THE IMPACTS OF THE COVID-19 PANDEMIC ON SMEs IN ASIA AND THEIR DIGITALISATION RESPONSES

Abstract

Aim: The current paper looks into how Asian SMEs responded to digitalisation and the COVID-19 epidemic.

Method: The following research utilised a primary quantitative methodology to collect important data from a survey of 100 respondents who were both managers or staff members of SMEs.

Results: The results of the conducted investigation showed that Covid'19 has not only harmed people's mental health but also influenced the financial health of businesses around the world. The research demonstrates that the economic downturn, which has impacted corporate performance, has most caused SMEs to face downfall.

Introduction

The eruption of the coronavirus pandemic occurred in 2019 that has majorly affected the economies nationally and globally (Allam, Dey, and Jones, 2020). It has strictly impacted various organisations as they faced varying amounts of losses in the process (Sonobe et al., 2021). In addition, it is recognised that enterprises are facing numerous dilemmas which involve a decline in the consumer demand levels as well as other businesses, which is causing disturbances in the supply chain, the cancellation of the export orders, lack of raw materials utilised in the production and interruptions in transportation. Furthermore, it has been found that the spread of Covid'19 has not only affected Asia's economy but the entire world and is still in the phase of experiencing the impacts of the Covid-19 outbreak (Shinozaki and Rao, 2021). Furthermore, it is argued that the key victims of the eruption are the small, medium-sized enterprises (SMEs) as they lack in obtaining and possessing enough resources in terms of financial and managerial in comparison with the substantial firms. These firms will remain affected as they are bound and reliant on routine transactions with a restricted customer pool (Guo et al., 2020). Thus, they are suffering from

declining stock levels that lack in meeting the demand levels, whereas numerous firms find it hard to manage and operate smoothly in the foreseeable future.

In addition, SMEs are the backbone of the overall businesses that play a pivotal part in most economies, specifically in developing countries. This shows that SMEs account for the majority of businesses globally that are significant participants in creating job opportunities and global economic development. They represent around 90% of the businesses and create around 50% of the employment globally. Moreover, formal SMEs participate up to 40% of the national income (GDP) in the evolving economies (Shafi, Liu, and Ren, 2020). These numbers are importantly higher when informal SMEs are involved. SMEs are more likely to be capable of attaining bank loans than large firms that are relied on internal funds to launch and initially run their experiences. According to Burhan et al. (2021), SMEs play a significant part in developing national strategies, employment cohorts and social consistency by enhancing the standard of living of susceptible societal segments. There is a shift in businesses toward digital channels that are operated through SMEs realise the need for digital marketing to adapt successfully and compete in the new normal.

The study's overall purpose is to look into how Asian SMEs responded to digitalisation and the COVID-19 epidemic. In contrast, several issues have been identified in the current research. The major problems due to pandemic shocks have had hard hits on industries such as food processing, textiles, tourism, food and drinks services and education (Igarashi et al., 2021). These hits have merely affected the overall sales and revenue of SMEs. This study will provide advantages to various stakeholders such as managers, students, digital agencies and future researchers as it provides them with logical reasoning and the impact of the Covid-19 pandemic on SMEs in Asia and the digitalisation responses that will help them to be aware of and results in effective outcomes.

Therefore, the current study aimed to empirically examine the effect of the covid-19 pandemic on SMEs in Asia and their digitalisation responses. Considering the aim of the study, the research was illustrated upon the following objectives, which involve;

- To comprehend the notion of SMEs and digitalisation affected by Covid'19.

- To identify the challenges that SMEs in Asia face.

- To identify the impact of the Covid-19 pandemic on SMEs in Asia and their digitalisation responses.

- To provide appropriate and relevant recommendations regarding enhancing the SMEs in Asia and improving the digitalisation responses.

*** Literature Review and Hypothesis Development***

Literature on digitalisation is replete with discussing different dimensions and the kinds of SMEs in Asia. Despite this, the coronavirus pandemic is causing large-scale life loss and unembellished human suffering worldwide (Kurpayanidi and Abdullaev, 2021). It is one of the largest public health crises in living memory that has resulted in a major economic crisis, with a break in production in various countries. Economic forecasts depict an increasingly adverse effect concerning the scale of a worldwide economic recession triggered by the pandemic. There are numerous ways the coronavirus pandemic affects the economy, particularly SMEs, on both supply and demand sides (Juergensen, Guimón, and Narula, 2020).

Moreover, supply chains are disrupted, leading to a lack of parts and intermediate goods. In addition, the effect of the virus could have possible spill-overs into monetary markets with further minimised confidence and a deduction of credit (Steel and Harris, 2020). SMEs usually have a limited number of suppliers. In certain cases, SMEs would be dependent on suppliers from countries and regions with more Covid'19 cases to enhance their vulnerability. It is further determined that digitalisation is gradually valuable for SMEs for enhancing efficiencies and competitiveness (Igarashi et al., 2021). The prevailing wisdom is that in Covid'19, which has escorted in a spindle to digitalisation, there remain various challenges that SMEs have faced in doing so. The businesses adopted digital measures to compensate for the shortfall in traditional sources of revenue. As more business formations digitalise, organisations are left out of this digital uprising that will struggle to survive alone thrives.

H1: Covid-19 pandemic has had a significant impact on digitalisation.

Organisational commitment within the workplace is a relationship of employees' engagement with the enterprise (Chanana, 2021). But due to the Covid pandemic, most the firms have transformed themselves as per the current situation and have offered them the facility of Work from home (WFH) administration. Although, it was challenging for most of the employees as it lacks in providing the organisational culture at home, resulting in the absence of attention. Moreover, this situation makes employees unsure about their job security and nether the salaries. Thus, in this situation, it is the prime responsibility of the firms to take care of the well-being of the employees and involve them effectively to keep them committed and satisfied (Filimonau, Derqui, and Matute, 2020).

H2: Covid-19 pandemic has a significant impact on management commitment.

For larger firms, the importance behind digitalisation is clear where digitalisation enhances the efficiencies, competitiveness and economies of scale. Thus, the firms could utilise complex technologies in production procedures automation and data-driven quality control processes to minimise costs and enhance profit margins (Arshed et al., 2021). In addition, it depicts that digitalisation is alleged to the complexed, costly and redundant. Moreover, it is found that SMEs digitalise primarily in the fundamental technologies and not in more crucial digital solutions that trigger them to lag behind the larger organisations. Thus, around 77% of the SMEs firms are digitalised, and only 25% are capable of attaining advanced digitalisation (Joensuu-Salo et al., 2018). The digital adoption by SMEs is mostly focused on the computation of devices and connectivity, which are therefore least dominant in the back-end business procedures, for instance, inventory management and order fulfilment software.

Furthermore, certain SMEs utilise advanced digital technologies to increase their business performance. Other than that, the biggest challenges in SME digitalisation are financing, workforce skillset and scarce technology (Eller et al., 2020). This demonstrates a lack of technical expertise among the workers as, usually, most SMEs are unaware of how, when and where to

digitalise. A major rise in the digital space during the same period has been found (Thrassou et al., 2020). Thus, the contrasting trajectories among online and offline economic activities illustrate that it is complex for SMEs to contribute to the digital economy if they tend to survive and succeed in the post-Covid world. In addition, it is found that the development of a transformation strategy is essential because it ensures that strategic goals are influential, measurable and concentrated, determination toward the business's goals (Neubert, 2018).

H3: Strategic goals have a significant impact on digitalisation.

It is observed that management commitments are aligned with the strategic goals. According to Majid et al. (2019), management's commitment to quality assurance is very necessary because they offer the resources for the integration and maintenance of the management system that comprises all the procedures linked with the quality. It is found that there is a very limited number of studies that have emphasised the practices of SMEs for the survival after Covid pandemic (Harel, 2021). it is identified that SMEs have used monetary and marketing strategies for survival by facing the consequences of the Covid crisis. They are found significant because they usually emphasise the long-term performances of SMEs instead of the short term, along with determining the potential for effective needs (Adam and Alarifi, 2021). This. The SME managers must develop a strategic plan for addressing the adverse impacts of the crisis on their organisation after the pandemic to ensure continuity and survival.

H4: Strategic goals have a significant impact on management commitments.

The research of Adam, and Alarifi (2021), shows the importance of information technology in aiding SMEs in coping with the challenges developed by the crisis of Covid'19. Practising strategic liveliness alleviates adverse influences of the crisis of Covid'19 on the overall performances of SMEs. It undertakes the supervisory method for practising SMEs to respond to the crisis. Regarding the crisis, SMEs have set up measures to help digitalise SMEs to facilitate teleworking and averting macro incomes in strategic sectors. However, it is supported by Industry 4.0 projects for SMEs along with numerous programs in place to support SMEs and self-employed

to rethink their business models and establish managerial and digital skills (Gulin, Hladika, and Valenta, 2019). Thus, the Acelera PYME program aims to accelerate SMEs' utilisation of digital technologies.

*H5: IT support has a significant impact on digitalisation.*

As observed through the research, SMEs face numerous difficulties and challenges because of the Covid'19 pandemic. It demonstrates that the closure of businesses and movement deterrence policies adopted by the government in different countries have greatly influenced SMEs, paralysing their operations, weakening their financial positions and exposing them to financial risk (Belitski et al., 2022). In this regard, the issue coincided with the decline in the spending of consumers because of the decrease in consumers' income and widespread feelings of doubt. It is revealed through several types of research that SMEs have failed to endure the penalties of economic crises. This defect could be attributed to the absence of financial resources along with the increased cost of business capital. To mitigate its crises, governments have adopted numerous policies to minimise the crisis's adverse impacts. As observed through the study of Alara (2021), it indicates that all the firms' characteristics apart from SME's area of specialisation play an important part in shaping Covid'19 safety practices, which are linked with the management commitments, workers' commitment, protected education and training of Covid'19. It shows that the management of SMEs and the workers' commitment have been enhanced with the rise in workforce and yearly revenue.

H6: IT support has a significant impact on management commitments

Conceptual Framework

| *Independent Variable* | *Dependent Variable* |

| Covid-19 pandemic |
| IT support | → | Management Commitments |
| Strategic goals | | Digitalisation |
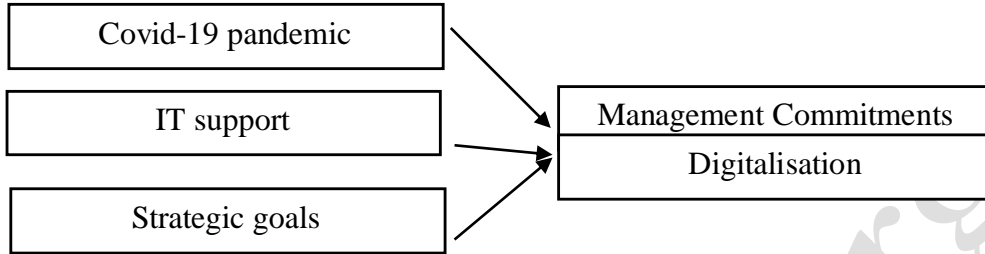
Method:

The methodology is crucial in a research study (Brannen, 2017). The methodology that has been selected for the present paper is primarily quantitative. Since the key motive of the present paper is to analyse the impact of the COVID-19 pandemic on SMEs in Asia and their digitalisation responses. Therefore, selecting this research design has helped the researcher accumulate numeric data and further analyse it using several statistical approaches, which could not have been possible in any other research design (Creswell and Creswell, 2017). In addition, the researcher of this paper intended to explore the impacts of the COVID-19 pandemic on SMEs in Asia and their digitalisation responses. In context, it can be evident from the topic that it does not comprise any secondary or qualitative element and revolves around human perceptions and views; hence, using a preliminary quantitative design was an extremely befitting selection (Pearson and Geronimus, 2018).

Moreover, it is recognised that the strategy and technique for acquiring, analysing, and interpreting data is a research approach in the context of conducting research. The three basic styles of research approaches are the deductive method, the inductive approach, and the abductive approach. Deductive reasoning was used in this study to conduct the research. It is to be noted that the researcher employed the deductive approach to test the hypotheses that either digitalisation had a positive impact on the SMEs during COVID-19 or either it had a negative impact.

Furthermore, intending to conduct innovative research and gather appropriate and relevant responses, the researcher has used a questionnaire survey to gather the participants' responses. The sample size selected for the present study was around 100 participants. The participants selected for this paper's data collection were the managers and the employees of SMEs who had overcome the effects of the deadly pandemic COVID-19. Other than this, it was ensured that the participants and the respondents involved in the research had an experience of a minimum of 1-2 years and also comprised sufficient knowledge about digitalisation. The primary reason behind this was that the employees that possessed extensive knowledge about the company and its functions and were also aware of the use of digitalisation were greatly able to provide the researcher with great insights

regarding the usage of digitalisation in a crucial time like COVID-19 pandemic. In addition, since the data in the present paper has been gathered through a questionnaire survey; therefore, descriptive, correlation and regression analysis techniques through the tool of SPSS have been applied (Zook and Pearce, 2018). Moreover, the researcher employed regression analysis to gauge the impact of independent variables on dependent variables, while correlation analysis has helped him confirm the association between variables (Chen et al., 2017).

Analysis

Results

Descriptive Analysis

The table below depicts the descriptive analysis conducted for the present study.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
COVID-19 PANDEMIC ON SMEs	277	.0	4.0	1.782	.9575
IT support	277	.0	4.0	1.641	.9678
Strategic goals	277	.0	4.0	1.744	.9475
Management Commitments	277	.000000000000000	4.000000000000000	1.572803850782188	.988670951345000
Digitalisation	277	.0	4.0	1.547	.9943
Valid N (listwise)	277				

The maximum range was 4, the mean was 1.78, and the standard deviation was.9575 for the COVID-19 impact on SMEs. This demonstrates that the number of respondents tended to be unconcerned about the COVID-19's effect on SMEs. Additionally, the IT support discloses that the mean was one, and the maximum range was 4.00. The median was 641, and the standard deviation was.9678. This shows that most respondents opposed having IT support influence the digitalisation and managerial commitments of the SMEs. However, the strategic goals show that the mean was one and the greatest range was also 4. The standard deviation is.9475, and the

number are 744. This shows that most respondents were inclined towards having a neutral view regarding the strategic goals.

The digitalisation reveals that the maximum range was 4.00 and the mean was 1.547, with the standard deviation being .9943. This means that most of the participants disagreed with the notion of digitalisation. However, it is imperative to note that digitalisation is a crucial aspect, especially in the awakening of COVID-19, yet it was a disagreed notion. On the other hand, the results revealed that organisational commitments had a range of 4, and the mean was also 1.572, along with a standard deviation of .9886. It is to be noted that in comparison to digitalisation, the results show that organisational commitments were inclined to be more impacted by the variables.

Correlation Analysis

The correlation analysis element must be considered in this research's statistical analysis because it plays a key role in the results. According to the study conducted by Gogtay and Thatte (2017), the correlation analysis is suitable for detecting the connection or interconnection that exists between 2 or more research variables. However, based on the conclusion of the results, it is important to address whether Pearson Corelation's value is favourable or unfavourable. Therefore, for this purpose, the two particular kinds of variables can only be related in an inverse or direct way (Darlington and Hayes, 2017). The analysis of correlation for this study is obtained using the SPSS technique and the variables identified in the study's conceptual framework. It has been supposed that correlation analysis would control how relative the variables were regarding their effects and impacts. A correlation coefficient, commonly known as Pearson's correlation coefficient, or "r," represents the strength of a link between 2 variables. The range of r is 0 to 1, with several 0–0.3 denoting a weak correlation, a value of 0.4–0.7 denoting a significant association, and 0.7–1 denoting a strong correlation. Additionally, the orientation of the correlation, or if the variables are directly or indirectly correlated, is described by the symbol of the coefficient.

The values of each researcher's independent variables concerning the dependent variables are shown in the table above. Similar to this, the findings from the table mentioned above show

how and to what extent the study variables relate to one another. The correlation table previously described combined three independent and two dependent variables. The COVID-19 pandemic on SMEs, IT support, and strategic goals are independent factors in the correlation analysis findings table described above. In contrast, managerial commitments and digitalisation are the dependent factors. It is clear from the table that the impact of the COVID-19 pandemic on SMEs is responded with a Pearson correlation of 1, indicating that it has an important link with the dependent variables of management commitment and digitalisation.

Furthermore, it should be noted that the Impact of COVID-19 Pandemic on SMEs identifies a strong relationship with the dependent variable, which is the management commitment and digitalisation, as well as the Pearson correlation results, which demonstrate a great relationship between the variables at a value of 0.169. As previously stated, the numerical value of r is positive, which indicates that only positive influences are visible and no negative elements of the variable relation will exist. Additionally, another independent variable, It Support, has a significant value of 0.005 and suggests that it is likely to have an important link with the dependent variable, management commitments and digitalisation. The r-value, also known as the Pearson correlation coefficient, is 0.152, indicating that the dependent variable and there are strongly correlated.

		PANDEMIC ON SMEs	IT support	Strategic goals	Management Commitments	Digitalisation
COVID-19 PANDEMIC ON SMEs	Pearson Correlation	1	.169**	.152*	.117	.127*
	Sig. (2-tailed)		.005	.011	.051	.035
	N	277	277	277	277	277
IT support	Pearson Correlation	.169**	1	.972**	.973**	.977**
	Sig. (2-tailed)	.005		.000	.000	.000
	N	277	277	277	277	277
Strategic goals	Pearson Correlation	.152*	.972**	1	.971**	.967**
	Sig. (2-tailed)	.011	.000		.000	.000
	N	277	277	277	277	277
Management Commitments	Pearson Correlation	.117	.973**	.971**	1	.992**
	Sig. (2-tailed)	.051	.000	.000		.000
	N	277	277	277	277	277
Digitalisation	Pearson Correlation	.127*	.977**	.967**	.992**	1
	Sig. (2-tailed)	.035	.000	.000	.000	
	N	277	277	277	277	277

Regression Analysis

Regression analysis is a robust statistical approach that enables researchers to analyse the association between multiple variables of interest (Chatterjee and Hadi, 2013). The study also found that while there are several kinds of regression analysis techniques, they all, in some way, concentrate on monitoring the effect of the relationship between the independent variable on a dependent variable. Furthermore, two factors are often used to drive the performance of a regression analysis. The main goal of this analysis is to forecast the value of the dependent variable for individuals for whom detailed information about the descriptive factors is available or to analyse the effects of various explanatory variables on the dependent variable. Regression analysis is an essential and effective statistical analytical technique that assists in comprehending the impact and nature of the influence. This analysis is primarily divided into three categories: the ANOVA, the model summary and the table of coefficients. It should be noted that regression analysis frequently uses the features of the Model summary, ANOVA, and Table of coefficients. For this

research study, these aspects of the regression analysis have been mentioned, and the charts are shown below:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.980[a]	.961	.961	.1971

a. Predictors: (Constant), Strategic goals, COVID-19 PANDEMIC ON SMEs, IT f

Depending on the statistics or information attained from the table mentioned above, the determined value of R is 0.980. This suggests that the model is appropriate and sufficient for the analysis of 80%. The R-square value is also seen to be an important metric. According to the research conducted by Brannen (2017), the R-square often reveals how thoroughly the independent variables analyse the regression model that has been developed. According to the table above, the value of R square is 0.961. This suggests that the independent variables that account for the impact of the COVID-19 pandemic on SMEs, IT support, and strategic goals account for about 96.1 % of the regression model's formulation.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	262.287	3	87.429	2251.145	.000[b]
	Residual	10.603	273	.039		
	Total	272.890	276			

a. Dependent Variable: Digitalisation
b. Predictors: (Constant), Strategic goals, COVID-19 PANDEMIC ON SMEs, IT support

The significance level for this regression model's criterion is 0.03, which is meaningful at 87%. This advises that the produced or the formed regression model seems relevant and also suited for

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	259.001	3	86.334	2186.282	.000ᵇ
	Residual	10.780	273	.039		
	Total	269.782	276			

a. Dependent Variable: Management Commitments

b. Predictors: (Constant), Strategic goals, COVID-19 PANDEMIC ON SMEs, IT support

According to the above table, the important threshold for this regression model's criteria is 0.03, which is significant at 86.3 per cent. When a significant value or p-value appears to be higher than the cut-off of 0.03, the created or generated regression model seems relevant and suitable for the research. The established or formed regression model is appropriate, significant, or acceptable for regression since the p-value was less than the threshold of 0.03 or a significant value and was represented as 0.000.

analysis when a significant value or the p-value shows to be higher than the threshold of 0.03. Because the p-value was less than the limit of 0.03 or a significant value, and it was displayed as 0.000, this indicates that the established or formed regression model is suitable, important, or acceptable for regression.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.075	.032		-2.343	.020
	COVID-19 PANDEMIC ON SMEs	-.044	.013	-.043	-3.492	.001
	IT support	.564	.053	.552	10.685	.000
	Strategic goals	.460	.054	.441	8.558	.000

a. Dependent Variable: Management Commitments

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.106	.032		-3.307	.001
	COVID-19 PANDEMIC ON SMEs	-.037	.013	-.035	-2.913	.004
	IT support	.690	.052	.672	13.189	.000
	Strategic goals	.336	.053	.320	6.297	.000

a. Dependent Variable: Digitalisation

According to the data in the table provided, the sig value was discovered to be 0.001, which means that it is less than 0.05 and is considered significant. As a result, it shows how the COVID-19 pandemic's effects on SMEs, IT support, and strategic goals greatly impact digitisation. However, it is revealed that IT support has a substantial impact on digitisation because its sig value is 0.000, which is less than 0.05. As an outcome, the findings of the coefficient testing indicate that the strategic goals and IT support both have a substantial impact on digitalisation because their value is 0.000, which is less than 0.05.

Considering the data provided in the table above, the sig value was discovered to be 0.020, meaning that it is more than 0.05 and is considered not significant. As an outcome, it depicts how the COVID-19 pandemic's effects on SMEs, IT support, and strategic goals do not greatly impact digitisation. However, it is revealed that IT support and strategic goals have a substantial impact on management commitments since their sig value is 0.000, which is less than 0.05. As an outcome, the findings of the coefficient testing indicate that the strategic goals and IT support both have a substantial impact on management commitments because their value is 0.000, which is less than 0.05.

Discussion

Covid'19 has not only damaged the mental well-being of the individuals; instead, it has impacted the financial well-being of the firms globally. In this regard, SMEs tend to be vulnerable, as observed through the above findings and analysis that the shortage of financial resources ad absence of specialised knowledge has made the situation harder. Thus, the outcome of this pandemic has resulted in rising digital transformation, alterations in customer behaviour, and managerial and technological gaps in knowledge. In contrast, the ongoing pandemic, the lack of SMEs' financial resources was exacerbated by various causes. In this regard, the managers of SMEs may suffer from knowledge scarcity in dealing with the economic influences caused by the pandemic (Klein, and Todesco, 2021).

The study conducted by Yoshino, and Taghizadeh-Hesary, (2018), shows that the major challenges faced by SMEs in Asia are in terms of the absence of skilled labour, scarcity of SME finance, and inadequate usage of information technology, absence of government support and competition from the neighbouring markets. Moreover, the other barriers are in terms of accessing cheap finances, mainly due to asymmetric knowledge issues among suppliers and fund demanders and increased transaction costs.

The third objective of the study was to identify the impact of the Covid-19 pandemic on SMEs in Asia and their digitalisation responses. In context, the findings have revealed that small and medium-sized businesses have employed digitisation to boost productivity and competitiveness. The study conducted by Arshed (2021) has revealed that an unheard-of decline in economic activity followed the start of the COVID-19 epidemic and the imposition of lockdowns in several Asian nations. The study has related to the present study's findings, which also state that companies have implemented digital strategies to make up for the decline in traditional revenue sources. However, it has been understood from the findings that companies left out of this technological age may find it difficult to exist, let alone grow, as more business venues go digital.

The last objective of the study was to provide appropriate and relevant recommendations regarding enhancing the SMEs in Asia and improving the digitalisation responses. In context, the present paper has analysed that unawareness of digitalisation is among the biggest challenges SMEs face. Moreover, the study conducted by Harel (2021) has shed light that public-private partnerships must be established and supported to lower the cost of fundamental digital infrastructure and the economic obstacles toward SME digitalisation. Moreover, increased employee learning and developing skills and boosting awareness of the advantages of digitalising back-end procedures can boost technological expertise among SME employees and encourage internal digitalisation.

Conclusion

The contemporary research was intended to investigate the effect of the covid-19 pandemic on SMEs in Asia and their digitalisation responses. The following research employs a primary quantitative method to obtain valuable data from the survey carried out by 100 participants who are either managers or employees of SMEs. Through the above analysis, it was revealed that Covid'19 has not only damaged the mental well-being of the individuals; instead, it has impacted

the financial well-being of the firms globally. The findings show that SMEs have been mainly triggered because of this economic recession that has affected the performance of the businesses.

Future Implications

Since the present research revolves around digitalisation, technology, IT support, management commitments and strategic goals, exploring this domain concerning other predominant and promulgated aspects affecting SMEs in Asia and their digitalisation responses is pertinent. However, future research would facilitate the present research through its conceptual model and work towards developing its objective theoretical foundation.

References

Adam, N.A. and Alarifi, G., 2021. Innovation practices for the survival of small and medium enterprises (SMEs) in the COVID-19 times: the role of external support. *Journal of innovation and entrepreneurship*, *10*(1), pp.1-22.

Alara, S.A., 2021. Organisational characteristics and COVID-19 safety practices among small and medium construction enterprises (SMEs) in Nigeria. *Frontiers in Engineering and Built Environment*.

Arshed, N., Ludwig, J., Benson, S. and Avill, R.R., 2021. Understanding the Effects of COVID-19 on SMEs in the UK: Examples of Promising Practices.

Belitski, M., Guenther, C., Kritikos, A.S. and Thurik, R., 2022. Economic effects of the COVID-19 pandemic on entrepreneurship and small businesses. *Small Business Economics*, *58*(2), pp.593-609.

Brannen, J. (Ed.). 2017. *Mixing methods: Qualitative and quantitative research*. Routledge.

Burhan, M., Salam, M.T., Abou Hamdan, O. and Tariq, H., 2021. Crisis management in the hospitality sector SMEs in Pakistan during COVID-19. *International Journal of Hospitality Management*, *98*, p.103037.'

Chatterjee, S. and Hadi, A.S., 2013. *Regression analysis by example*. John Wiley & Sons.

Chen, K.M., Xiong, H.P., Zhu, A.G., Luan, M.B., Hou, M., Chen, P., Chen, J.K., Gao, G. and Yu, C.M., 2017. Correlation and regression analysis of biomass and biomass components of ramie. *Plant Fiber Sci in China*, *39*(6), pp.289-91.

Creswell, J.W. and Creswell, J.D., 2017. Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

Darlington, R.B. and Hayes, A.F., 2017. Regression analysis and linear models. *New York, NY: Guilford*.

Gogtay, N.J. and Thatte, U.M., 2017. Principles of correlation analysis. *Journal of the Association of Physicians of India*, *65*(3), pp.78-81.

Guo, H., Yang, Z., Huang, R. and Guo, A., 2020. The digitalisation and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey. *Frontiers of Business Research in China*, *14*(1), pp.1-25.

Harel, R., 2021. The impact of COVID-19 on small businesses' performance and innovation. *Global Business Review*, p.09721509211039145.

Igarashi, T., Takeda, A., Truong, H.T. and Sonobe, T., 2021. Evolving impacts of the COVID-19 pandemic on micro, small, and medium-sized enterprises in Asia (No. 1286). ADBI Working Paper.

Joensuu-Salo, S., Sorama, K., Viljamaa, A. and Varamäki, E., 2018. Firm performance among internationalised SMEs: The interplay of market orientation, marketing capability and digitalisation. *Administrative Sciences*, *8*(3), p.31.

Juergensen, J., Guimón, J. and Narula, R., 2020. European SMEs amidst the COVID-19 crisis: assessing impact and policy responses. *Journal of Industrial and Business Economics*, *47*(3), pp.499-510.

Klein, V.B. and Todesco, J.L., 2021. COVID-19 crisis and SMEs responses: The role of digital transformation. *Knowledge and Process Management*, *28*(2), pp.117-133.

Kurpayanidi, K. and Abdullaev, A., 2021. Covid-19 pandemic in central Asia: policy and environmental implications and responses for SMEs support in Uzbekistan. In *E3S Web of Conferences* (Vol. 258, p. 05027). EDP Sciences.

Pearson, J.A. and Geronimus, A.T., 2018. A Practical Guide to Biological Primary Data Collection in an Impoverished Urban Setting: Illuminating Structural and Social Influences on Population Health Inequity. SAGE Publications Ltd.

Shafi, M., Liu, J. and Ren, W., 2020. Impact of COVID-19 pandemic on micro, small, and medium-sized Enterprises operating in Pakistan. *Research in Globalisation*, *2*, p.100018.

Shinozaki, S. and Rao, L.N., 2021. COVID-19 impact on micro, small, and medium-sized enterprises under the lockdown: evidence from a rapid survey in the Philippines.

Sonobe, T., Takeda, A., Yoshida, S. and Truong, H.T., 2021. The impacts of the Covid-19 pandemic on micro, small, and medium enterprises in Asia and their digitalisation responses.

Thrassou, A., Uzunboylu, N., Vrontis, D. and Christofi, M., 2020. Digitalisation of SMEs: A review of opportunities and challenges. *The changing role of SMEs in global business*, pp.179-200.

Yoshino, N. and Taghizadeh-Hesary, F., 2018. The role of SMEs in Asia and their difficulties in accessing finance.

Zook, K.L. and Pearce, J.H., 2018. Quantitative descriptive analysis. In *Applied Sensory Analy of Foods* (pp. 43-71). Routledge.

Allam, Z., Dey, G. and Jones, D.S., 2020. Artificial intelligence (AI) provided early detection of the coronavirus (COVID-19) in China and will influence future Urban health policy internationally. *Ai*, *1*(2), pp.156-165.

Igarashi, T., Takeda, A., Truong, H.T. and Sonobe, T., 2021. Evolving impacts of the COVID-19 pandemic on micro, small, and medium-sized enterprises in Asia (No. 1286). ADBI Working Paper.

Steel, I. and Harris, T., 2020. Covid-19 economic recovery: fiscal stimulus choices for lower-income countries. *Institute for Fiscal Studies, London*.

Chanana, N., 2021. The impact of COVID-19 pandemic on employees organisational commitment and job satisfaction in reference to gender differences. *Journal of Public Affairs*, *21*(4), p.e2695.

Filimonau, V., Derqui, B. and Matute, J., 2020. The COVID-19 pandemic and organisational commitment of senior hotel managers. *International Journal of Hospitality Management*, *91*, p.102659.

Eller, R., Alford, P., Kallmünzer, A. and Peters, M., 2020. Antecedents, consequences, and challenges of small and medium-sized enterprise digitalisation. *Journal of Business Research*, *112*, pp.119-127.

Neubert, M., 2018. The impact of digitalisation on the speed of internationalisation of lean global startups. *Technology Innovation Management Review*, *8*(5).

Majid, A., Yasir, M., Yousaf, Z. and Qudratullah, H., 2019. Role of network capability, structural flexibility and management commitment in defining strategic performance in the hospitality industry. *International Journal of Contemporary Hospitality Management*.

Gulin, D., Hladika, M. and Valenta, I., 2019. Digitalisation and the Challenges for the Accounting Profession. *ENTRENOVA-ENTerprise REsearch InNOVAtion*, *5*(1), pp.428-437.