
Configuring a Quadruple Helix Innovation Model (QHIM) Based Blueprint for Malaysian SMEs to Survive the Covid-19 Pandemic

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Ariful Islam¹, Sazali Abd Wahab²

Abstract:

Purpose: *The study aims to serve a wider understanding of how an adjustable configuration of different strategic initiatives can help Malaysian SMEs to endure through the crisis on basis of QHIM mechanism.*

Design/Methodology/Approach: *The study has embraced a qualitative approach on basis of online focus group discussion with the support of an expert facilitator. The data collection process includes 10 participants from various fields, such as academia; banking, NGOs and SMEs. The study also collected secondary information through different newspapers, magazines, websites, E-libraries, documentaries, and related journal sources.*

Findings: *Because SMEs are operating in uncertain conditions, the findings from the discussions suggest that an adjustable integration of various ranges of initiatives, such as access and management of financial resources, exploration-exploitation of opportunities, efficient negotiation, digital adoption, and leadership commitment can help SMEs to endure throughout this crisis. The findings also contend the intervention of innovation and calculated risk-taking within the configuration.*

Research limitation: *Prior empirical attempts are subsequently required to inquiry about the proposed model for Malaysian SMEs from different perspectives. Also besides a smaller sample size also creates an issue with generalisability.*

Practical implications: *The proposed conceptual model serves as an important mechanism for policy-makers and owner-manager of SMEs to understand how adjustments in identified initiatives can play a vital role regarding survival in this crisis. It provides recommendations for SMEs and on how to remain competitive through resilience and renewal strategies.*

Originality/Value: *The study contributes to the existing literature in crisis management and identifies the survival and resilience strategies of SMEs in developing regions during a long-lasting crisis. It also serves as a unique approach to how the Helix mechanism can be a vital concept in the survival process.*

Keywords: COVID-19, Crisis management, Exploration-exploitation, Innovation.

JEL codes: M21.

Paper type: Research article.

¹PhD Candidate, University of Putra Malaysia (UPM), Putra Business School (AACSB-Accredited), E-mail: farhan_ctg2012@yahoo.com;

²Professor (Director-Thesis Based Programme), University of Putra Malaysia (UPM), Putra Business School (AACSB-Accredited), E-mail: sazali@putrabs.edu.my;

1. Introduction

There has been increasing recognition in the substantial role of SMEs on how they contribute to the economic outline of any country where this segment is often explained as an effective creator of occupational opportunities, underlying pillars of large firms, and the gasoline of national economic mechanism (Abor and Quartey, 2010). SMEs are surely vital sources for the economy, more so in developing regions.

The study of Muriithi (2017) also adds that the focused segment can play a significant role as an engine that directs overall global economic improvement and as a core to industrialization process. Malaysian SMEs, report for around 99% of the total business setups of the country, commit 38.8% of GDP (6.2% annual growth rate within 2015-2018), 66.2% of total occupational options, and produce 48.3% of the total export volumes to other regions (SME Corporation Malaysia, 2019). The scenario also indicates how vital SMEs are in adjusting the Malaysian economic outline and continue as the foundation of the industrialization (Chin and Lim, 2018; Yuan *et al.*, 2020).

The outbreak of COVID-19 has first seen in Wuhan, China in December 2019 and with time it continues to spread across the world (Mazzoleni *et al.*, 2020; Thalassinos *et al.*, 2021; Khan *et al.*, 2020; Grima *et al.*, 2020). The pandemic has also introduced a huge magnitude of uncertainty considering global business outlines as The World Trade Organization (WTO) forecasts that the volume of entire global trade can possibly be downsized to 32% in 2020. In addition, maximum stock exchanges operating around the globe have confronted their biggest fall on the record book, as for instance, the DJI (Dow Jones Index) has seen 2,977 points fall within 24 hours (Onali, 2020).

Every sector has been harmed deeply by this steep downfall in stock price levels. The IMF (2020) in their recent analysis predicts a 3% decrease considering the entire global GDP in 2020, with additional unavoidable related risks for all business sectors including SMEs. Banks and financial institutes need to make strong negative alterations in their GDP growth rate whereas nearly 33% of SMEs confronting a threat to be out of business without additional help within one month, and up to 50% within three months.

At this point, a huge global recession is surely unavoidable, but how wide and long the downfall may possibly be rooted on the suitable measures implemented to prevent the spread of COVID-19, the impacts of government role or policies in mechanism with other active parties to reduce various ranges of internal-external concerns in SMEs and to help to survive.

On the other hand, the recent COVID-19 epidemic has a broad negative influence on public health in Malaysian premises, with no less than 100 casualties detected so far

(DOSM, 2020). As a result, all the states of Malaysia have issued MCO (movement control order), with much strict work from home protocols and the temporary shut-down of non-essential business setups.

SMEs are expected to be hugely downsized, as they lean to be much robust in sectors that have been affected straightaway by COVID-19 response initiatives and are basically more credit or cash-flow constrained than their larger counterparts (Cao and Leung, 2020; Carbo-Valverde *et al.*, 2016).

The latest statistics show that 46.6 percent of participants had reported losing their occupations because of the COVID-19 pandemic and the strict MCO implementation throughout the country whereas the report also revealed that the sectors related with agriculture and service detected with the highest percentage of occupational decrease comparing other segments (DOSM, 2020). Another report generated by SME Malaysia (2020) based on 15,627 business setups shows that more than 50% of SMEs are in fear to experience more than half a million ringgit losses within six months from March to Sept 2020.

The SME Malaysia (2020) survey in association with several marketing companies also identifies that most the businesses are currently confronting the risk of higher debt level and severely struggling to continue regular operations whereas nearly 35% of enterprises had sufficient cash to last till March 2020 while another 38% had reasonable cash to endure last of April 2020.

In addition, another web-based survey conducted by Marie (2020) in association with a marketing organization shows that almost 69% of SMEs confronted a more than 50% downfall in business within the first week after the MCO initiated whereas 92 % of SMEs now hold a decreasing exposé for Malaysian economic outline for the rest of year. At this point, some recent statistics also predict that approximately 80% of SMEs are facing high chances of failure in business operations considering the financial year 2020 (SME Malaysia, 2020). In fact, SMEs surely lack the ability to adjust with this magnitude of crisis because of resource scarcity, required expertise, and awareness level.

Because of the unlikeness of the COVID-19 epidemic, previous investigations may not be enough to detect the proper survival strategy for SMEs. However, the entire segment may possibly require prompt authoritative actions or policies on basis of the collaboration, integration or even interplay of government, universities, industry, and media to help SMEs adjust monetary capacity, new operational procedures, suitable digitalization, and exploitation, or even exploration of market opportunities considering the crisis period (Betz *et al.*, 2016; MacGregor *et al.*, 2010; Monteiro *et al.*, 2017).

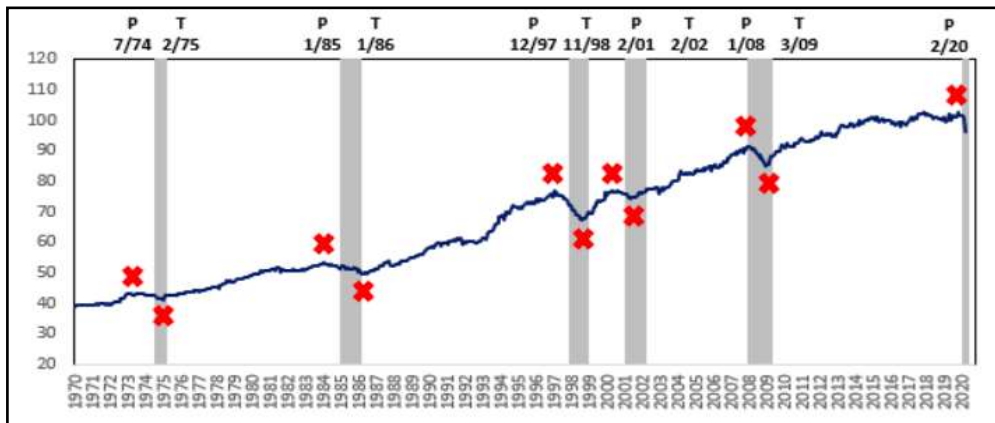
As a response to this severe turbulence, it is important to detect a suitable framework based on a solid theoretical foundation for comprehensive credibility which can help

the SMEs (Yatim *et al.*, 2018) to survive through this crisis whereas very limited research attempts actually look into the issue that how robust business models can support to endure in crisis periods related with epidemic (Dai *et al.*, 2020; Stephens, 2017).

In point of fact, crisis management configuration of SMEs has not widely researched for theory adjustments and realistic implications for management (Herbane, 2010; 2013; Runyan, 2006). But, crisis management studies for SMEs is vital concerning their contribution to emerging economies (Herbane, 2010).

Thus, bearing in mind the theoretical and practical premises mentioned above, this study targets to configure a comprehensive blueprint to help endurance of SMEs on basis of required strategic initiatives which can possibly interplay together in between states of “struggle” and “survive” leading to more sustained business success which actually imposes the QHIM mechanism at the very core of that outline.

Figure 1. Leading Index (LI)/ JAN 1970 to APR 2020



Source: DOSM (2020)

2. The Experience of Recession in Malaysia

Considering the last forty years timeframe, Malaysian business premises had confronted five phases of major economic crisis or challenge (DOSM, 2020). The trade war between the US and China trade war which triggered a few years back impacted several open economies namely Malaysia, and renowned economists have already warned of a probability severe recession in 2020 (Yean Tham *et al.*, 2019).

Nevertheless, the economic activities have been damaged viciously by the current pandemic. On basis of annual Leading Index (LI), the index indicated further to -5.5% in Apr 2020 as against -3.6% in Mar 2020 (DOSM, 2020). At this stage, considering the weak output of annual LI and the LI growth cycle deviation from the long term trend, it is assumed that the economic outline will continue in the deflation trajectory in the coming months of the year 2020. Since Oct 2019, LI has been indicating an early signal of economic crisis (Figure 1). Thus, the economy has started to downturn due to the global trade war and the confrontations have worsened with the outbreak of the COVID-19.

3. The Paradox of Crisis Management in SMEs

The idea of crisis in business refers to an unexpected situation that generates obstacles in organization's regular operational activities and involves both fiscal and reputation related risks (Coombs, 2007). Here, crisis management can be illustrated as a process by which a business organization adjusts various strategies to confront a hazardous scenario that threatens to damage the stakeholder's interests of the organization (Fink, 2013).

Three dimensions are common in most of the explanations of crisis: (1) a hazard to the business; (2) the factor of surprise; and (3) the requirement of quick decision making (Seeger *et al.*, 1998). The suitable strategic mechanism is linked with the mid-term future objective of the organization, increasing its accomplishments by dealing with weaknesses, threats, strengths, and opportunities. SMEs, due to resource constraint issues, unstable position within the market, and other elements, may possibly more sensitive to crisis-related events. But, SMEs can possibly hold a few advantages related with the adjustability, learning ability, innovation initiatives, customer relations (Herbane, 2013; Hong *et al.*, 2012).

Compared with previous crises events, the current COVID-19 turmoil is more critical. It has generated severe communal and economic concerns at all levels, including social aversion, occupational hazard, supply chain failures, stock market collapses, lockdowns, and issues linked with de-globalization (Crick and Crick, 2020). However, Munoz *et al.* (2019) detect that SMEs with proper crisis handling plans survive better from crisis events. The study of Dent and Cudworth (2018)

explains the effectiveness of leadership and decision-making and the effectiveness of teamwork as the top two challenges to effective crisis response.

Actually, SMEs need to rapidly customize their strategies and timely reorganize their courses of action (Ansell *et al.*, 2010). The capability of robustness and flexibility is highly required when dealing with severe crises as the COVID-19 pandemic. On the other hand, several studies indicate that SMEs with dynamic and innovative capabilities and are willing to learn from crises and contain a tendency to recover quickly (Elliott and MacPherson, 2010; Saunders *et al.*, 2014).

Here, the process of learning may possibly be executed in an informal manner by means of networking initiatives, mentoring, or coaching (Saunders *et al.*, 2014), which can hugely decrease the expenses involved. Moreover, Sheth (2020) also shows that SMEs interest in exploring business opportunities and integrating technology into their future growth process, which is an indication of a dynamic learning approach and adjustment from the crisis period. At this point, the intention to grow can possibly a strong driving factor for concern SMEs to strengthen their resilience outline and sustainable strategies.

4. The QHIM Perspective of the Study

Etzkowitz and Leydesdorff (1998; 2000) proposed the Triple Helix endeavor. This Triple Helix Model (TH) focuses on the interaction between universities, industry, and government, and considers these factors to be the key to improving conditions conducive to innovation initiatives. According to some authors (Khan and Al-Ansari, 2005; Van Horne and Dutot, 2017), the long-term growth of innovation and the importance of integrating the perspective of citizens based on culture and social norms lead to the Quadruple Helix model, adding yet another helix to the original one.

Afonso *et al.* (2012) Carayannis and Campbell (2009) argue that an economy's structure is divided into four helixes, consisting of universities, industry, government, and civil society, in which their relationships generate innovation and economic development. The QH mechanism may start with a reverse system, as per Afzal *et al.* (2018) and Roman *et al.* (2020).

For example, an individual at a firm might have a great idea for innovation in the technical process (knowledge stage). If the idea is supported by its supervisor and manager (stage of persuasion), the management may decide to contact a local university regarding further research (stage of decision). If the university has researchers and finances (or a corporation will choose to provide funding) to conduct the necessary testing, a method innovation (implementation stage) may be applied by the corporation, and then more advanced products can be developed.

Here, the concerned firm may also intend to apply for a product invention patent (confirmation stage), with some assistance from local government agencies. The

interaction that occurs in the Helixes usually derives from attempts to address the issue of emergencies (crisis period), and to create a solution when addressing innovation challenges that are not decided by a specific trend (Afzal *et al.*, 2018; Campanella *et al.*, 2017). In order to develop the foundations of a sustainable business sector, the collaboration between government, business, academia, and academics, known as the Quadruple Helix principle, is needed.

The Quadruple Helix paradigm indicates that the interventions of four players (Grundel and Dahlström, 2016; Leydesdorff, 2012) are a crucial factor deciding whether the economic sectors produce the strategic innovation outline required to resolve business challenges. Developing new products, processes, and services are, in fact, an important means by which SMEs can address or avoid market challenges. Related to this notion, the Quadruple Helix mechanism suggests that civil society elements such as culture, values, lifestyle, social problems, and media are important components of the innovation system and communicate with the activities of business firms, Government departments, and universities to either improve or undermine collective innovation initiatives. In an innovation system, civil society can be a subject or producer of ideas/knowledge/ technology (Reich-Graefe, 2016).

These four actors have the potential to support the development of new products and/or services and the creation of markets where such products and/or services can be successful in commercial terms (Björk, 2014). The anticipated performance can be achieved through the involvement of multiple players with each different capacity and ability to promote innovation system (Carayannis and Rakhmatullin, 2014) to confront across the unpredictable market scenario.

In keeping with the above ideas, Grundel and Dahlström (2016) found that government, business, universities, and civil society activities could potentially affect the development of Sweden's forestry-based bio-economy. Similarly, a Quadruple Helix method was used by Lindberg *et al.* (2014) to describe the difficulties posed by the enhanced quality and quantity issues of female entrepreneurship. To illustrate the use of creativity and information in creative fields, Colapinto and Porlezza (2012) also used a Quadruple Helix concept and a system theory.

Once again, Campanella *et al.* (2017) proved that transforming various assets, successfully reallocating resources, and making rational collaborative decisions can all contribute to improving the way firms are managed during market crises. Prior research has tended to focus on large firms in developed economies from a QH viewpoint (Grundel and Dahlström, 2016; Betz *et al.*, 2014).

We have tried to broaden Quadruple Helix's research by examining the applicability of the COVID-19 perspective to SMEs in the developing economy. It can provide an opportunity to understand the innovation input required by Malaysian SMEs during crises, the role played by various types of stakeholders in developing and promoting

these innovations, and how these different stakeholders may work together to help the survival process.

The latest paradigm of Quadruple Helix Innovation Model (QHIM) illustrates the connection in between innovation strategies and long term business survival processes of firms leading to the economic improvement of the country (MacGregor *et al.*, 2010).

As the world economic scenario becomes vulnerable by the impact of the COVID-19 epidemic, the argument is no more focused about whether a sustainable or stable economy would appear, but rather how the responsible entrepreneurship practices are starting to convert the business premises, resulting in a more responsible utilization of the allocated resources, lessening the influence on the regular business activities and profitability margin (Napolitano, 2010; Manninen and Meristö, 2019; Yun and Liu, 2019).

Nevertheless, the complex course of resource-friendly digitalization that rattles normal business practices, increasing contributions to dynamic technological platform, and comprehensive innovation can all together play as a vital instrument in supporting this revolution process (Moeuf *et al.*, 2020). These transformational alterations may possibly illustrate how decision-makers need to formulate a stable business output, and as a consequence, will direct the institutional adjustments required to backup innovation and growth for long time survival.

For instance, new technological prototypes can also signify the improvement and design of new business models, that may direct towards systemic innovations on basis of exploration and exploration approaches (Emmanuel, 2017; Selase *et al.*, 2019). When a technological breakthrough has been initialized due to any reason, decision-makers have to contend with how businesses can respond to those events. This embraces the approach where the learning process and competitive practices generate relational or collaborative capabilities within firms (Moghavvemi, 2012). Thus, innovation can serve a wide range of integral concerns, negotiated by both the private and public sectors of the country.

In a matter of fact, one of the Helixes, government, or concern authority can act as a vital role in the relocation of knowledge and other supports to safeguard Malaysian SMEs from this COVID-19 related crisis. The universities as another Helix are identified as the foundation for relocating technological models, as well as serving efficient HR and understandings (Dzisah and Etzkowitz, 2008) aligned with necessary measures to survive this period.

On the other hand, industries can produce occupational incubators, science, hubs and commercialization processes of understandings to support businesses in obtaining their objectives (Ranga and Garzik, 2015) to manage the crisis efficiently. A focused civil community in association with media and culture impacts the formal bottom-top participation of other agents (Yawson, 2009). In this context, the natural

environment is also detected for the sustained existence of the firms by serving essential resources (Carayannis and Campbell, 2010).

Some studies claim that the innovation holds underlying impact considering the success of the mentioned integration of different agents or Helixes whereas SMEs to satisfy customers, need to develop an adjusted offer related with their products and services that address the consumer needs on this crisis point happening by COVID-19 (Keh *et al.*, 2007; Simon *et al.*, 2000). This direction actually promotes a very important element—"the concerned individual (researcher, civil servant, entrepreneur, etc.)" who has a role within the mechanism to make a difference through innovation—are the key from the perspective of survival dynamics of SMEs leading to business success (Domi *et al.*, 2020; Kolehmainen *et al.*, 2016).

5. Methodology

Social media or online platforms have progressively replaced different categories of the communication processes, such as telephone, emails, or even face to face interviews (Phan and Airoldi, 2015) in management researches. As a result, the growing interest in tech-oriented digital media and social interactions is improving the research consequences in an evolving area of multidisciplinary nature which brings together wide range of scholars from various disciplines (Gonzalez-Ballon *et al.*, 2014).

Here, the social media platform considering online focus group has been a catalyst in the entire data collection process in terms of the access to the information and the evaluation of different outcomes and concepts, but e-mail has been used as well. In fact, online focus groups as a research tool are ideal for certain situations (Theroux *et al.*, 2019).

A skilled moderator has facilitated an electronic discussion on how Malaysian SMEs can survive the present struggling period triggered by the COVID-19 epidemic among a small group of respondents, allowing them to respond spontaneously to the issues raised concerning necessary initiatives for survival and the supporting roles from government, university, civil society, and industry. The assigned moderator introduces the quadruple helix based purpose of the discussion and ensure that the participants have the same level of understanding (Figure 2).

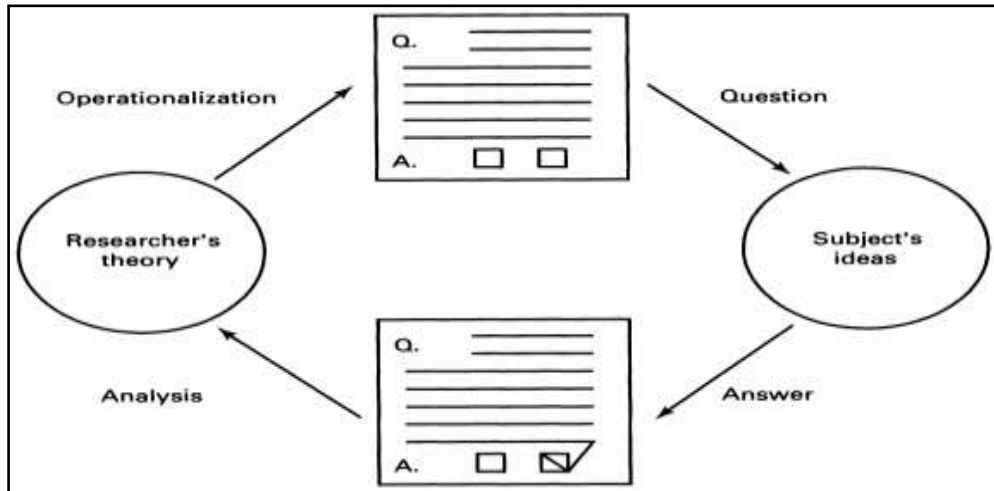
The study has addressed the following key research question:

"How do relationships in a Quadruple Helix setting – actors, resources and activities – contribute to the survival process of SMEs during this crisis?"

The subject's response is attempted to frame entirely to a set of operational Helix based fragments. The ground rules have been established for discussion so that the participants feel the setting is comfortable to express their ideas or views regarding the survival process of Malaysian SMEs. The Helix conceptual system has attempted

to be adjusted on the flow of discussion. It has been tried to keep the discussion concrete rather than abstract considering Helix dimensions.

Figure 2. Discussion outline (QHIM perspectives)



Source: Based on Pawson's (1996) theorising the interview outline.

The focus group consists of 10 participants from various fields, such as Academia, Banking, SMEs, and NGOs. The 60 minutes long interactive session in the group helped regarding elicit in-depth thoughts and discussions. The whole process includes the proper utilization of probe, follow-up, and exit questions considering the Helix mechanism. Here, the data collection process also considers the non-verbal data based on the respondent's posture, attitude, silences, hesitations, and pitch of voice tone.

Later, the data coding has been executed through initial coding and focus coding whereas the use of content analysis is directed towards a systematic coding of information by outlining them into several categories. Obtained findings also shared with the respondents of the study through participant validation to validate the outcomes which increase the credibility level of the report. The study also embraced the process of collecting secondary information through different newspapers, magazines, websites, E-libraries, documentaries, and related journal sources. The government and the non-government statistics also considered by the researchers to obtain the main objective of the research.

6. Results and Discussions

A total number of 10 participants have reflected their ideas on the focus group session. Out of 10, 8 are male and 2 are female respondents. The maximum numbers of respondents are between the age group of 30-40 and hold at least a degree certification as academic qualification. The majority of the participants hold

5 years+ of professional experience in their respective fields. Two of the participants have reflected their understanding and ideas about the concern research objective on basis of their more than 10 years of professional experiences.

Table 1. Demographic information of participants

Professional Experiences		Academic Qualification	
Years	No of Participants	Name of Certification	No of Participants
0-5 years	5	Degree	6
5-10 years	3	Masters	3
10+ years	2	PhD	1
Total Number of Participants=10/ Male- 8, Female-2			

Source: Compiled from online focus group discussion.

Table 2. Major initiatives detected for the survival of Malaysian SMEs

Detected Initiatives for Survival of SMEs	Number of Participants Identified with The Initiatives
[a] Access and management of financial resources	9
[b] Exploration-exploitation of opportunities	7
[c] Digitalisation	7
[d] Efficient negotiation	6
[e] Leadership	5

Source: Compiled from online focus group discussion.

The target of this part is to identify the underlying factors that can support Malaysian SMEs to determine how to manage and survive this ongoing struggle happening due to COVID-19 pandemic. The discussions between participants mainly revealed that concern authority, academic institutes, businesses, media on basis of the innovation practices have a significant influence on SME’s survival process regarding highly uncertain scenarios.

These agents support monetary access, management issues, and communication of the SMEs (Manninen and Meristö, 2019) whereas Rosenbusch *et al.* (2011) also describe that innovation practices have a significant contribution to the survival of SMEs considering the turbulent situation. However, the study organized the findings into 5 major themes that emerged during the analysis process, such as- access and

management of financial resources, exploration-exploitation of opportunities, efficient negotiation, digital adoption, and leadership commitment.

6.1 Access and Manage Financial Resources

The summary obtained from group discussions primarily indicates that Malaysian SMEs need to utilize resources and financial measures offered by the concerned authority (government and non-government) to keep operational activities ongoing as well as paying salaries to their employees. In fact, SMEs also have to manage some other regular expenses, which include factory or office rent, loan payment, and utilities. One of the participants [A09] from SMEs reflects the criticality of the scenario as “....it’s a great struggle. I’ve never had a loan and I feel if I applied for one I might struggle to make any profit because I’ll be paying it back....”

Many prior studies indicate that SME’s option to access financial resources with the ability to manage it properly can be crucial for businesses to achieve their desired growth considering an unstable economic situations (Carbo-Valverde *et al.*, 2016; Cowling *et al.*, 2018). The lack of access into finance due to emerged challenges (Ex- war, pandemic, recession) can constrain the required cash flow which surely hamper SME’s survival aspects and create barriers towards the innovation process diffusing into the economic outline (Didier *et al.*, 2020).

Recently, the PM, Tan Sri Muhyiddin Yassin declared a stimulus outline worth RM10 billion to help struggling SMEs due to the COVID-19 pandemic whereas additional charges are waived on delay payment of taxes (Kaur, 2020). Financial institutions have also offered six months deferred timeline on a loan payment and the restructuring of disbursed corporate loans.

SME owners need to formulate a strategy to get all this supports from the government as well as non-government entities to maintain their minimum cash flow which can allow some survival space before formulating other strategic initiatives. But some of the reflected participants criticize the stimulus on basis of some requirements to qualify for fiscal stimulus packages may render it a little bit hard or complex to claim the wage-related subsidies.

On the other hand, a few respondents also suggest cutting overall expenses of firms (Didier *et al.*, 2020) through not including more full-time employees and instead of that run operational activities as per project basis with freelancers considering the interplay within the course of survival. At this point, Malaysian SMEs also require to form complementary industry alliances within this crisis by leveraging on each other’s ranges of the resource base and various capabilities and convert into a critical business entity that can manage the current market uncertainty with dynamism.

Inside the QH mechanism, the aspect related to financial matters of SMEs is a relevant concern for survival and success (Hasche *et al.*, 2019). The participants indicate that the government has to play an efficient role to formulate supportive

fiscal policies for the long-term in alliances with concerned industries and universities. Later universities can also provide the required expertise regarding appropriate management of all financial access during this pandemic leading to business success.

However, the study detects that QH based collaborative mechanism may equate a purchase guarantee given by the government to SMEs at the end-stage of the value chain process whereas concerned firms require to continue their regular operations and pay the employees without disruptions. Also besides, the discussions among participants also serve a strategic outline that supports the reduction of interest rate near to zero and providing considering stabilization measures to the financial institutions in association with suitable tax breaks, sector-oriented bailouts and occupational support for workforces.

Nevertheless, an integrative functioning strategic interaction among all the different agents focused on the QH covers all other perspectives, and precisely the factor related to financial matters, as the study indicates.

6.2 Exploration-Exploitation of Opportunities

In particular, the research investigation based on the survival model linked with SMEs-specific crisis severity indicates a substantial idea of how firms can search for a better strategic orientation with their current struggling period with the help of exploration-exploitation initiatives that considers the firm's situation within the range broader economic uncertainties. At this point, One of the respondents [A01] attempts to highlight the importance of taking advantage from the current pandemic scenario as *"...History has observed some of the best names in the business to have been emerged due to the worst crises- Apple, Disney, IBM, Alibaba, and Microsoft are a few instances. You need to take risks and also you need to predict the changing market demands."*

The study finds that SMEs through calculated risk-taking process can make COVID-19 as the propelling force for business growth and reviving dormant potential in others. At this context, the respondent has identified several opportunities considering different sectors- a) cold storage can be an opportunity in the food segment; b) virtual reality is a new prospect for the entertainment industry; c) virtual classroom can give universities more remote options, and d) smart hospitals are a good choice for the healthcare industry.

Many of the participants reflect the idea that by adjusting the internal allocated resources and abilities to re-shape the current products and services, SMEs can come up with fresh ranges of offerings formulated to meet the current demand in the crisis. SMEs require to fine-tune present business blueprint to explain the caused alteration, prioritize operational activities, search for business opportunities through exploration-exploitation to achieve competitive advantage over counterparts, and

ensure less disruption in the business process. However, the focus group discussions also suggest that to also investigate the firm's competitive position as well as the wider economic standpoint before selecting either exploitative or explorative initiatives to gain from the pandemic scenario.

In alliance with the above discussions, the investigation of Osiyevskyy *et al.* (2020) claims that both exploration-exploitation initiatives based on resources may possibly serve distinct strategic gateways to manage a firm's growth or survival in a crises context. Some studies also argue that the exploration-exploitation path can only play a significant role in a firm's output when the market environment is stable (Gonzalez and de Melo, 2017). In fact, exploration can direct to higher variability of survival outputs but clearly serves the option to capitalize new opportunities.

On the other side, if the firm has been confronting a scenario where it faces severe obstacles or threats concerning its way of survival, and extra financial options and resources are not likely available, selecting an exploitative tactic might be a comprehensive choice (Alcalde-Heras *et al.*, 2019). Nevertheless, the discussions and arguments within the respondents also suggest that under difficult crisis scenario, SMEs those are adopting exploitation strategy can predict better opportunity for survival but a gradual decline in performance. On the other hand, exploration considering COVID-19 crises can possibly serve better access main business opportunities leading to greater performance, along with an expense of high-risk factors regarding survival.

Returning to the QHIM based theoretical perspective, the findings of the study tend to diverse beyond the relatively static nature of the mentioned outline. Basically, the QH mechanism, if appropriately executed considering the COVID-19 crisis scenario, can promote a comprehensive innovation-based culture in business (Afonso and Monteiro, 2017) leading to success. The present study also sets an example that the idea of halal has been implemented into many industries whereas halal considering many dimensions, also call for cleanliness. The hundreds of schemes that authority are circulating to people to confront the COVID-19 crisis contain several major themes, one of them is cleanliness.

This can be obtained through effective utilization of media, conferences or meetings, and online platforms in an interactive participation with other concern agents. As suggested, the QH mechanism directs civil society or media to be involved with the other three types of innovation actors – authority, university, and industry regarding exploration-exploitation of opportunities whereas this are vital not only to survive the crisis, but also for sustainable business growth (Galvão *et al.*, 2017). The present case, however, the citizens (owner-employee) are mostly in dialog with the regional office representatives only.

6.3 Efficient Negotiation

The outputs from the explorative analysis have revealed that active and transparent forms of negotiation are the most important instrument between the entrepreneurs, financial investors, and their workforces, the essential foundation requires to be developed to promote mutual and continuous interaction between all stakeholders to survive the crisis. A number of participants also suggest that SMEs require to execute loyal and continuous interaction with their present customer segment, altering payment terms to promote early fund transfers, and adjusting new prices on current supply concern.

At this point, it may possibly important to contact with landlord to explain the current position and ask to renegotiate the lease clauses. However, many studies emphasize that considering the time of crisis, efficient negotiation or communication can possibly an effective defensive measure within SME's survival strategy to continue relevant and honest sets of messages with its stakeholders (Avram and Kühne, 2008; Juntunen *et al.*, 2010).

In fact, managing a regular dialogue or negotiation process between owner-manager and employees allows for the exchange of suitable direction on the overall business, and supports with formulating combined and smart decisions leading to long-term survival process.

At this juncture, outcomes of the study illustrate that QH based interactions may possibly promote innovative tools to bring improvements in the external-internal negotiation process of SMEs considering the turbulent period. For instance, when the sales or marketing related employees identify a requirement to change or adjust a product or service under the COVID-19 scenario, they negotiate with the consumer and inform the concerned management point.

All the process needs to be delivered with a central system based on emails, WhatsApp, Viber, or any another negotiation system developed by the firm. It helps to achieve the required efficiency for survival and success (Grace *et al.*, 2018). The study believes that in times of severe crisis, a number of efficient decision making can be executed through proper negotiations whereas the major duty of any firm's COVID-19 measures need to reduce risk factors and avoid catastrophic degradations linked with loss.

The government can act as an important Helix, as per the rationale of internal-external negotiations with different entities thus facilitating the operation of the SMEs in this crisis (Hartmann, 2019). The intended QH configuration can promote SMEs to interact with universities for the exclusive utilization of their knowledge (Know-How), so as to achieve specialized individual and understanding, something that SMEs cannot contain on their own.

In many, if not most situations it can be supportive to move from definitive to contingent perspectives and from a negotiation based attitude into an integrated

decision-making process which can be useful to handle the crisis in various ways. However, these negotiation strategies are particularly relevant- perhaps critical for those who recently having to negotiate a COVID-19 measure under institutional setups.

6.4 Digital Adoption

The study identifies three major digital adjustments due to this pandemic within the business- a) increase in the acceptance level regarding online services; b) a humongous necessity for internet services for SMEs; and c) enhanced connectivity among various categories of industries. At this juncture, around 70% of participants think that it is vital for SMEs to utilize online sales and distribution channels as much as possible to meet with changing demands on basis of loyal customer segment whereas the main barrier in this respect is lack of awareness in terms of the influence and advantage of adopting with new technologies.

The findings illustrate that the companies do not require to re-engineer the process they deal with their daily operations, they will also need to reinvent internal collaboration outline, use of technology and digital-oriented processes to offer business to continue as normal and to sustain resilience despite severe COVID-19 pandemic challenges. Here, a participant [A02] supports the necessity of digital adoption to handle the crisis as “...*digital measures are there to help them reduce many risk factors from continuous disruption to their business operations.*”

The present study also explains that the COVID-19 related crises scenario has also created digitalization opportunities for some SMEs to setup multiple satellite offices into different locations (Ex-legal firms, CA firms) and become remote which basically allows them to cover the entire state. SMEs are required to use video conferencing and content-sharing options to keep employees connected around the regions. The remote state can possibly cost-efficiency in terms of high productivity (Baporikar, 2020) considering the crises.

However, several studies support the mentioned findings by indicating that digital adoption can save time and resources where firms manage the average volume of production and hold the lesser internal capacity to confront with the severely complex business environment (Kergroach, 2020; Seethamraju, 2015). Nevertheless, considering recent uncertainties the obligation of digital distribution channels, sales channels, products, and operational procedures is now essential for SMEs in every location. Investing in a frisky and resilient outline depicts like an imposed decision now, but it is in the matter of fact, a long-term investment that protects SMEs or other businesses from any potential turmoil.

The study also identifies some major concerns as a) flexibility, b) talent pool, b) collaboration related to prompt implementation of digitalization process in this crisis period. SMEs need to ensure flexibility through the management process in this

rapidly changing scenario whereas they must continue proper training and development for their employees to create a skilled workforce.

At this point, government-university-industry facet interactions need to formulate a set of strategies with measurable targets for concern segment to confirm that all the industry players are on the same platform. The process of close collaboration and interdisciplinary working practices inside SMEs need to be supported for better synergies.

However, the participants also have mentioned “lack of awareness” regarding the digitalization process which can suitably be addressed and covered by media as one of the helixes. In fact, future business success needs not only the right mindset but also motivation and proper skills on the part of employees or even management (Casidy *et al.*, 2019). These collective interactions between QH agents can not only initiate innovation throughout the process but also ensure all SMEs are aligned in terms of knowledge and drive for digital change.

6.5 Leadership Commitment

Effective leadership commitment is absolutely important for SMEs and its employees in a severe crisis with such damaging outputs and obliges physical as well as emotional strength. The argument of participants from SMEs and academia indicates that the commitment of owner-manager is vital to implement essential initiatives to ensure their workforce’s health and safety towards efficient productivity, in the current context.

Thus, the owner-manager as a leader also requires to shape their business operations and their employees to adopt suitable alterations and stay adaptable to survive. The study of Bartik *et al.* (2020) shows that the initial step is to formulate the needed environment where the workforce feels motivated to put in the additional performances or outputs.

However, the leaders basically serve a critical role in adopting new courses of operational activities where the empathy level of leaders is a major enabler for the employees to feel capacitated and attached (Aslan *et al.*, 2011). The managers of SMEs need to encourage to search a new innovation, ideas that they view, and considers as less risky. Thus, altering the present operational culture through leadership supports aligning the employee’s attitude to appreciate the new adjustments and to be able to execute responsibilities in the new settings on basis of more productive approach.

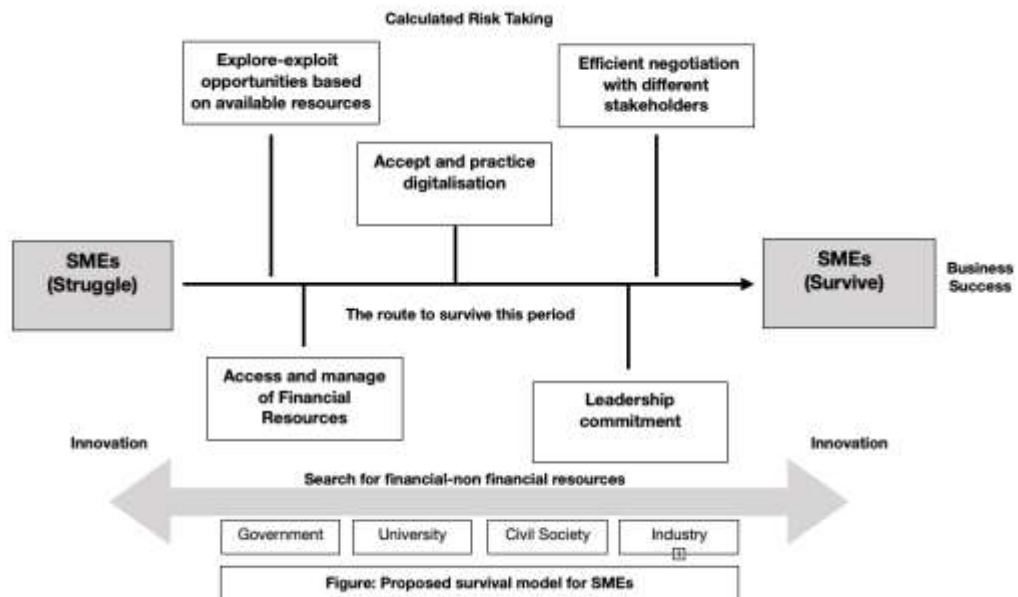
In this context, SMEs may possibly require proactive and creative leadership to survive in a turbulent period (Almeida *et al.*, 2015). The present study emphasizes that innovation can only emerge within SMEs regarding this crisis if it is preceded by appropriate leadership commitment whereas it is the main driving element behind business success. Here, the innovation is the output of collaborative interaction

between QH agents which allows business leaders to generate the most efficient and compelling strategies for harnessing and nursing talents who can initiate performance, innovation, and sustainability during this COVID-19 crises. This leadership based alteration towards an innovation paradigm also has the ability to decrease the requirement for innovation facet investments, making the business innovation process more accessible to SMEs concerting the pandemic.

6.6 Proposed Conceptual Model

To confront these disruptive events due to COVID-19, SMEs require to formulate timely and efficient crisis management responses for their survival and success. As per extensive ranges of discussions and analysis, this study indicates access and manage financial resources, exploration-exploitation of opportunities, efficient negotiation, digital adoption and Leadership commitment sourced on the combination of quadruple agents are main initiatives for Malaysian SMEs considering the interplay between states of struggle and survive. However, the conceptual blueprint suggests infusing innovation throughout the route of survival where calculated risk-taking capacity of owner-manager can possibly contribute as an important strategic mindset.

Figure 2. Proposed survival model for SMEs



Source: Formulated by author for the study.

The model shows the direction to create responsible initiatives on basis of QHIM mechanism to reduce damage and hold the extent and intensity of the mentioned

crisis whereas, during the survival phase, businesses oblige to implement procedures to restore resume regular operations and restore necessary functioning capabilities. The model clearly emphasizes that systematic initiatives are more appropriate rather than random procedures in the case of the COVID-19 crisis. SMEs due to their vulnerable position in market and strengths dynamics, illustrate a critical style of crisis management strategy through the mentioned model based on theoretical underpinning.

6.7 Practical Implications of the Study

The findings will be served as a tool for the owner-manager in their decision making process whereas the outline can also help the SMEs to obtain desired cash-flow and marginal profitability during this crisis moment through proper strategy. From an academic perspective, the findings also serve as a direction for future researches related to long-term growth during the crisis period. In addition, the QHIM theoretical approach can be a gateway for social science researchers to explore various business concerns considering the context of crisis or pandemic.

On the other part, the study has the potential to help the concerned policymakers to adjust or formulate appropriate intervention tactics regarding how SMEs can possibly survive this epidemic or even other crisis periods. It can play a key role regarding the allocation of various financial and non-financial resources. As per social perspective, the study will help in the country's resilience by providing a foundation where employees and employers face the crisis together hand in hand whereas the findings can aid in employment protection through training schemes.

6.8 Final Thoughts, Limitations and Future Direction of the Study

The COVID-19 crisis has been generating new challenges for researchers on an almost unpredictable scale. The disastrous impacts of the pandemic are clearly endless. The study has established an outline for Malaysian SMEs to survive the COVID-19 crisis period. As the equation related to crisis management is an ongoing process, continuous restructuring by dynamic useful understanding obtained can possibly minimize the threat of the next crisis.

Here, the focused QH mechanism-based outline for survival indicates a timely transformation within the strategic initiatives of SMEs that can serve both business survival process and concern employees in near future considering the entire scenario of the pandemic as a "cycle" instead of an "event". The study mainly clarifies the significance of interaction, collaboration, and interplay between different Helix spheres to an adjusted innovation initiative related survival mechanism for SMEs, but nonetheless, the study also indicates the critical part of obtaining appropriate interaction between the mentioned spheres.

At this junction, building a supportive environment where SME's survival process and adjusted innovation aligned with digitalization (considering cost opportunity) has emerged as a prime concern for Malaysian authority. Again, the concern of value creation or formulation process throughout the survival phase cannot be ignored regarding future business growth as initiatives performed and resources integrated by various concern actors in order to obtain certain useful accomplishments, where the issue of value creation can possibly be identified as the key reason of different actors to involve in required interactions to construct and implement a survival path for SMEs. Before co-operating in value formulation initiatives, those actors have precise expectations in relation to future collaboration or interplay to achieve the necessary outcomes and objectives of the SMEs.

In fact, the results of the study reveal a number of interesting insights regarding SMEs' survival requirements. Nevertheless, the findings indicate that to survive in a turbulent situation; SMEs are obliged to adjust their businesses and tactical spotlights, become comprehensively engaged in new opportunities, be flexible and formulate innovative initiatives. An understanding of appropriate technologies and their ability to adjust the production processes and supply chain activities is vital.

It is also to be noted that the main set of challenges of SMEs integrated with the greater financial resources that have risen with the worldwide COVID-19 pandemic, can possibly instigate widespread turmoil in the business, especially in the regions where firms entered the crises with a huge level of outstanding debts (Arrieta-Paredes *et al.*, 2020; Reis, 2020). Thus, the Malaysian government in association with other spheres of QH mechanism require to consider the concern of limited resources (Ahmad *et al.*, 2018) and they also need to prioritize and assess the trade-offs linked with various policies whereas they require to formulate decisions on how much to allocate to SMEs comparing to other business entities.

The interactions between four Helixes can possibly help to assess the funding requirements of SMEs based on short-term cash flow forecasts. In addition, to support longer-term resilience of SMEs and their potential for growth after the pandemic, it is also vital that Malaysia react to the crisis embracing different structural initiatives based on an inter-play with other helixes.

At this point, the fourth element of the QH mechanism may perhaps more critical to limit it to emerge as an entire separate helix of users or end-users regarding policy formulation or appropriate decision making. It is also required to formulate the entire interaction mapping with the fourth helix as an independent useful sphere whereas obtained survival configuration within the study is mainly generated by the dynamic relationships (activities, resources, and actors) between academia, industry, and government.

However, the main limitation of the study indicates a relatively smaller sample size, therefore the findings cannot be accurately explained through generalized

population. The study also has no way to verify or check the findings objectively against the suggestions described by the respondents. In addition, the sample was framed to only Malaysian participants, so repeating the study in another country with local participants may serve interesting outputs. Future research activities need to investigate more on internal capabilities (Ex-motivational factors) of SMEs focusing on strategic innovation practices in case of handling crises or even economic recession. In addition, future QHIM based investigation may also inquire how associations and roles evolve or change over time, as well as the entry and exit criteria of various related actors within networks regarding SME's survival leading to success or continuous growth.

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