

The Mediating Effect of Digital Transformation Extent on the Relationship between Managerial Proactiveness and Business Resilience: Government Intervention as a Moderator

Choong Yuen Onn*

Universiti Tunku Abdul Rahman

Email: choongyo@utar.edu.my

Seow Ai Na

Universiti Tunku Abdul Rahman

Email: seowan@utar.edu.my

Nur Hafizah binti Mohammad Ismail

Universiti Utara Malaysia

Email: n.hafizah.mohammad@uum.edu.my

Julian Teh Hong Leong

Universiti Tunku Abdul Rahman

Email: tehhl@utar.edu.my

Peter Tan Sin Howe

Universiti Tunku Abdul Rahman

Email: shtan@utar.edu.my

** Corresponding Author*

Abstract

Purpose: Small and medium-sized enterprises (SMEs) is one of the important sectors in a country. In this competitive global business climate, the unexpected changes and turbulent events are causing major challenged for the SMEs. Hence, this study is aimed to analyse the mediating effect of digital transformation on the relationship between managerial proactiveness and business resilience. Further, the role of government intervention is used to moderate the relationship between digital transformation and business resilience.

Design/methodology/approach: A total of 86 samples were collected via online survey methods. Data was analysed using SmartPLS version 3 software. A two-stage analytical approach was pursued to test the construct validity, reliability, hypotheses and model.

Findings: The statistical result reveals that managerial proactiveness is positively related to digital transformation. Additionally, managerial proactiveness and digital transformation are positively related to business resilience. Digital transformation significantly mediates the relationship between managerial proactiveness and business resilience. However, Government intervention is not significant moderate the relationship between digital transformation and business resilience.

Research limitations/implications: Several limitations and implications were highlighted to various stakeholders such as researchers, business practitioners, SMEs associations, SMEs and relevant ministries.

Practical implications: Several implications were offered to enhance the managerial proactiveness and adoption of digital transformation.

Originality/value: This study has confirmed that digital transformation is vital for SMEs to remain resilient in times of turbulent environment.

Keywords: managerial proactiveness, digital transformation, government intervention, business resilience, SMEs, turbulent event

1.0 Introduction

Small and medium-sized enterprises (SMEs) is one of the essential sectors which fostering growth in gross domestic income, employment and a nation's economy. Lately, the global crisis due to the coronavirus (covid-19) pandemic have led firms to be exposed to uncertainties that have yet to be experienced. SMEs were caught unprepared for this disruptive event that caused more than 30,000 SMEs to shut down their business (The Star, 2020; The Edge, 2020). Consequently, the economic shock forced many firms to endure further, with some facing difficulties to sustain throughout the pandemic.

Although the government has implemented a series of stimulus packages to support SMEs deal with financial challenges. Nevertheless, to revitalize the economy, SMEs are encouraged to innovate, moving on to online platforms and automation in order to capture revenue (De Marco, Di Minin, Marullo & Nepelski, 2019). These include adopting new business models to embrace the shift in a customer's behaviour. Consequently, the existing SMEs policy frameworks is required to be reformed, in order to re-orientation their value chain in building long-term resilience (OECD, 2021).

SMEs particularly with fewer resources and less capabilities are experiencing financial and economic distress (Iborra et al., 2020). Although several measures were taken by the firms (e.g., cost-cutting, lean cash management, re-prioritisation among others), nevertheless, the SMEs lack resilience. They are unable to withstand, survive and strive for recovery when impacted by external shocks from the COVID-19 pandemic (Zutshi et al., 2021).

Changes in business strategies to conduct business, developing new operation guidelines, and sourcing for opportunities in redevelopment are recognised as a number of crucial survival challenges (Akpan, Udoh & Adebisi, 2020). Nevertheless, these effects might vary in accordance with the size and types of business activity for the business owners. Instead of remaining in business operation, some small firms perceive that paying a commission fee to engage in digital platforms to be onerous, rather, they choose to close their business during the lockdown (Swasty, 2015). Some firms prefer to adopt their existing brick-and-mortar business models. In response to changes in the business environment, SMEs should be proactive in their business management to withstand, survive and recover in a dynamic environment (Lu, Wu, Peng & Lu, 2020; Parker & Ameen, 2018).

Besides to pandemic issue, SMEs are also struggling with the adoption of smart technologies due to the rise of digital era (Akpan et al., 2020; Sevinc et al., 2018). Although the government is pushing for the adoption of IR 4.0, the adoption rates among the SMEs seems to face some obstacles. Among the major barrier, lack of skilled workforce and lack of financial resources have been reported as two significance obstacles (Kiel et al., 2017; Stentoft et al., 2019). With these double impacts of COVID-19 pandemic and readiness for the adoption of smart digital technologies, management of the SMEs are expected to be proactive with rapid respond toward the changes in order for them withstand, survive and recover in this dynamic environment.

Recent studies have taken initiative in exploring the antecedents of business resilience such as organizational ambidexterity, strategic consistency (Iborra et al., 2020) and internal and external barrier for resilience (Skouloudis et al., 2016), but not very much on managerial

proactiveness, digital transformation, and government intervention which are salient aspects for promoting SMEs resilience. Ates and Bititci (2011) argued that a firm with higher proactiveness such as ability of changing business model in a short time, strong strategic long-term planning, effective crisis management etc, to drive change proactively could improve the firm resilience. Similarly, SMEs with managerial proactiveness would be more willing and capable to change their business model by digitalizing part of their business operations (Ulas, 2019; Vuorio, Torkkeli & Sainio, 2020). For those SMEs who are successfully adopted smart digital technologies, it would have better capabilities to withstand and survive (Papadopoulos, Baltas & Balta, 2020; Seetharaman, 2020). Priyono, Moin and Putri (2020) implies that SMEs is better cope with environmental changes by transforming its business model with the support of digital technologies. Therefore, the focal point of this paper is to study how SMEs resilience could be strengthened through the managerial proactiveness, digital transformation, and government intervention.

There are limited past studies identify the effectiveness of the stimulus packages which used to support SMEs and its resilience. Further, the current literature has very little suggestions proposed to business practitioners, policy makers and academia references. As such, there is a critical need to draw insights on how to strengthen the SMEs resilience in facing the impact of such phenomena and this study is likely to provide evidence-based insights in policy making contributions.

1.1 Purpose of Study

1. What is the relationship between managerial proactiveness and SMEs for business resilience during the turbulent time?
2. How digital transformation extent mediate the relationship between managerial proactiveness and business resilience among SMEs?
3. Will governmental support moderate the relationship between digital transformation extent and business resilience among SMEs?

2.0 Literature Review

2.1 Business Resilience

Resilience theory is one of the popular theories that used as an underlying theory for the research model which emphasized on resilience (van Breda, 2018). It was “roots in the study of adversity and an interest in how adverse life experience impact harmfully on people” (van Breda, 2018, p.2). It is also argued that if an individual able to act proactively, it would be able to bounce back to normal condition. Business resilience reflects “the capability of a business to deal with change and continue to develop while fostering learning and adaptation” (Folke et al., 2010). The concept of resilience is very much related to business performance (Sutcliffe & Vogus, 2003; Suryaningtyas et al., 2019). In the context of SME resilience, SMEs are often under-prepared for uncertain business situations (Sullivan-Taylor & Branick, 2011). This can cause disastrous consequences to business resilience and performance. Although many SME businesses have difficulties in planning and preparing for adversity, in some other cases, SMEs are still able to respond to the risk (Wishart, 2018). This is because flexibility and being rapidly responsive to the challenging situation will allow SMEs to adopt an effective approach when dealing with risk and threat (Reymen et al., 2015). In order for SMEs to increase their business resilience, SME need to invest in resilience such as product, organisation and customer services to reduce the vulnerability (Wishart, 2018). Similarly, SME’s capabilities such as a proactive attitude during an uncertain situation, will help to enhance business resilience (Battisti & Deakins, 2017). As such, SMEs need to actively prepare for adversity. This can be done through developing a contingency plan and adopting an adaptive behaviour.

2.2 Hypothesis Development

2.2.1 Managerial Proactiveness, Digital Transformation Extent and SMEs Resilience

Managerial proactiveness refers to “an organisation's strategic orientation to aggressively pursue new market opportunities, introduce new products, new services, new operating technologies, and new administrative techniques ahead of the competition” (Aidoo, Agyapong, & Mensah, 2020; Venkatraman 1989). Management with strong proactive behaviour is able to enhance organization resilience. In line with this, Coleman and Adim (2019) also states that proactive managers place a stronger emphasis on learning and knowledge, and this enhances the overall resiliency of the organisation. Encouraging and fostering an employee's constant need to learn and improve prepares the organisation to weather any hardships that come its way. Thus, the strong emphasis on learning and knowledge increases the firm's resiliency in the long run. Having more streamlined communication increases the quality of communication and relationship with its stakeholders, and thus this greatly improves a firm's resiliency during a crisis (Jia et al., 2020). Similarly, Li, Su, Zhang and Mao (2016) also propose that proactive managers place a greater emphasis on self-learning, reflection, and building up social networks. Which in return contributes towards enhancing the overall resilience of the organisation during a crisis. Thus, the proposed hypothesis is shows as follows:

H1: Managerial proactiveness is positively related to business resilience.

Leadership commitment is vital to ensure that digital transformational processes are implemented smoothly within the organisation (Teece, 2012; Verhoef et al., 2019). When managers are not fully involved or committed towards digital transformation, the transformation process will be hindered as resisting forces push back towards the status quo (Kay & Pitelis, 2016). Interesting to note is that, even when faced with limited resources and inadequate capabilities (e.g., lack of education, being financially poor), leaders with high managerial proactiveness aggressively pushed ahead with digital transformation, rather than throw in the towel to give up in their company (Li et al., 2018; Zangiacomi et al., 2019). These individuals aggressively seek all avenues and opportunities for their business to thrive, even to go so far as to come out of their own comfort zone by digitising their entire business process. Additionally, Lu and Ram (2011) also highlights a similar positive linkage between managerial proactive stance and firm digitization activities. This is supported by Cortex and Johnston (2020) where proactive thinking managers that take a hands-on approach to crisis management are more inclined to adopt digital transformation, as opposed to their non-proactive counterparts. Therefore, the following hypothesis is proposed:

H2: Managerial proactiveness is positively related to digital transformation extent.

2.2.2 Digital Transformation Extent and Business Resilience

Digital transformation is the phenomenon of changing the core business of a company. The value creation processes are altered, or rearranged, and new business models are implemented. Digital transformation is not solely concerned with the appliance of technologies that are new to a firm but rather it is a multilevel concept which covers the organizational readiness to be successful, technologies to interact with competitors, suppliers, and customers, reaching beyond companies' borders, changes to the organizational culture, strategy, structures, and processes, as well as the capabilities to generate value in new ways (Iivari et al., 2020; Meyer, 2021; Teece 2012). Alt (2021) and Soto-Acosta (2020) also argued that firms adopt full digital transformation for both its front-end and back-end processes are more likely to have higher organisational resilience during the covid-19 pandemic. Li et al (2018) indicated that digital transformation helps a firm to maintain durable relationships with its customers, and this helps to optimize and grow a business during a crisis. In a similar vein, Verhoef et al. (2019) also

states that digital transformation “serves as a key enabler to seize new business possibilities by changing existing business processes such as communication” (p.891), which in return ensures a higher level of resilience to survive a crisis. Thus, the following hypothesis is proposed:

H3: Digital transformation is positively related to business resilience.

2.2.3 Digital Transformation Extent as Mediator

Nwankpa and Roumani (2016) revealed that digital transformation was found to mediate the positive relationship between a manager’s proactive stance and firm long-term performance. Proactive leaders ensure a firm’s long-term survival (e.g., resilience) by using digital technologies to achieve unprecedented convergence of people and businesses. Lu and Ram (2011) also found that the relationship between a firm’s proactive stance and firm agility (i.e., which refers to the ability to be adaptable and resilient during a crisis) is significantly mediated by digital transformation. Agile firms have higher survivability in a turbulent environment because they are able to change and adapt in the midst of a crisis such as the COVID-19 pandemic. Related to our current study, agile firms can be said to be more resilient as they are able to adapt and cope with market or demand changes during a crisis. Digital transformation opens opportunities for proactive managers to contribute towards a firm’s resilience by providing a foundation for developing core organizational competences (Oh & Teoh, 2006). An integrated digitalized infrastructure provides proactive managers with a seamless flow of consistent, accurate, and timely information for decision making. An integrated digitalized infrastructure is essential for a company to developing a proactive strategy during a crisis. Furthermore, proactive managers would not be able to create a resilient firm without the aid of digital transformation (Li et al., 2018). In the absence of digital transformation, these firms would not be able to survive the turbulent business environment. The dynamic business environment pushes these managers to continue transforming the business by adopting the latest digital technology. Successful digital transformation first starts with the SME entrepreneur’s proactive mindset, then taking the step to set up an IT-enabled business. Thus, the proposed hypothesis is shows as follows:

H4: The relationship between managerial proactiveness and business resilience is mediated by digital transformation extent.

2.2.4 Government Intervention as Moderator

The responsibility for monitoring of pace and scope of the country’s development is one of the reasons which motivate government actively involved in implementing a series of economic stimulus packages to support SMEs sector. In order to ensure the continual growth of nation economic and social development, Government is responsible to create more employment opportunities for its citizens (Baum & Szivas, 2008). Dredge (2010) stated that protect and enhance public interest are primary role of government. The government takes on a more leading role and adopts the role of entrepreneur, operating and providing services, developing, and initiating plans, and formulating policies (Kubickova & Campbell, 2018). Past studies have claimed that government intervention could be an effective moderator in their study model (Falihat, Lee, Soto-Acosta & Ramayah, 2021; Seow, Choong & Ramayah, 2021; Taofeeq, Adeleke & Lee, 2020; Yulita et al., 2020).

Government intervention is crucial for the survival of small businesses. According to Doern (2016), the government can influence business ability to bounce back in the event of a shock. The government may provide training, incentives, and financial assistance to the affected business owners during the economic downturn to help them to increase their business resilience. In the development of SMEs resilience, the government must give strong support and focus on the eligibility, accessibility, and speed of delivery (KPMG, 2020). In order to

sustain the competitiveness, creativity, and growth of SMEs, the government must develop new mechanisms to assist business in technologically advanced areas (Chin & Lim, 2018). Previous studies show that many countries implemented various programs related to technology and innovation as key drivers of business growth (Chin & Lim, 2018; Doern, 2016; Hung, Abdullah Effendi, Abdul Taib & Abdul Rani, 2011). To ensure the business sustainability, therefore, innovation and technology must be incorporated as one of key aspects in enhancing the resilience of SMEs (Hung et al., 2011). Most of the SMEs are with limited resources, thereby requiring supports from local government financially and non-financially (Alkahtani, Nordin & Khan, 2020). This would further facilitate SMEs where a stronger support from government intervention would lead to a stronger effects of digital transformation extent on business resilience during a turbulent time. Therefore, the proposed hypothesis is demonstrated as follows:

H5: The relationship between digital transformation and business resilience is moderated by government intervention

2.3 Proposed Research Framework

Based on the above discussion, the research framework (Figure 1) below intends to evaluate the effects of the business resilience during their turbulent time

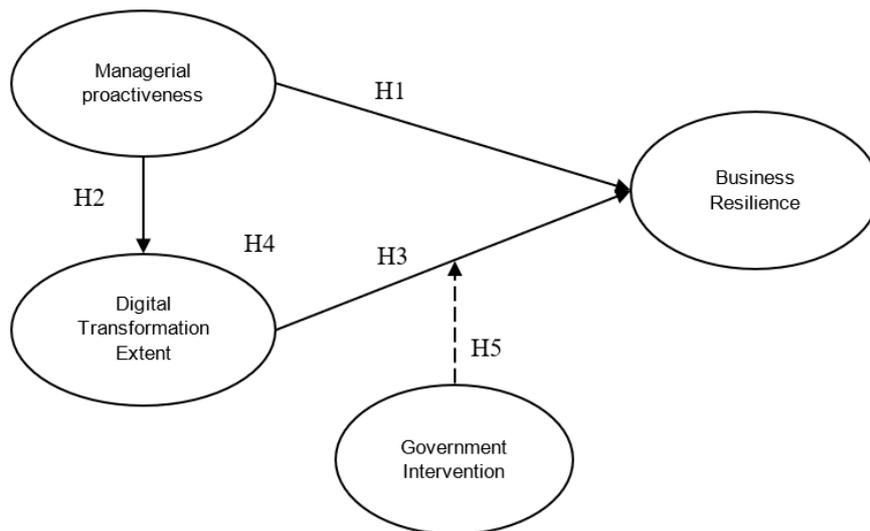


Figure 1. Proposed Research Framework

3.0 Methods

3.1 Sample and Procedure

A quantitative cross-sectional design approach was adopted to examine the research model. Data for this study was collected from SMEs in the service sector. Samples were selected using a purposive sampling technique. Only SMEs in the service sector that adopted digital technology platforms to promote their business were considered for this study. There were service-oriented platforms, social media platforms, media sharing platforms and knowledge platforms. Apart from this, these SMEs must use digitalisation in at least one of their company functions or areas such as procurement and inventory, accounting and taxes, digital marketing, e-commerce, and electronic point of sale. Due to the outbreak of COVID-19 and restriction movement order, fieldwork was conducted online by sharing survey links with potential respondents.

An online survey method was used to collect primary data with the assistance and effort of members who were involved in this research project. Apart from this, three research assistants were recruited to assist in monitoring the data collection. In total, 86 SMEs participated and responded to the online survey between the period of July 2021 to August 2021. The G*Power version 3.1.9.7 software was employed to calculate the minimum required sample size for data analysis (Faul, Erdfelder, Lang & Buchner, 2007). With type-1 error probabilities at 0.05, a sample of 85 was required to produce a sufficient statistical power of 80% for a moderate effect size of 0.15. Thereby, we can conclude that the sample is deemed sufficient to test the model. Majority of the SMEs that participated in the survey were in the form of sole proprietorship (n=49, 57%), whereas for types of service sector was food and beverage (n=30, 34.9%) and most of them were micro sized SMEs (n=56, 65.1%). The respondents' position was mostly owners of the business (n=40, n=46.5%).

3.2 Research Instrument

All adapted items were measured with a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). An online survey was developed using Google forms. As Malaysia is a multicultural nation, English is not the only common language used and spoken in Malaysian society. Thus, the Brislin's back-translation method was pursued to translate the English online survey to other languages such as Chinese and Bahasa Malaysia language (Brislin, 1970). A pre-test and pilot test were performed to check the reliability and validity of the adapted measurement items. The reliability score of constructs were exceeded minimum threshold value of 0.708 which ranging from 0.907 to 0.930.

4.0 Findings

The collected data was analysed using SmartPLS software version 3. A two-stage analytical stage was pursued (Anderson & Gerbing, 1988). The pls algorithm technique was used to confirm the measurement model, whereas bootstrapping technique was used to test the structural model (Seow, Choong & Ramayah, 2021; Hair, Risher, Sarstedt & Ringle, 2019).

4.1 Measurement Model Evaluation

Based on the measurement model analysis, all items factor loadings greater than the threshold value of 0.708. The average variance extracted scores for constructs exceeded the cut-off value of 0.500 which ranging from 0.565 to 0.701. The composite reliability of the constructs had good internal reliability as the scores of each construct surpassed the recommended value of 0.708 (Seow & Choong, 2021; Hair et al., 2019). For Heterotrait-Monotrait (HTMT) criterion, none of the HTMT ratio of correlation scores is greater than the more conservative HTMT cut-off value of 0.850 (Henseler et al., 2015). Based on the above analysis, the construct validity of the measurement model was ascertained.

4.2 Structural Model Evaluation

A bootstrapping technique with 5000 re-samples was conducted to test the structural model. The explanatory power for endogenous constructs: digital transformation ($R^2=0.551$) and business resilience ($R^2=0.593$) were considered moderate which exceeded the minimum cut-off value of 0.500. The statistical results revealed that managerial proactiveness is positively related to digital transformation extent ($\beta=0.741$, $t=11.274$, $p<0.001$) and business resilience ($\beta=0.495$, $t=2.874$, $p<0.01$). Similarly, the result also indicated that digital transformation is also positively significant to business resilience ($\beta=0.223$, $t=2.119$, $p<0.05$). Thereby, hypotheses 1, 2, and 3 are well supported by the data. For mediation analysis, it is found that the relationship between managerial proactiveness and business resilience is significantly

mediated by digital transformation extent ($\beta=0.246$, $t=2.326$, $p<0.05$). Therefore, hypothesis 4 was also supported. However, there is no moderation effect of government intervention on the relationship between digital transformation extent and business resilience. Thus, hypothesis 5 is not supported.

5.0 Discussion and Conclusion

This study offers several useful findings for researchers, business practitioners, relevant associations, SMEs, and the respective ministries. These findings have broadened the existing literature and advanced the understanding of how managerial proactiveness, and digital transformation influences business resilience in a turbulent environment, especially during the COVID-19 pandemic. Based on these findings, several implications, limitations, and future research are identified in the following sections.

5.1 Theoretical and Practical Implications

The result shows that managerial proactiveness are positively significant to digital transformation extent and business resilience. These findings are consistent with past studies (Coleman & Adim, 2019; Cortez & Johnston, 2020; Li et al., 2018; Zangiacomi, Pessot, Fornasiero, Bertetti & Sacco, 2019). As contended by Li et al. (2018) managers who are proactive will show more passion for self-learning, reflection and building up social networks which subsequently enhance their business resilience capabilities. For instance, proactive managers are more energetic to take initiative to invent and introduce a unique product or service that suits the current market condition or to look for new opportunities. By carrying such proactive actions, these make them more capable and flexible to respond to current challenges or in a turbulent time to willingly make positive adjustments. Apart from this, they are also more eager to transform their business digitally by adopting various platforms or devices such as social media platforms, knowledge platforms, media sharing platforms, service-oriented platforms and cross-platforms centralised messaging (Zangiacomi et al., 2019).

Meanwhile, this study's finding also reveals that digital transformation extent is positively significant to business resilience which also in line with Alt (2021) and Fletcher and Griffiths (2020). Fletcher and Griffiths (2020) argued that firms that are well equipped with advanced technologies are more able to respond to the market more efficiently and adaptably. If firms actively adopt the right digital solutions, they could easily sustain their business or bounce back fast enough to achieve resilience. Digital transformation extent also significantly mediates the relationship between managerial proactiveness and business resilience. If firms would like to sustain their performance for long term survival, their managers must proactively look for business opportunities and continuously update their firm operation systems through adopting appropriate digital solutions (Nwankpa & Roumani, 2016). Oh and Teoh (2006) elucidated that digital transformation opens opportunities for proactive managers to contribute towards a firm's resilience by providing the foundation for developing core organisational competencies. Surprisingly, government intervention does not significantly moderate the relationship between digital transformation extent and business resilience among SMEs during a turbulent event. This finding is contradicted with past studies (Doern, 2016; Kubickova & Campbell, 2018). This finding connoted that the degree of government intervention would not influence the strength of the relationship between digital transformation extent and business resilience. However, this does not mean that the government intervention is not important when it comes to facilitating business resilience among SMEs. An additional test was conducted which shows that government intervention is positively related to business resilience. Chin and Lim (2018) added that government is an important driver to spur SMEs' resilience. For instance, the

government should develop a clear mechanism to assist and guide SMEs in innovative and technologically advanced areas such as how to apply for financial aids from the relevant ministries and speed up the process of approval. Thus, Malaysian government is advised to continuously analyses changes which may associated with SMEs by developing adaptation programme includes programme on technology and innovation. Apart from this, Government should carefully identify important training and information such as skills retraining, short courses, workshops, etc.

5.2 Limitations and Suggestions for Future Research

There are several limitations. First, the result of this study is only generalizable to SMEs who are currently adopting a digital technology platform to promote their business, as well as at least to have taken initiative to digitalise their business functions. Hence, a similar kind of study could be conducted by focusing on those SMEs who are yet to adopt any digital technology platform. By doing so, it would help to identify and understand the root cause of not transforming their business digitally.

Second, is the nature of the study which adopts a cross-sectional study, which may not examine the effect of managerial proactiveness on digital transformation extent and business resilience over time. Therefore, a longitudinal study is recommended for future studies by re-considering the same set of variables over a longer period of time. Lastly, a mixed method or triangulation method could be used to strengthen the results of the future study.

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