the crisis. Some employees feared that they would lose their jobs, and some employees were under tremendous psychological pressure. All these situations occurred due to unknown crises, unreliable information, and dynamic changes. HR department has played an important role during the crisis. HR professionals must listen to employee feedback, cooperate with management, provide solutions to support employees' physical and mental health and help them overcome difficulties. The authors recommended that future scholars explore the key interventions applied during a crisis and predict the possible outcomes.

Employee adjustments and well-being during COVID-19 were analysed. Carnevale and Hatak (2020) focused on how remote work could help organisations respond to dynamic changes. They have studied various research articles and concluded that remote work would become more and more common as part of employee adjustments during COVID-19. At the same time, organisations need to improve and enhance employee well-being to help employees cope with the challenges. The authors have suggested that scholars and researchers could study remote work experiences and effectiveness compared to working in an office for future research.

Kaushik and Guleria (2019) have analysed employee relations and engagement during COVID-19, focusing on employee communication. The authors have collected secondary data from various research articles and publications. They have found that effective communication between the organisation and employees could assist employees in solving their difficulties and encourage them to continue working with the organisation. Therefore, good communication plays a significant role in improving employee satisfaction and performance. In the future, organisations should focus on using digital technology to keep their business activities going and improve communication between the organisation and employees.

2.3. Remote work analysis during the pandemic

Remote work and its impact on human resource productivity are critical during COVID-19 period. Its quality and effectiveness are very different from working in the office. In order to evaluate the efficiency and quality of remote work, Raišienė et al. (2020) surveyed employees who worked remotely during COVID-19 in Lithuania. The results have shown that remote work has brought communication difficulties to employees. Work efficiency and quality depend on employees with different conditions, such as age, gender, position and experience. Young and middle-aged employees were generally happier with remote work practices than older employees because they had more knowledge and experience. The authors encouraged future researchers to investigate remote work efficiency with more respondents and wider regions.

Caligiuri et al. (2020) have completed another survey by collecting remote work practices from 800 global HR experts to study how remote work measures coped with the pandemic. The results showed that 88% of employers implemented remote working practices during COVID-19. However, this practice caused negative impacts on employees, such as longer working hours and family conflicts. Although the pandemic posed different challenges to organisations, it also created opportunities for organisations to improve their management. The authors have suggested that future scholars could explore how employers can create a safe and healthy employee environment through flexible work arrangements. Asad and Kashif (2021) highlighted that during the COVID-19 pandemic, flexible management allowed employees to work from home, continue their operations with minimum delays in orders, and perform sustainably. This shows that remote working does have a productive impact on the organisation.

It was also found that employees had difficulty balancing work and life when working remotely, especially for employees who started working remotely for the first time during COVID-19 in India (Patil & Gopalakrishnan, 2020). These challenges could negatively affect employees, such as emotional stress, non-cooperation with others, loss of trust, resistance to new ideas, and reluctance to share. However, working from home would be a popular trend in the future of workforce development (Felstead & Henseke, 2017). Scholars and researchers should explore how to strengthen remote work to have the same effectiveness as working in an office. However, some other studies have found that remote work may not bring more satisfaction and autonomy to employees because some organisations would use software to track and monitor employees' work performance (Bierema, 2020).

2.4. Communication analysis during the pandemic

Good communication would connect the interaction and cooperation between senior management, human resource department, and employees to achieve the company's strategic goals during crises (Bas, 2012). Kashif et al. (2020) highlighted that the pandemic has changed how things are done in the world. The study emphasised that to survive in situations, all organisations need to change and implement change successfully, including communication among the staff. When employees face unknown situations, unreliable information, and dynamic changes during a crisis, they feel fear, pressure, or even fear (Dirani et al., 2020). Good and effective communication between employees and organisations would be crucial to help employees overcome the crisis (Reese, 2020). (Li et al., 2020) also agreed that poor communication could cause employees to have a negative impression of their remote work experience during COVID-19. Also, it is noted that the communication of reliable information would lead to effective communication. Mheidly and Fares (2020) have analysed published articles and case studies and found

that reliable communication would help the organisation to convey reliable and useful information to employees, help the organisation implement preventive measures and increase employees' health awareness and confidence in the organisation.

Similarly, in the context of organisations like Higher Education Institutions, communication issues do exist among the students and staff due to the sudden invasion of the pandemic. It was very well studied by Al Fadhel et al. (2022), who explored measures considered by Higher Education Institutions in the Gulf Cooperation Council countries in response to COVID-19. They highlighted that increasing training and dependence on technology was suggested to maintain sustainability in the quality of education, ultimately blending learning, which would assist in improved communication among the staff and students. Also, communication issues due to COVID-19 affect green transformational leadership, green entrepreneurial orientation, and the performance of SMEs. Therefore, effective communication helps influence green transformational leadership and entrepreneurial orientation even during COVID-19 (Majali et al., 2022).

A global scale survey has shown that some organisations communicated COVID-19 news with employees regularly (such as daily or weekly), but some organisations failed to do so. Employees had no choice but to search for relevant COVID-19 news from official sources, such as the government's official website and online media platforms. When working remotely, employees cannot communicate face-to-face, which causes difficulties in communication between employees and the organisation. Employers should use digital technologies like e-mail, messaging applications, online meeting software, and other online channels to update employees with time-critical news. However, the authors had limited responses in the survey, and they encouraged future researchers to collect more data from wider regions (Sanders et al., 2020).

2.5. Gap analysis and conceptual model

The above research reviews have focused on various HR practices and adjustments, such as remote work and communication experiences. The trends and developments of remote work have been discussed in several articles. Most of the literature focused on employees' experiences during COVID-19 on a global scale, some of which were concentrated in specific countries and regions (such as India and Lithuania). However, there was a lack of research on employees' experiences in Singapore. Therefore, this research studied the challenges and adjustments in HRM, especially focusing on remote work and communication practices during the COVID-19 period in Singapore. It aims to develop human resource management practices to improve the effectiveness and satisfaction of employees when working remotely. Based on the research gap and to meet the research objectives and purpose, the conceptual framework for this research is developed and shown in Figure 1.

The research commenced an examination of the challenges and impact of COVID-19 on employees, considering factors such as age, gender, educational backgrounds, positions, organizations, and

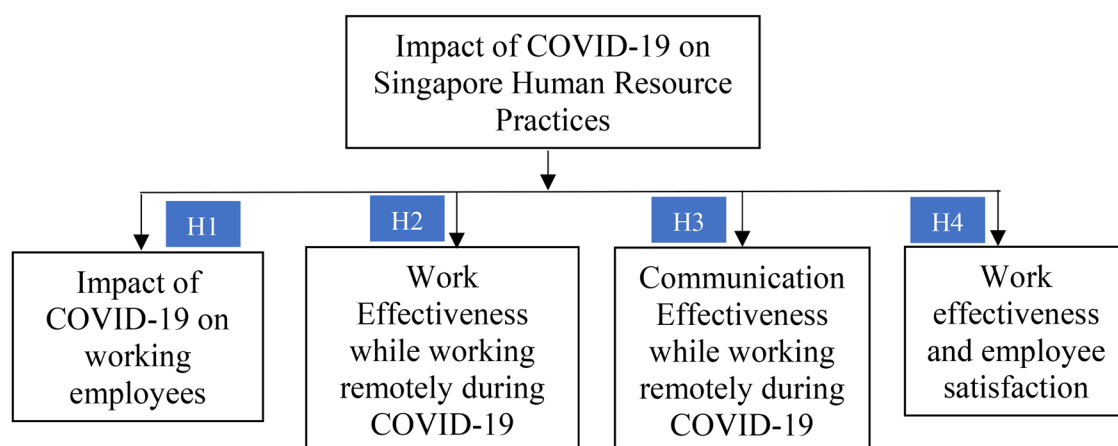


Figure 1. Conceptual framework for the study on the impact of COVID-19 on Singapore Human Resource Practices.

industries. Then, the research focused on two main areas: remote work and communication experience. The research studied the challenges faced by employees in remote work, such as longer working hours, physical health, mental health, etc., examined the resources that helped employees overcome crises, and finally evaluated the effectiveness of remote work. The same concept applies to the communication experience. The research studied what communication content was important to employees, then identified the most used communication channels, and finally evaluated the effectiveness of communication. The study focuses on several dependent variables related to communication and remote work, which are influenced by the independent variable (COVID-19). The study focuses on three main dependent variables:

Variety of Challenges and Difficulties During COVID-19 (Dependent Variable 1): The study investigates how COVID-19 has led to various challenges and difficulties experienced by employees in Singapore. It seeks to understand the range of issues and obstacles arising from the pandemic's impact on the workplace.

Remote Work Experience (Dependent Variable 2): Another dependent variable is the remote work experience of employees during the COVID-19 pandemic. The study examines how the shift to remote work, necessitated by the pandemic, has affected employees.

Communication Experience (Dependent Variable 3): The research assesses how the experience of communication within organizations is affected by the presence of COVID-19. It explores whether the pandemic has influenced the quality, effectiveness, and satisfaction related to communication practices among employees.

By examining these three dependent variables, the study seeks to understand how the independent variable, COVID-19, has influenced human resource practices in Singapore. The ultimate goal is to identify HR practices that can address the challenges and difficulties faced by employees, enhance the remote work experience, and improve the communication experience based on the data analysis related to these variables. All these variables need to be explored when collecting data from different employees. Eventually, the research aims to identify HR practices that improve the efficiency of remote work and communication based on data analysis. Hammami et al. (2021) highlighted that such analysis of dependent variables during COVID-19 would possibly have a higher impact on collaborative capabilities, which have a direct and significant effect on performance. It assists in understanding the various knowledge capabilities and establishes interlinkages among them in the firm context.

2.6. Research hypotheses

Hypotheses are constructed to test the relationship between different variables (Ruiller et al., 2019). This research will study COVID-19 impact on working adults in Singapore, their remote work experiences, communication experiences, and relevant effectiveness. The following hypotheses were used to verify the impact of COVID-19 to address the research questions, measuring the experiences of remote work and communication:

H1: There is no significant impact on working employees during COVID-19 in Singapore

H2: There is no significant impact on work effectiveness while employees are working remotely during COVID-19 in Singapore

H3: There is no significant impact on communication effectiveness while employees are working remotely during COVID-19 in Singapore

H4: There is no significant relationship between work effectiveness and employee satisfaction

3. Materials and methods

Methods and methodologies play an important role in research, including research design, philosophy, approach, strategy, time horizons, sampling technology, data collection process, data validity and reliability, and ethics issues. Details related to the methodological approach adopted in the research are presented below.

Epistemology provides information for theories; these theories determine the research methodology, and then the research methodology determines the research methods (Al-Ababneh, 2020). This research adopted epistemological methods, covering related knowledge in the research field for in-depth discussion. Realism has been adopted in this research, as it is a scientific approach to knowing the world straight forward. Reality is the essence of truth: the object exists independent of the world's thoughts (Ruiller et al., 2019). One of the branches of epistemology is realism, a scientific method that can assume the development of knowledge to conduct data collection, analysis, and understanding of data. This meaning becomes clearer when the relevance of realism in business and management research is used (Saunders et al., 2019). As such, the research philosophy has been applied to this research on HRM practices, as the Coronavirus has spread globally and brought serious effects since December 2019. Employers and employees should work together to overcome the crisis and challenges, as the pandemic has interrupted organisations business and HRM practices. The present study is discursive using quantitative research methodology, based on analysis and synthesis of the literature based on which the framework was developed by Sulaiman et al. (2023), concurred with the objective of stimulating more research in areas identified as still under-explored.

Further, this research used descriptive quantitative research and aimed to obtain more details about a specific event or phenomenon that was occurring and to examine it, which involved description, analysis, and correlation. The basic reason to use descriptive quantitative research is to determine the relationships between different factors and variables (Al-Ababneh, 2020). The present research uses a deductive approach to research theories and test hypotheses, identify conceptual theories, start data collection and analysis, and approve and support theories using data analysis and discovery. This approach is used to study the existing phenomena and hypotheses and test the relationships between different variables (Al-Ababneh, 2020). This research studied HRM practices during the pandemic, set hypotheses between different variables, collected and analysed data, and discovered the effectiveness of remote work and communication. Adopting the deductive approach research, hypotheses were constructed to test the relationship between variables, such as remote work experiences, communication experiences, and effectiveness (O'Leary & Hunt, 2017). Further, this research used a survey as the research strategy to explore the experiences of remote work and communications during COVID-19 in Singapore.

Mono method was used to collect data because it could collect it quickly for an anonymous survey. In this research, mono quantitative method was adopted because an online questionnaire was used for data collection, and the survey was anonymous. A cross-sectional time horizon was used in this research. This was because most countries and regions have started lockdowns since April 2020, and most employees have very limited remote working experience.

This research used convenience sampling techniques to select participants because the researcher chose convenient participants to answer the survey questions (Taherdoost, 2016). The Contact Method was 'Online' to avoid face-to-face contact and reduce virus spread during the pandemic. Participants would receive website links and respond to the survey 'anonymously'. The targeted participants were the general public people, and they were working employees from different industries and different companies with different positions. The sample size was 102 participants for the current study, so one hundred samples would be considered large. The population of the study is the workforce in Singapore, which is more than three million working adults (Ministry of Manpower Singapore, 2020). The sample size of 102 is definitely not representative of the entire population, but for statistical purposes, it is an acceptable large sample, and the results can be generalised. For instance, Sekaran and Bougie (2016) propose the rules of thumb for determining sample size: 'sample sizes larger than 30 and less than 500 are appropriate for most research'.

Questionnaire is used as a research instrument to collect data and information to study employees' remote work and communication experiences. It combined demographic, close & open, and rating questions, which involved nominal and ordinal scales (Almquist et al., 2019). Content validity has been conducted in this research to discuss research objectives and survey questions with relevant experts (Taherdoost, 2016). This research is about HRM, focusing on remote work and communication. Two HR managers with more than 20 years of HR experience in different industries have been consulted to validate the contents of the research instrument. Construct validity was tested by discussing statistics with relevant experts (Taherdoost, 2016). Construct validity was tested by consulting two statistics lecturers

with more than 20 years of research and teaching experience in the areas of statistics and management science. A reliability test measures the data collection method and analysis and will generate stable findings. Cronbach's Alpha formula is used to analyze whether the survey questions are stable and consistent. The coefficient Cronbach α between 0.7 and 0.9 has high reliability (Taherdoost, 2016). Reliability results analysis for this research is shown in Table 1.

All the Cronbach α values were more than 0.7, showing that the research instrument was reliable.

4. Results and discussion

Data was collected from 102 respondents, and SPSS software was used to conduct various tests, such as Chi-Square, Paired Sample T, Reliability, and Bivariate correlation tests. Those tests were used to evaluate factors that affected employees' remote work efficiency and communication effectiveness by different groups, such as age, gender, academic level, marital status, and position in the organisations. For instance, the Chi-Square test is used to investigate associations, independence, goodness of fit, or homogeneity in the data. Also, the Chi-Square tests are used to test the hypotheses about the relationship between categorical variables. The results of the test helped to accept or reject the hypotheses.

4.1. Demographic characteristics

Demographic analysis plays a primary role in understanding the basic background of the participants. As shown in Table 2, a total of 102 employees with different educational backgrounds, positions, organisations, and industries participated in the survey.

In terms of age group, 55.88% (N=57) were '31–45 years old'. Regarding the academic level, 15.69% (N=16) held tertiary certificates. According to 'Labour Force by Demographic Characteristics' (Ministry of Manpower Singapore, 2020), age group '30–49' accounted for 52.4% of total employment, and 'Tertiary certificates' holders were 15.9%. Therefore, the sample size in this research reflected the employment situation during the lockdown period.

Table 1. Reliability statistics.

Questions	Cronbach α	Number of items
Challenges and difficulties faced by working employees during COVID-19 in Singapore	0.72	10
Employees' remote work experiences and effectiveness during COVID-19	0.71	5
Employees' communication experiences and effectiveness during COVID-19	0.81	10
Reliability score for all the above questions	0.83	25

Source: Computed for this study.

Table 2. Demographic characteristics.

Variables	N	%
Age	18–30 years old	20 19.61
	31–45 years old	57 55.88
	46–55 years old	22 21.57
	56 years old and above	3 2.94
Gender	Male	42 41.2
	Female	60 58.8
Academic Level	Secondary and below	4 3.92
	Tertiary Certificates	16 15.69
	Bachelor's Degree	55 53.92
	Master's Degree	27 26.47
Marital Status	Single	38 37.25
	Married	58 56.86
	Other	6 5.88
Position	Top Management	14 13.73
	Management	32 31.37
	Executive	34 33.33
	Supervisor / Team leaders	9 8.82
	General Worker	13 12.75
Total	102	100

(Source: Computed).

4.2. Challenges and difficulties during COVID-19

This part has studied the challenges and difficulties, including financial crisis, work stress, family issues, and physical and mental health. The results of 'Descriptive Statistics' are shown in Table 3.

Among all the mean values, the lowest mean value was 2.66, which reflected that 'work stress' was the biggest challenge during COVID-19.

In the opinion of COVID-19 impact on employees and their families, the results are shown in Table 4. It has shown that 44.1% (N=45) of participants considered that COVID-19 affected themselves or their families to a moderate extent, while 31 participants were affected to a large extent and 6 participants to a very large extent.

COVID-19 also impacts employee benefits, such as salary reduction, leave application, relocation, and withdrawal of allowances. The results of 'Descriptive Statistics' are shown in Table 5.

Based on the results, the highest mean value was 0.43, which reflected that many organisations had implemented leave practices to enable employees to take annual leave to save organisational cash flow. This was because the balanced annual leave would be calculated as encashment and accounted for in the fiscal year cash flow statement. Different resources from all parties have assisted employees, including government support, employers, communities, family members, and even friends. The results are shown in Table 6.

Table 3. Descriptive statistics for challenges during COVID-19.

Challenges	Most challenging	Least challenging	Mean
Financial crisis	1	5	3.12
Work stress	1	5	2.66
Family issues	1	5	3.26
Physical health	1	5	3.30
Mental health	1	5	2.96

(Source: Computed).

Note: 1 = most challenging, 5 = least challenging.

Table 4. The impact of COVID-19 on you or your family.

Extent that COVID-19 has affected the employee and their family	Number of participants
Very large extent	6
Large extent	31
Moderate extent	45
Small extent	17
No effect	3

(Source: Computed) .

Table 5. Descriptive statistics for the impact of employee benefits during COVID-19.

Impacts	Mean
Reduction of salary	0.31
Impose leave application	0.43
Relocation	0.14
Withdrawal of allowances	0.15
Others	0.28

(Source: Computed) .

Table 6. Descriptive statistics on employee crisis resources amid COVID-19.

Resources	Most helpful	Least helpful	Mean
Government	1	5	2.64
Employer	1	5	2.63
Community	1	5	3.25
Family	1	5	2.54
Friends	1	5	2.98

(Source: Computed).

Note: 1 = most helpful, 5 = least helpful.

The above results showed that the lowest mean value among all the resources was 2.54, which showed that 'family' was the biggest support for employees during COVID-19, followed by employer and government support. Almost half of employees generally felt that the COVID-19 impact on them was moderate. Work pressure and imposition of leave were the biggest challenges. However, they believed that they could overcome the crisis with the support of their family members.

4.3. Remote work experience

During the COVID-19 period, most organisations implemented remote work practices. The results of remote work practices are furnished in Table 7.

The chi-square test has shown that the result was significant, $\chi^2 (2, N=102) = 68.47, p < 0.05$, indicating that remote work was the most popular practice. Further, Table 6 shows that working from home was significantly more popular than working in the office/partially. This also approved that remote work could help improve the working environment under certain circumstances, such as COVID-19 (Gajendran et al., 2015), and would be an inevitable trend in organisation development (Kim & Hollensbe, 2017). The research has also investigated the working hours before and during COVID-19. As shown in Table 8, the P value, which was the Significance value of the correlation coefficient ($r=0.652$), was $0 < 0.05$. Hence, the correlation between employees' working hours before and during the COVID-19 pandemic was significant and positive.

As shown in Tables 9 and 10, a paired sample t-test with α of 0.05 was used to compare the working hours before COVID-19 pandemic ($M=9.05$, $SD = 1.36$) and during COVID-19 period ($M=9.90$, $SD = 2.88$).

Table 7. Test Statistics for Remote Work Practices during COVID-19.

Test statistics for remote work practices during COVID-19	Did you work from home during COVID-19?
Fully working from home	70.59%
Partially working from home	23.53%
Not working from home	5.88%
Chi-square	68.471
df	2
Asymp. Sig.	.000

^a0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 34.0.

(Source: Computed).

Table 8. Paired Samples Correlations for working hours before and during COVID-19.

Correlations for working hours before and during COVID-19	Sample size	Correlation	Sig
Pair 1 What were your actual average working hours per day before COVID-19?	102	.652	.000
What are your average daily working hours while working from home during COVID-19?			

(Source: Computed).

Table 9. Paired Samples Statistics for working hours before and during COVID-19.

Paired Samples Statistics for working hours before and during COVID-19	Mean	Std. Deviation	Std. Error Mean
Pair 1 What were your actual average working hours per day before COVID-19? <and>	9.0544	1.35632	.13430
What are your average working hours per day while working from home during COVID-19?	9.9064	2.88176	.28534

(Source: Computed).

Table 10. Paired Samples Test for working hours before and during COVID-19.

		Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
Paired Samples Test for working hours before and during COVID-19		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	Q1 and Q2	-.85196	2.24661	.22245	-1.29324	-.41068	-3.830	101	.000

(Source: Computed).

Note:

Q1: What were your actual average working hours per day before COVID-19?

Q2: What are your average daily working hours while working from home during COVID-19?

Table 11. Descriptive Statistics for Challenges Faced While Work from Home.

Challenges faced while work from home	Most challenging	Least challenging	Mean
Longer working hours	1	5	2.63
Conflict with family members	1	5	3.63
Physical health	1	5	3.14
Mental health	1	5	2.88
Lack of communication with manager/colleagues	1	5	2.91

(Source: Computed).

Table 12. Chi-Square Tests for Remote Work Effectiveness Vs. Gender.

Remote work effectiveness Vs. Gender	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.874	1	.009		
Continuity Corrections	5.853	1	.016		
Likelihood Ratio	6.914	1	.009		
Fisher's Exact Test				.015	.008
Linear-by-Linear Association	6.806	1	.009		
N of Valid Cases	102				

^a0 cells (.0%) have an expected count of less than 5. The minimum expected count is 18.53.

^bComputed only for a 2×2 table.

(Source: Computed).

Table 13. Remote work effectiveness Vs. gender.

Remote work effectiveness (Number of employees)	Gender	
	Male	Female
More effective	17	40
Less effective	25	20

(Source: Computed).

On average, employees worked 0.85 hours, 95%CI [-1.29, -0.41], longer during COVID-19 than before. This difference was statistically significant, $t(101) = -3.83$, $p < 0.05$. Remote work practice reduced their travel time between home and office (Hilton, 2020). However, remote work also brought challenges to employees.

As shown in Table 11, the lowest mean value was 2.63, reflecting that longer working hours were the biggest challenges employees faced while working from home. Remote work allowed employees to have flexible time at home. However, employees must have sufficient self-discipline to ensure that they work effectively (Hilton, 2020).

As shown in Table 12 above, a Pearson's chi-square test (with $\alpha = 0.05$) was done to assess whether work from home's effectiveness was related to gender. The result was significant, $\chi^2(1, N = 102) = 6.87$, $p < 0.05$. As shown in Table 13, the effectiveness of working from home for female employees was significantly higher than for male employees. This result could satisfy some of the suggestions from Carnevale and Hatak (2020), who suggested studying remote work experiences and effectiveness for future research.

According to the Ministry of Health Singapore (2020), Singapore government reopened workplaces gradually at different phases according to the infection rate. In the post-COVID-19 era, organisations may continue allowing employees to work from home, return to the office, or partially practice (Ministry of Health Singapore, 2020). As shown in Table 14, a Pearson's chi-square test (with $\alpha = 0.05$) was done to examine whether the choices of work practice (home, office, or partially) were relevant to gender. The result was significant, $\chi^2(2, N = 102) = 7.65$, $p < 0.05$.

Table 14. Chi-square tests for remote work choice Vs. Gender.

Remote work choice vs. gender	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.651	2	.022
Likelihood Ratio	8.039	2	.018
Linear-by-Linear Association	2.056	1	.152
N of Valid Cases	102		

*0 cells (.0%) have an expected count of less than 5. The minimum expected count is 10.29. .
(Source: Computed).

Table 15. Remote work choice Vs. Gender.

Remote work choice (Number of employees)	Gender	
	Male	Female
Work from home	5	20
Work in office	18	14
Partially work from home	19	26

(Source: Computed).

Table 16. Effectiveness of communication while working from home.

Effectiveness of communication while working from home	Percentage of participants
Very effective	20.59%
Effective	28.43%
Moderately effective	34.31%
Less effective	13.73%
Not effective	2.94%

(Source: Computed) .

As shown in Table 15, the choice of work partially from home for female employees was significantly higher than for male employees. Overall, 70.59% of employees were working from home. Longer working hours were the biggest challenges, and female employees felt that it was more effective to work from home. The choice of work partially from home for female employees was significantly higher than for male employees.

4.4. Communication experience

Communication is another challenge while working from home. During this period, employees cannot meet each other. Effective communication between employees and the organisation is essential (PEX network, 2020). Table 16 shows the effectiveness of communication while working from home. It was found that 20.59% ($N=21$) participants considered that communication was very effective, 28.43% ($N=29$) effective, and 34.31% ($N=35$) moderate.

Technologies play an important role during COVID-19; they connect people while working from home. Employees and organisations use different communication channels, such as email, message, telephone, online meeting software, etc.

The results in Table 17 show that the lowest mean value was 2.13, which proved that message applications (such as WhatsApp) were the most used communication channel during COVID-19, followed by emails. This supported (Sanders et al., 2020) research, which suggested employers should use digital technologies, such as e-mail and messaging applications, to update employees with time-critical news. Effective communication between employees and organisations is for daily work and information about COVID-19 from government authorities and agencies (PEXNetwork, 2020).

The results in Table 18 show that the lowest mean value was 2.19, which showed that government advisory was the most important information employees would like to receive during COVID-19. Overall, employees considered government advisory the most important information for communication, and organisation effectively responded to COVID-19. Messaging applications were the most often used communication channel, and the effectiveness was moderate.

Table 17. Descriptive statistics for communication channels while work from home.

Communication channels while Work from Home	Use most often	Use least often	Mean
Email	1	5	2.14
Message (e.g. WhatsApp)	1	5	2.13
Tele-conversation	1	5	2.85
Online meeting	1	5	2.68
Others	1	5	3.79

(Source: Computed).

Table 18. Descriptive statistics for communication information update by organisations.

Communication information update	Most important	Least important	Mean
Government advisory	1	5	2.19
Number of COVID-19 cases in Singapore and worldwide	1	5	2.95
Safety tips	1	5	2.56
Tips to help physical and mental health	1	5	2.60
Tips to improve remote work efficiency	1	5	2.70

(Source: Computed).

Table 19. Correlations between challenges that employees faced during COVID-19.

Correlations between Challenges that Employees faced during COVID-19		Financial crisis	Work stress	Family issues	Physical health	Mental health
Financial crisis	Pearson Correlation	1	.412**	.076	.052	.173
	Sig. (2-tailed)		.000	.449	.605	.081
	N	102	102	102	102	102
Work stress	Pearson Correlation	.412**	1	.223*	.119	.364**
	Sig. (2-tailed)	.000		.024	.232	.000
	N	102	102	102	102	102
Family issues	Pearson Correlation	.076	.223*	1	.317**	.325**
	Sig. (2-tailed)	.449	.024		.001	.001
	N	102	102	102	102	102
Physical health	Pearson Correlation	.052	.119	.317**	1	.588**
	Sig. (2-tailed)	.605	.232	.001		.000
	N	102	102	102	102	102
Mental health	Pearson Correlation	.173	.364**	.325**	.588**	1
	Sig. (2-tailed)	.081	.000	.001	.000	
	N	102	102	102	102	102

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

(Source: Computed).

4.5. Correlations between Challenges that Employees faced during COVID-19

In this research, the various challenges employees faced during COVID-19 were considered with correlation to evaluate the relationship among those challenges. Those results are shown in Table 19.

The correlation results highlighted in grey have shown that some factors were positively correlated at 0.01 level and 0.05 level significance. The factor 'physical health' was found to have the highest correlation ($r=0.588$) with 'mental health' and 'financial crisis' with 'work stress' ($r=0.412$). It was also found that 'work stress' having correlated with 'mental health' with the value ($r=0.364$) and 'family issues' correlated with 'work stress' factor ($r=0.223$), 'physical health' factor ($r=0.317$) and 'mental health' factor ($r=0.325$).

4.6. Correlations of Communication between Employer and Employee during COVID-19

The communication between employers and employees during COVID-19 considered in this research was correlated to examine the relationship among those communications. The results are shown in Table 20.

The correlation results highlighted in grey have shown that some factors were positively correlated at 0.01 level and 0.05 level significance. The factor 'Tips to help physical and mental health' was found to have the highest correlation ($r=0.688$) with 'Tips to improve remote work efficiency' and high correlation with 'Safety tips' ($r=0.635$). It was also found that 'Number of COVID-19 cases in Singapore and worldwide' correlated with 'Government advisory' ($r=0.594$), 'Safety tips' and 'Tips to improve remote work efficiency' had a high correlation ($r=0.579$).

Table 20. Correlations of Communication between Employer and Employee during COVID-19.

Correlations of communication between employer and employee during COVID-19		Government advisory	Number of COVID-19 cases in Singapore and worldwide	Safety tips	Tips to help physical and mental health	Tips to improve remote work efficiency
Government advisory	Pearson Correlation	1	0.594**	0.541**	0.386**	0.234*
	Sig. (2-tailed)		.000	.000	.000	.018
	N	102	102	102	102	102
Number of COVID-19 cases in Singapore and worldwide	Pearson Correlation	0.594**	1	0.457**	0.359**	.122
	Sig. (2-tailed)	.000		.000	.000	.221
	N	102	102	102	102	102
Safety tips	Pearson Correlation	0.541**	0.457**	1	0.635**	0.579**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	102	102	102	102	102
Tips to help physical and mental health	Pearson Correlation	0.386**	0.359**	0.635**	1	0.688**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	102	102	102	102	102
Tips to improve remote work efficiency	Pearson Correlation	0.234*	.122	0.579**	0.688**	1
	Sig. (2-tailed)	.018	.221	.000	.000	
	N	102	102	102	102	102

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

(Source: Computed).

Table 21. Test statistics for impact of COVID-19 on employees and family.

To what extent do you think COVID-19 affects you or your family?	
Chi-square	60.745 ^a
df	4
Asymp. Sig.	0

^a0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 20.4.
(Source: Computed).

4.7. Verification of hypotheses

This research used a survey to determine the impact of COVID-19, remote work, and communication experiences. Four hypotheses were formulated and verified.

Hypothesis 1: There is no significant impact on working employees during COVID-19 in Singapore

As shown in Table 21, a chi-square test for goodness of fit (with $\alpha=0.05$) was conducted to assess that there was no significant impact on working employees during COVID-19. The test result was statistically significant, $\chi^2 (4, N=102) = 60.75, p < 0.05$, indicating a significant impact on working employees during COVID-19. Therefore, the null hypothesis H_1 was rejected.

Hypothesis 2: There is no significant impact on work effectiveness while employees are working remotely during COVID-19 in Singapore

A chi-square test (with $\alpha=0.05$) was conducted to examine that there was no significant impact on work effectiveness for remote work. The test result was significant, $\chi^2 (1, N=102) = 1.41, p > 0.05$ (Table 22), indicating that there was no significant impact on work effectiveness while employees worked remotely. That meant that the null hypothesis H_2 was not rejected.

Hypothesis 3: There is no significant impact on communication effectiveness while employees work remotely during COVID-19 in Singapore.

A chi-square test for goodness of fit (with $\alpha=0.05$) was done to assess that there was no significant impact on communication effectiveness for remote work. The test result was significant, $\chi^2 (4, N=102) = 30.94, p < 0.05$ (Table 23), indicating that there was a significant impact on communication effectiveness for remote work. Therefore, the null hypothesis H_3 was rejected.

Hypothesis 4: There is no significant relationship between work effectiveness and communication effectiveness

Table 22. Test statistics for impact of COVID-19 on effectiveness of remote work.

How would you think the effectiveness of working from home compared to working in the office?	
Chi-square	1.412 ^a
df	1
Asymp. Sig.	0.235

^a0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 51.0.

(Source: Computed).

Table 23. Test statistics for impact of COVID-19 on effectiveness of communication.

How would you think your communication with your manager/supervisor while working from home?	
Chi-square	30.941 ^a
df	4
Asymp. Sig.	0

^a0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 20.4.

(Source: Computed).

Table 24. Test statistics for the relationship between work effectiveness and communication effectiveness.

		How would you think the effectiveness of working from home compared to working in the office?	How would you think your communication with your manager/supervisor while working from home?
How would you think the effectiveness of working from home compared to working in the office?	Pearson Correlation	1	.552**
	Sig. (2-tailed)		0
	N	102	102
How would you think your communication with your manager/supervisor while working from home?	Pearson Correlation	.552**	1
	Sig. (2-tailed)	0	
	N	102	102

**Correlation is significant at the 0.01 level (2-tailed).

(Source: Computed).

This research calculated Pearson's correlation (r). The bivariate correlation between work effectiveness and communication effectiveness was positive and strong, with $p < 0.05$ (Table 24). Therefore, the null hypothesis H_4 was rejected.

5. Conclusion

As such, the study has investigated the COVID-19 impact, remote work and communication experiences, and their effectiveness. It can be concluded that 'work stress' was the biggest challenge faced by employees during COVID-19, 'mental health' was the second biggest challenge, followed by 'financial crisis', 'family issues' and 'physical health'. It was observed that 44.1% of participants considered that COVID-19 affected themselves or their families moderately. 30.4% of participants considered that COVID-19 greatly affected themselves or their families. It also indicated that many organisations had imposed leave practices to enable employees to take annual leave during COVID-19 and save organisational cash flow. This was because the balanced annual leave would be calculated as encashment and accounted for in the fiscal year cash flow statement. The results have shown that 'family' was the biggest support for employees during COVID-19, followed by employer and government support.

Almost half of the employees felt that COVID-19 impact on them was moderate; work stress and imposition of leave were the biggest challenges. However, they believed that they could overcome the crisis with the support of their family members.

In the context of remote work experiences and effectiveness, the results indicated that working from home was the most popular practice during COVID-19. This also approved that remote work could help to improve the working environment under certain circumstances, such as the pandemic (Gajendran et al., 2015), and would be an inevitable trend in organisation development (Kim & Hollensbe, 2017). Longer working hours were the biggest challenges that employees faced. On average, the employees worked 0.85 hours longer than before COVID-19. This difference was statistically significant and positive. The results also showed that the effectiveness of working from home for female employees was

significantly higher than for male employees. This result could satisfy some of the suggestions from Hammami et al. (2021) and Carnevale and Hatak (2020), who suggested studying remote work experiences and effectiveness for future research. It was seen that the choice of work partially from home for female employees was significantly higher than for male employees. Female employees prefer to work partially from home, and male employees prefer to work in the office. Overall, 70.59% of employees were working from home during COVID-19. Longer working hours were the biggest challenges, and female employees felt that it was more effective to work from home. Therefore, the choice of work partially from home for female employees was significantly higher than for male employees.

In relation to the communication experiences and effectiveness, it was found that 20.59% of participants considered that communication with manager/supervisor while working from home was very effective, 28.43% of participants considered it effective, and 34.31% of participants considered it moderate. Messaging applications, such as WhatsApp, were employees' most used communication channels during COVID-19, followed by emails. These results supported (Sanders et al., 2020; Sulaiman et al., 2023) research, which suggested employers should use digital technologies, such as e-mail and messaging applications, to update employees with time-critical news. Overall, employees considered government advisory the most important information they wanted to hear from the organization and effectively responded to COVID-19 updates. Messaging applications were the most often used communication channel between employees and organisations, and the communication effectiveness were moderate effective.

5.1. Research contributions

This research studied the challenges and difficulties faced by working employees in Singapore during COVID-19, including remote work experience, communication experience, and efficiency. The pandemic is ongoing, and people need to prepare for the second wave of infection as winter draws nearer (Chong, 2020). Based on the data analysis and discussion in the previous section, the following recommendations provided references for employers and human resource departments to improve employee remote work effectiveness and communication efficiency.

5.2. Recommendations / implications

This research studied the challenges and difficulties faced by working employees in Singapore during COVID-19, including remote work experience, communication experience and efficiency. The pandemic is ongoing, and people need to prepare for the second wave of infection as winter draws nearer (Chong, 2020). After conducting the data analysis in the previous chapter, the following recommendations provided references for employers and human resource departments to improve employee remote work effectiveness and communication efficiency.

5.2.1. Recommendations for remote work practices

5.2.1.1. Implementation of partial remote work. According to data analysis in the present research, male and female employees preferred partial remote work to ensure they would have flexible lifestyles and arrangements between family and work. However, more males than females chose to work in the office, and more females than males chose to work from home. Female employees felt more efficient when working from home. This is because they play different roles in family and work. Female employees need time to take care of family members, so most of them are engaged in administrative work. Male employees' job requirements are more challenging, requiring them to leave the office to seek external business opportunities, such as sales and technical staff. Therefore, organisations should implement different remote work practices for male and female employees.

On the one hand, this practice will reduce the chances of face-to-face contact between employees; on the other hand, it will maintain the normal operation of the organisation. For example, female employees can work at home for 3 days and work in the office for 2 days per week. Male employees can work at home for one day and in the office for 4 days per week. This partial remote work practice will meet different gender requirements.

5.2.1.2. Good work schedule to improve efficiency. Longer working hours were the biggest challenges that employees faced during COVID-19 while working from home. Time management is a factor that organisations and HR departments need to focus on because advanced planning can improve remote work efficiency. The working hours should be kept as the same as the office's normal working hours. The meeting agenda and meeting timetable should be planned in advance and limited to a certain duration. Organisations and management should ensure employees have appropriate private time at home, such as lunchtime or coffee breaks. The meeting hosts should not make the meeting last too long; otherwise, employees will feel tired. If employees complete tasks based on schedule, proper time management can also reduce their work pressure.

5.2.2. Recommendations for communication practices

5.2.2.1. Upgrade IT system and skills. Technology is vital to ensure effective communication between employees and organisations during COVID-19. IT professionals should be trained to troubleshoot laptops, internet websites, and technical applications. This can ensure that employees get timely IT support when they encounter IT problems while working from home. The IT departments should also be equipped with advanced software, such as Zoom apps and hardware, so employees have a friendly user system experience.

5.3. Limitations of the research

COVID-19 has impacted the full spectrum of HRM, such as remote work practices, recruitment & selection, training and development, employee communication and engagement. In addition, the impact of COVID-19 is global, but the present research only focuses on remote work and communication, and the research area is limited to Singapore. Most countries and regions started lockdown in April 2020, and employees only have about fewer months of remote working experience. The results may be different in case the remote working experiences are for a longer period. During COVID-19, face-to-face contact was strictly limited; therefore, sampling techniques and survey instruments were limited to online survey questionnaires. There were only 102 respondents, as the study has time and cost constraints that can support a larger sample size. This would lead to the question of whether the targeted participants could represent all working employees in Singapore. All survey questions were pre-designed for this research. Respondents would only answer what the researchers wanted to know, so the survey could not really discover the thoughts and ideas of the respondents.

5.4. Future research and development

Future research would study other HR factors that were impacted by COVID-19, such as recruitment and selection, training and development on a regional or global scale, using an experiment or case study approach with other sampling techniques, and collect more sample size. In the post-COVID-19 era, future scholars should pay attention to what organisations and human resource departments need to prepare when employees return to the office.

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Data sheet available upon request.

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