THE IMPACT OF AMBIDEXTROUS KNOWLEDGE CAPABILITIES, SUPPLY CHAIN MANAGEMENT SKILLS, COPING CAPACITY AND MODERATED BY EMOTIONAL INTELLIGENCE TOWARDS DECISION-MAKING COMPETENCE

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LIST OF ABBREVIATIONS

A-DMC	Adult Decision-Making Competence
AI	Artificial Intelligence
AVE	Average Variance Extracted
BDT	Behavioural Decisional Theory
BOM	Behavioural Operation Management
CA	Cronbach Alpha
CC	Coping Capacity
CMB	Common Method Bias
CMV	Common Method Variance
CPC	Certificate of Professional Competence
CR	Composite Reliability
DMC	Decision-making Competence
EI	Emotional Intelligence
GDP	Gross Domestic Product
HCM	Hierarchical Component Measurement
HTMT	Heterotrait-monotrait Ratio
IPMA	Importance-Performance Matrix Analysis
KSA	Knowledge, Skills and Abilites
MCO	Movement Control Order

OLS	Ordinary Least Squares
OR	Operation Research
PLS	Partial Least Squares
PPE	Personal Protective Equipment
ROI	Return on Investment
SC	Supply Chain
SCM	Supply Chain Management
SEM	Structural Equation Modeling
SPSS	Statistical Package for Social Science
VIF	Variation Inflation Factor
WFH	Work From Home
WHO	World Health Organization

LIST OF APPENDICES

KESAN KEBOLEHUPAYAAN PENGETAHUAN, KEMAHIRAN PENGURUSAN RANTAIAN BEKALAN, KAPASITI MENANGANI DAN DIPERANTARAKAN OLEH KECERDASAN EMOSI KE ARAH KOMPETENSI MEMBUAT KEPUTUSAN

ABSTRAK

Pandemik yang paling baru ini telah menyebabkan krisis global yang besar hingga meruntuhkan banyak rantaian bekalan global di mana pengeluar Malaysia terperangkap dalam krisis cip global. Pembuat keputusan perlu berhadapan dengan kedudukan yang sangat mencabar kerana penerapan mekanisme ketahanan rantaian bekalan mungkin boleh dipersoalkan dan tidak boleh dipercayai dalam persekitaran daya tahan rantaian bekalan. Akibatnya, pembuat keputusan di syarikat pembuatan di Malaysia terjejas kerana mereka perlu mempelajari cara-cara baru untuk menghadapi, menyesuaikan diri dan mengurangkan risiko untuk mengharungi ketidakpastian yang dihadapi. Ini bermakna pengetahuan, kemahiran, kebolehan dan kompetensi pembuat keputusan ini telah menjadi tumpuan utama untuk kelangsungan hidup dan kemampatan organisasi. Objektif utama kajian ini adalah untuk mengkaji hubungan antara kebolehupayaan pengetahuan, kemahiran pergurusan rantaian bekalan, kapasiti menangani dan kecerdasan emosi yang mempengaruhi kompetensi membuat keputusan dalam persekitaran daya tahan rantaian bekalan dalam syarikat pembuatan Malaysia melalui penyepaduan teori keputusan tingkah laku (*behavioural decisional theory*) dan model kompetensi (*competency model*). Jurang penyelidikan dan rangka kerja teori berkenaan dengan konstruk kompetensi membuat keputusan telah dihuraikan. Penyelidikan ini disasarkan kepada pengurus rantaian bekalan di syarikat pembuatan Malaysia. Saiz sampel bagi penyelidikan ini adalah 193. Data dianalisis

menggunakan SPSS dan Smart Partial Least Square (*SmartPLS*). Kajian ini mengesahkan bahawa keupayaan pengetahuan dan kemahiran pengurusan rantaian bekalan boleh mempengaruhi kapasiti menangani. Kapasiti menangani memainkan peranan yang penting sebagai pengantara antara keupayaan pengetahuan dan kompetensi membuat keputusan dalam persekitaran daya tahan rantaian bekalan. Kajian ini menyediakan rangka kerja dan pandangan pragmatik yang bernilai untuk membuat keputusan pengurusan dalam konteks persekitaran daya tahan rantaian bekalan pada zaman pasca pandemik ini. Dengan memahami pembuatan keputusan rantaian bekalan dalam operasi, juga boleh membantu menyumbang kepada pengurangan risiko rantaian bekalan di luar tindakan risiko biasa dalam pengurangan risiko secara proaktif untuk mengekalkan rantaian bekalan masa hadapan.

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ABSTRACT

The most recent global pandemic outbreak have created a huge global crisis in breaking down many global supply chains whereby the Malaysian manufacturers were caught in the global chip crisis. Decision-makers are faced with very challenging position as the application of supply chain resilience mechanisms may be questionable and unreliable in the supply chain resilience surrounding. As a result, decision-makers in the Malaysian manufacturing companies are very much impacted as they have to continue to learn new ways to cope, adapt and mitigate the risk to navigate through the uncertainties ahead of them. This implies that the knowledge, skills, abilities and competencies of these decision-makers have become the centre stage for organizations' survival and sustainability. The main objective of this study is to examine the relationship between ambidextrous knowledge capabilities, supply chain management skills, coping capacity and emotional intelligence that influence decision-making competence in the supply chain resilience environment in the manufacturing companies of Malaysia through the integration of the behavioural decisional theory and competency model. The research gaps and theoretical framework with respect to the construct of decision-making competence are elaborated. This research is targeted to the supply chain management in the Malaysian manufacturing firms. The sample size for this research is 193. Data was analysed using the SPSS and Smart Partial Least

Square (*SmartPLS*). This research confirms that knowledge capabilities and supply chain management skills can influence coping capacity. Coping capacity plays a crucial role as a mediator between ambidextrous knowledge capabilities and decsion-making competence in supply chain resilience environment. vague world By understanding the supply chain decision-making in operations, this can also help to contribute to de-risking of supply chain beyond the usual risk response into the proactive reduction of risks for future supply chain sustainability.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The research background is discussed in the thesis first chapter, providing an overview of the supply chain resilience surrounding in the world. This action follows the disruptions and ambiguity that highlight the significance of supply chain managers' decision-making competence in this industry. The problem statement, research questions, and research objectives are discussed. Following that, the research scope, research significance, description of the key terms applied in this study, and a summary of this thesis organisation are presented.

1.2 Background of the Study

The environment of supply chain is constantly evolving and unpredictable. This is due to the current rapid and dynamic of supply chain business environment that heavily involved in the coordination and interaction of various activities and processes among the supply chain stakeholders to ensure the efficient flow of goods and services from supplier to end customers. Therefore, effective decision-making is crucial in managing this complex supply chain.

Several examples have been present regarding the disruptions in supply chains in the current years. These disruptions were attributed to natural disasters, including the 1999 Taiwan earthquake impacting PC manufacturers such as Dell and Apple and the 1998 Hurricane Mitch that harmed banana plantations. This condition impacts supply chains such as Dole and 1999 hurricane Floyd flooding the Daimler-Chrysler plant in Greenville. Other disruptions were the results of epidemics, including the outbreak of the mad-cow disease in Europe in 2001 that limited the supply of leather

goods. Another disruption was SARS in 2003 that impacted IT supply chains. A number of disruptions were caused by man-made disasters, including the fire accident at the electronics plant in Albuquerque, New Mexico. This situation led to a loss of $400 million carried by Ericsson, the 2002 longshoreman attacks at US ports that were predicted to cause a loss of $11 to $22 billion, and terrorist attacks including 9/11 that led to the paralysis of transportation networks in the United States.

The recent global pandemic has harmed the economies and societies locally, nationally, and globally. Researchers (Cochrane, 2020; Kharas and Triggs, 2020) highlighted that the pandemic is highly distinct from a standard recessionary (aggregate demand) shock or a common inflationary supply shock (oil prices shock). However, this "health shock" is represented by supply and demand shocks (Meyer et al., 2020). This unprecedented event has had a tandem impact on health and the economy on the local and global levels.

The previous pandemic leading to quarantines, border closures, restrictions in domestic travel, trading curbs, and the closure of many key services and market activities in the supply chain. A wide range of supply chain elements receive sequential or concurrent impacts, particularly in logistics, manufacturing, distribution centres, and markets that have collapsed in overlapping time frames (Gultekin et al., 2022; Ivanov and Das, 2020; Ramani et al., 2022; Xu et al., 2022). Kapoor et al. (2021) highlighted that pandemic has changed the landscape of manufacturing. Manufacturers are frequently intervening in the management of these challenges and stabilising their operations. This action is performed through the investment in digital technologies, remodelling and reallocation of resources, localisation and regionalisation, servitisation, and focus on policies that enable their survival in the changing economy (Kapoor et al., 2021). The manufacturers who heavily depend on foreign labour, global

supply chains, and activities with high export volume receive the strongest impact on their business (Harris et al., 2020). The supply chain decision made at that point of time in identifying the contingency plan and taking alternative ways is crucial to mitigate the impact on the business operations.

Based on the US Institute of Supply Management, disruption occurs in the supply chains of approximately 75% of manufacturing organisations. This condition leads to higher production costs for these organisations (Fernandes, 2020). As a result, a drastic decrease and imbalance of the supply accessibility in global supply chains take place due to the demands, leading to a severe global crisis from breaking numerous global supply chains (Araz et al., 2020). In addition, manufacturers continue to experience issues with profitability and liquidity, although the pandemic increases their vulnerability to economic shocks (Juergensen et al., 2020). Meanwhile, manufacturers are struggling due to order cancellation, low revenues, and volatility of stock prices as a result of the economic storm (Handfield et al., 2020; Tian et al., 2021; Wuest et al., 2020).

Around the same time, the outbreaks of swarming locusts in Egypt signify a severe risk to the global food systems, leading to heavy disturbance in food supplies on the local and global levels (Xu et al., 2021). Following that, on February 24, 2022, the Russian-Ukrainian conflict negatively impacted food supply chains, particularly those in the countries that depend on wheat, sunflower oil, and maize (Jagtap et al, 2022). Nearly 30% of the world's traded wheat and 14% of its calories are produced in Russia and Ukraine. Moreover, Russia and Belarus are currently holding a significant percentage of the available global supply of fertilisers. As a direct consequence, the cost of food and fertiliser has skyrocketed, which possibly impacts

the livelihood of every farmer on the planet in the year of 2022 and for the foreseeable future (Behnassi and El Haiba, 2022).

The aforementioned situation creates a crucial impact on manufacturing, production, processing, sourcing, logistics, and severe fluctuations in demand among countries that depend on Ukraine for imports, which is one of Europe's breadbaskets (Jagtap et al, 2022). Food and gasoline costs have also increased, with Russia being Europe's main gas supplier. Countries such as Pakistan, Peru, and Sri Lanka, rely significantly on agricultural exports from Ukraine and Russia for their food and feed sectors, hence receive the impacts of increasing food and fuel costs. This situation is followed by a flashpoint in Italy, France, Germany, and Spain, where the energy allowances, decreases in pricing, and levies are equal to the fiscal action by their individual governments in response to increasing energy costs (Welsh, 2022). Subsequently, attention is paid to the development of stronger supply chains (Handfield et al., 2020: Linton and Vakil, 2020; Reitsma et al., 2021; Van Hoek, 2020a). Supply chain decision makers need to consider transportation alternatives, inventory management, supplier networks, and customer demands, to make informed decisions that minimise the impact of such crises on supply chain.

In Malaysia, the manufacturing sector has been a pillar of economic growth, accounting for approximately 23% of GDP and 86% of total exports, and serving as the primary source of demand for output from other economic sectors (Bernama, 2021). Malaysia focuses on production activities supported by a number of comparative advantages, such as access to raw materials, low labour and power costs, and less restrictive environmental legislation (Morales-Contreras et al., 2021). These advantages can be capitalized by the competent supply chain managers and making strategic decisions aligned with the organization's goals and objectives

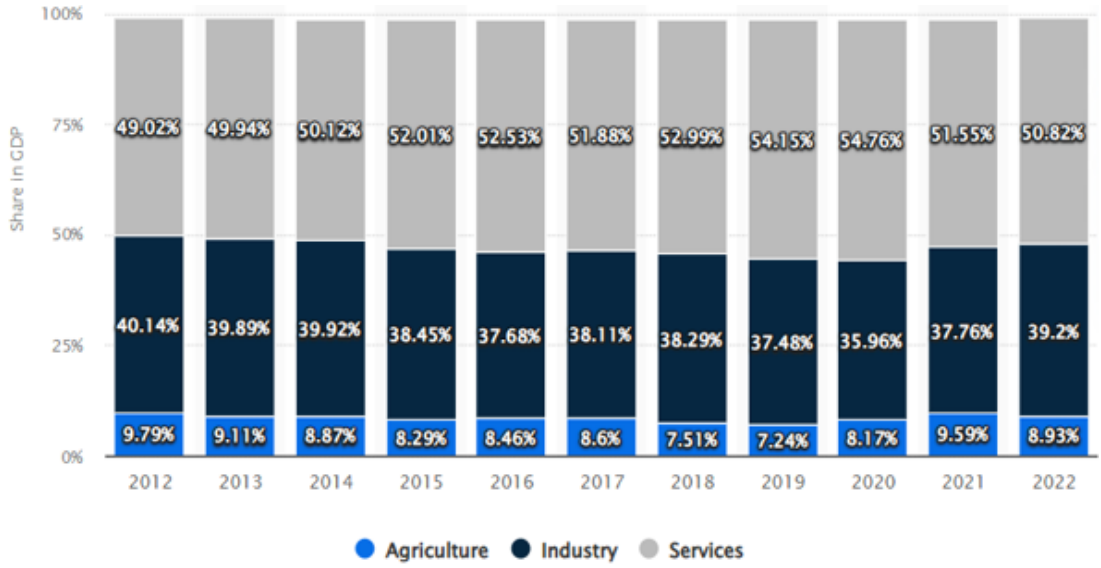

Figure 1.1 Malaysia: Share of economic sectors in the gross domestic product (GDP) from 2012 to 2022

Figure 1.1 highlights the economy statistic of Malaysia (www.statista.com) which reflects the share of economic sectors in the gross domestic product (GDP) in Malaysia from 2012 to 2022. In 2022, the share of industry in Malaysia's gross domestic product was around 39.2 percent (manufacturing sector included) after the services sector which contributed about 50.82 percent.

The recent pandemic has compelled companies around the world to function swiftly with more resilience to address any upcoming unpredictable circumstances. The pandemic short-term effects on enterprises have been observed across industries and countries, with the most severe effects revolving around small and medium-sized companies (Apedo-Amah et al., 2020), which is the backbone of many emerging countries (Grover and Karplus, 2020). Small businesses received the heaviest impact across the board due to their higher revenue declines. Depending on other factors, these businesses were likely to shut down. Compared to medium and large firms, small businesses are less likely to pivot or shift to a remote work arrangement (Grover and Karplus, 2020). As a result, the adjustment of available supply chain processes is

among the most significant elements of managing risks to achieve the organisation's longevity (Verma and Gustafsson, 2020). This element involves the adjustment of the company's pressing concerns, the development of new services or products, and radical adaptation to constant visibility, agility, and productiveness (Chesbrough, 2020; Kim, 2020; Ivanov, 2020).

According to Ivanov and Dolgui (2020), the recent pandemic became a trial for supply chains on their validity (e.g., the capability for resistance), adjustability (e.g., the capability to manage changes), and recovery (e.g., the capability to resume performance and operations after a disturbance). This factor highlights the important part played by resilience in the management of supply chains in the vague world (Peck, 2005; Ponomarov and Holcomb, 2009; Pettit et al., 2010; Brandon-Jones et al., 2014; Madhavi and Wickramarachchi, 2022).

In crisis situations, quick and effective decisions are essential in organisations (Burnard et al. 2018). Particularly in the supply chain, effective decisions on the flow of production, information, inventory, location, transportation, and other resources are critical especially during periods of instability and oscillation (Saridakis et al., 2018). Following the unresolved progress of business conditions, companies are compelled to focus on determining the methods or training the methods of stress management and adjustment to the work environment that evolves at a fast pace after pandemic. Notably, the pandemic has disrupted the supply chain, which traps supply chain managers in a situation that urges them to deal with supply chain risks in an unusual way for the medium and long terms (Knights et al., 2022). These feature the disruption in the long term and its unprecedented scaling, concurrent disruption propagation in the supply chain (e.g., the ripple effect), and epidemic outbreak propagation in the

population (e.g., pandemic propagation), and concurrent disruptions in demand, supply, and logistics infrastructure (Ivanov, 2020).

There were rare cases when workforce management faced more complex and changing conditions in the harsh business climate after pandemic. Manufacturers were required to follow a slew of mandatory safety regulations and guidelines after the pandemic to stay afloat, continuously open their shop floors, or re-establish their facilities after their shutdown (Wuest et al., 2020). The pandemic has also stressed the job market, leading to a challenge for employers to hire and keep talented workers. Nevertheless, new avenues to train or upskill jobless workers from hard-hit service industries are emerging to compensate for the present manpower crisis (Moutray, 2020).

Most of the companies have an ageing industrial workforce. Furthermore, issues are present in the skills gap and employment of the new generation of manufacturing workers (Harris et al., 2020; Moutray, 2020; Wuest et al., 2020). As a result, decision-making in operation has become more challenging due to ambiguity during the post-pandemic. While the present phenomenon indicates the need for decisive actions, companies are significantly restricted. This predicament also has an impact and brings the possibility for a change in the ownership degree. To ensure continuous business operation in the best manner possible, several organisations have formed crisis teams, pulling key leaders from every department to ensure the enforcement of social distancing, compliance to the standard operating procedure (SOP), and adjustment superseding the entrenched organisational practices (Dewick et al., 2021).

According to Gunessee and Subramanian (2020), the risk is a condition in which objective probability may be assigned to outcomes or events. To be more

precise, uncertainty may define the events despite its inability of assigning objective possibilities. However, subjective probabilities could be assigned in some cases. Nevertheless, ambiguity could be described as conditions where the results or likelihood of occurrence are unknown and cannot be precisely coded. In other words, ambiguity refers to the imprecision occurring in a decision maker's judgement, appraisal, or forecast (March, 1994).

In light of the pandemic situation, the decision-maker is also faced with ambiguity due to the absence of coherence and clarity. It has been demonstrated that ambiguity has a different impact on supply chain decisions and corresponds with particular coping mechanisms (Gunessee and Subramanian, 2020). Researchers (Aven, 2014; Gunessee and Subramanian, 2020) recognised that supply chain decision-making under ambiguity is distinct from risk and uncertainty. Meanwhile, a study by Budescu et al. (2002) verified the distinction between ambiguity and risk, which is recommended to be studied exclusively (Gunessee and Subramanian, 2020).

With inadequate data to administer objective probabilities and a subjective probability distribution that could not be distinctively specified, the situation was stated to be ambiguous (Friberg, 2015; Takemura, 2014). Research also demonstrated through the analytical review that information ambiguity and data complexity have an impact on judgement accuracy (Luippold and Kida, 2012). Contradictory or 'unknown' information may lead to challenges in progressing forward. Ambiguity will increase when the information provided is not reliable or contradictory (Aven, 2014).

Many administrative and governmental restrictions must be overcome by the global supply chains. It is unwise to rely on one region or country, particularly in the short run (Dewick et al., 2021). However, the pandemic has demonstrated that when several locations throughout the world experience shutdown, maintaining global

sourcing becomes more challenging (Pettit et al., 2019). As a result, as SC managers delved deeper into their supply chain, they realised that they must confront the importance of understanding the sites and connections, including their dependency and threat. The increased visibility into the supply chain was to detect, foresee, and resolve supply issues at the fastest rate (Dewick et al., 2021).

A supply chain manager is subject to complicated decisions in the prompt use of real-time data and information. In the case of companies involved in deeper upstream supply chains, there is increasing importance in the application of new devices and technology, including artificial intelligence (AI)-enabled information systems and blockchain technologies offering real-time data on suppliers (Dewick et al., 2021). Most supply chain decisions, including demand forecasting, allocation of capacity, schedule deferral, procurement, and contracting are considered decision-making problems under ambiguity. Some key decisions are irrevocable, which affects the organisations' prospects and their supply chain networks (Ishida, 2020). Moreover, effective and swift decision-making is important in the operation of manufacturing and logistics firms covering many countries and continents. Therefore, having the appropriate skills is important to manage these challenges when the supply chain encounters difficulty. Additionally, without appropriate decision-making procedures in place, a minor manufacturing issue could become more severe. For this reason, the role of a supply chain decision-making competence has become more challenging due to ambiguity after the pandemic.

In supply chains, managerial decision-making is crucial. Supply management decision-making was introduced in behavioural supply management in the study by Carter, Kaufmann, and Michel (2007). Following that, decision-making competence emerged in the area of operations through the research by Bousdekis et al. (2015),

which deemed the use of proactive decision-making more suitable in this context. The development of proactive decision-making was further enhanced by researchers as a multi-dimensional concept (Siebert and Kunz, 2015; Siebert et al., 2020a; Siebert et al., 2021). According to Siebert et al. (2020a), proactive decision-making skills improve the effectiveness of decision-making. Individuals would benefit from enhanced life satisfaction, decision satisfaction, and general self-efficacy, highlighting the importance of operations research and decision sciences to people's daily life (Siebert et al., 2020a). While in the manufacturing field, specifically in the supply chain context, proactive decision-making can help enterprises improve their level of preparedness and minimise unexpected maintenance costs by avoiding failures and breakdowns which can affect the Return on Investment (ROI). In other word, proactivity, based on a number of contextual factors, can support better production planning and maintenance of equipment, which contributes to ROI, and return on production (Petersen et al., 2016).

Based on the decision analysis, good decisions arise from efficacious decision-making, specifically the decision-making that conforms to decision quality standards (Spetzler et al., 2016). Researchers from various disciplines had been examining human decision-making behaviour for decades to improve understanding of the related processes and aid people and organisations to make better decisions (Bell, Raiffa, and Tversky, 1988; Milkman, Chugh, and Bazerman, 2009; Siebert and Keeney, 2020). This action involves the evaluation of decision suitability, particularly the normative procedural standard and decision-making efficacy (Howard, 1980, 1988). At the same time, the prominent shortcomings of human judgement are also recognised (Bell et al., 1988). Although the prescriptive method of decision analysis is more realistic, the normative viewpoint of decision theory translates the suitability into (nearly) absolute

decisions made by unbiased people who exhibit rational choice behaviour (Edwards, Miles, and von Winterfeldt, 2007).

According to Siebert et al. (2020b), decision-makers may have the capacity to think openly and identify more important objectives, and have inadequate proper knowledge, skills, or experience in the new decision setting (Siebert et al., 2020b). Study by Nikookar and Yanadori (2022b) has identified that the decision competency of a supply chain manager is critical as the key component of organizational antecedent for the development of supply chain resilience. In other words, improving supply chain resilience in the post-pandemic environment requires revisiting the role of supply chain managers (Nikookar and Yanadori, 2022b). This situation became the focus of this study, which attempts to comprehend the possibilities for improving supply chain managers' decision-making competence in supply chain resilience surrounding. This competence represents the behaviour in operation management. Overall, this study aims to determine the primary elements influencing the decision-making competence in the supply chain resilience surrounding among manufacturing organisations in Malaysia.

1.3 Problem Statement

Unfortunately, the recent disruption in Malaysia had a great impact on the semiconductor chip and circuit board manufacturers. Malaysia is a key player in the semiconductor trade and any disruption that happened would affect the global supply chain (Ben-Meir et al., 2022; Debby Wu et al., 2021; Gupta, 2022; Leslie, 2022). Malaysia was caught in the global chip crisis since it accounts for 13% of worldwide chip testing and packaging, which is a key phase in the production of semiconductors

used in automobiles, smartphones, and other electronic gadgets (Lee and Ngui, 2021: Loo et al., 2023). Moreover, Malaysia is also the leading producers of personal protective equipment (PPE) products specifically surgical gloves (Bown, 2020; Gareffi, 2021). According to the World Health Organization (WHO), production of PPE needed to be increased by forty percent in order to make up for the shortage in the year 2020 (Diaz-Elsayed et al., 2020).

Malaysia enforced a lockdown, known as a movement control order (MCO), from 18 March until 12 May, 2020. Non-essential operations and cross-border traveling were stopped during the MCO period which disrupted many manufacturing operations. Specifically in the Electrical & Electronic (E&E) industry in Malaysia, the disruptions has affected the supplier factory shutdowns and disrupted transportation, labor shortages, long lead time of components, material shortages and delivery failures which puts the SC management at the forefront to mitigate the supply chain disruptions (Loo et al., 2023). In a nutshell, the supply chain management team went through a roller coaster ride since the pandemic overcoming the unprecedented challenges. With all the sudden changes, how do these supply chain decision-makers learn how to cope or deal with the new challenges, changing environments and new software tools in the supply chain resilience environment specifically in the manufacturing sector?

Moreover, the unpredictable disruptions in the global supply chain as the result of the recent pandemic have forced the supply chain managers in the manufacturing sector to adjust their objectives and align them with local policy makers' governmental strategies and objectives. However, there exists a challenge related to the competency of decision makers in the supply chain in navigating the uncertainty inherent in the entire supply chain management. The lack of sufficient supply chain decision-making has caused the loss of customers, fines imposed for the delay in delivery, and legal

proceedings for breach of contract to supply (Msmeadmin, 2021). This disruption could lead to the shutdown of many businesses and significant job losses, which could hit one million and trigger a higher unemployment rate compared to the 5.3% unemployment rate registered in May 2020 (Msmeadmin, 2021). In the long run, employee retention and skill development would be crucial even if temporary layoffs may be necessary for the short term to achieve a flexible workforce during the crisis (Zhong et al., 2021). Hence, the majority of organisations are currently facing challenges in finding competent managers at all management levels. Moreover, there is a shortage of Supply Chain management talent and leadership globally (Merkert et al., 2023).

In 2021, the Malaysian Investment Development Authority (MIDA) recorded RM29.3 billion as the total investment in the electronic and electrical (E&E) industry, representing 95% increase from RM 15 billion in 2020. The flourishing E&E industry created 27,072 employment, accounting for 48% of all manufacturing job prospects in Malaysia (Malaysian Investment Development Authority, 2022; 2023). This significant shift in the Malaysian labour market within a year placed top management in any organisation in a highly challenging position to offset the drastic impact of these changes.

1.3.1 Ambidextrous Knowledge Capabilities

In supply chain resilience surroundings, decision-makers have a high reliance on the knowledge. To illustrate, managers who are more knowledgeable in the management of internal and external resources are more prepared to face disruptions (Pereira and Da Silva, 2015). Unfortunately, lack of knowledge in adapting to sudden disruptions in industrial supply chains has drawn more attention in organisation

learning from companies operating under conditions of uncertainty and constant disruption (Frankowska et al., 2023).

On the other hand, in the SCM literature, some researchers demonstrated that skills and abilities should be emphasised rather than knowledge or experience when various competency items are studied (e.g., Gammelgaard and Larson, 2001; Derwik et al., 2016). This emphasis demonstrates that in the supply chain management context, expertise and capabilities are more valued over fact-based knowledge (Flöthmann et al., 2018), which rises a debate between these two factors versus knowledge of supply chain management. Nevertheless, the literature affirms that acquiring expertise and capabilities is more challenging than acquiring fact-based knowledge (Nass, 1994).

In order to achieve alignment and adaptability to the ongoing knowledge adaptation, ambidextrous knowledge capabilities has been identified as the key factor to foster the agile supply chain network (Ogulin et al., 2020). However, immediate implementation of the most common supply chain resilience approaches in this pandemic, including subcontracting capacity, risk mitigation inventories, or backup supply and transportation infrastructures could be challenging (Ivanov and Dolgui, 2020; Madhavi and Wickramarachchi, 2022). Thus, the significance of supply chain management measures to address the organisations' supply chain obstacles is important (Van Hoek, 2020a, 2020b).

1.3.2 SCM Skills

Inadequate supply chain management skills, abilities, competencies, and expertise are able to impede and cease the business (Heilmann et al., 2011). After the pandemic, the supply chain manager's function has expanded (Van Hoek, 2020a; Wojtczuk-Turek et al., 2022). In fact, the role of supply chain manager is highly

demanding due to its constant change and the need to adapt and upgrade their competencies to address new problems (Derwik and Hellström, 2017, 2021; Karttunen, 2018; McNamara et al., 2003). The supply chain managers are also expected to play a crucial role in being proactive with new tactics and re-planning on numerous occasions to decrease the effect of the crisis. Furthermore, the supply chain decision-maker frequently experiences uncertainty throughout the decision-making procedure as a result of various attributes, including time constraints, inadequate knowledge, lack of attention, and insufficient information to improve the complexity and conflicts of subjective judgement (Xu, 2006: Wu et al., 2016). They also need to shoulder the burden of anticipating the need for cutting-edge technologies, organisational agility, and supply chain resilience to achieve positive growth for progress (Verma and Gustafsson, 2020). However, some of these areas could be new to the managers as they continue to navigate through this uncharted water. The ability of the top management to lead the organisation is a critical component in every corporation's survival.

This pandemic impact has led to digitalisation and automation, where decision-makers are required to face technological adaptivity and agile learning. Blockchain technology, big data analytics, machine learning and the Internet of things (IoT) are among the emerging digital skills in the supply chain context to be acquired by supply chain managers (Mageto and Luke, 2020; Koot et al., 2021) as organization move into supply chain 4.0 . This disruption has created a new need for a long term contactless talent acquisition process in the organization's operating systems (Wahab et al., 2024). To be specific, competent managerial and leadership tools and education programmes that could adequately develop capabilities are needed to master this digitisation trend (Centobelli et al., 2020). Hence, individuals should develop coping capacity through

career agility in today's technological-driven digital era to stay ahead in the competition (Andersen, 2020; Coetzee, 2021: Coetzee et al., 2020; Coetzee et al., 2021). Privacy violations are on the rise in an increasingly digital workplace, drawing the attention of the government and public service bodies (Charbonneau and Doberstein, 2020).

1.3.3 Coping Capacity

One of the most noticeable effects of the pandemic is the trend of many workers working from home arrangements across occupations. The portfolio of flexible global working arrangements could bring significant albeit unacknowledged benefits to the multinational corporation. However, it may also have unintended negative consequences for the people (Zhong et al., 2021). For the first time, many managers are currently leading remote teams. Meanwhile, some managers need to accommodate the management of a hybrid team where some employees are working at the office while others are working at home. Given that some management styles are not practical, this situation could be complicated for managers as it raises management challenges for employers to ensure the productivity of their employees (Javadinasr et al., 2021). Thus, working from home could be challenging for individuals, leading to employees being forced to adapt to change and the new working environment at home. As a result, their mental health is indirectly affected (Felstead and Reuschke, 2020).

Many SME suppliers in Malaysia, except essential products, were not allowed to operate during MCO. Hence, the supply chain professionals trained and helped the SME suppliers with social distancing in factories and warehouses. They also assisted SME suppliers in getting permits to run at 50% of capacity and also getting shipping

permits (Loo et al., 2023). The supply chain managers have been putting great effort behind the scenes to manage their additional stress and expanded their job scope. Moreover, supply chain managers are currently operating in a more complex, dynamic, unpredictable, and competitive environment. For this reason, it is expected that the managers' behaviour becomes an important aspect of manufacturing firms, especially for workforce management, which is vulnerable to high occupational overload (Wojtczuk-Turek et al., 2022). Hence, there is a need to focus on the behaviour operations to acquire thorough comprehension of the supply chain managers' decision-making and apply the understanding to develop interventions that would enhance supply chain operations in the supply chain resilience surrounding (Nikookar and Yanadori, 2022b).

1.3.4 Emotional Intelligence

To adapt to organisational change, emotional intelligence has been recognised as a key element in driving positive behaviour in the supply chain context (Bak et al., 2019; Keller et al., 2020; Van Hoek et al., 2020a). This notion indicates that emotionally and socially intelligent individuals are capable of understanding and expressing themselves, relating to others easily, and successfully managing the challenges of everyday work (Bar-on, 2006).

According to Keller et al. (2020), managers with higher degrees of emotional intelligence have a higher capability of supporting their subordinates in managing their emotions, building more positive working surroundings for subordinates, boosting employee retention, and generating more positive service outcomes for external clients. Thus, they are capable of assisting employees during demanding and tough times and making major changes to enhance the supply chain resilience environment.

1.3.5 Decision-making

According to Siebert et al. (2020b), before, during, and after a crisis or pandemic, describing and positioning the goals within an organisation across the supply chain and with the socio-political business environment is critical for corporate achievement. Even though a clear set of goals is a crucial requirement for good decision-making, most decision-makers are unaware of the importance of corporate goals. Following the shift in the nature of competition from single firms to supply chains, corporate goals should be consistent throughout the whole supply chain (Christopher, 2005).

However, based on Grover and Karplus (2020), management operations are associated with the negative impacts of the crisis on revenues and the survival of manufacturers. Thus, the firms' decisions may result in increased revenue and firms' survival (Grover and Karplus, 2020). It could be seen from this situation that the managers' or decision-makers' understanding, expertise, capabilities, and competence are responsible for making changes for the continuity and sustainability of the supply chain in any organisation. This factor is in line with one of the emerging themes on the behavioural sustainable supply chain path (Fahimnia et al., 2019; Prajogo and Sohal, 2013).

Many businesses focus solely on the basic objectives of minimising costs, maximising quality, minimising delivery time, and maximising resilience. This behaviour is motivated by two factors: 1) managers normally make reactive decisions (Siebert and Kunz, 2016), leading to their familiarity with assessing the goals previously examined in identical decision scenarios (Keeney, 1992) and 2) numerous decision-makers manage the issues actively and effectively while being separated from other decisions. This action is contrary to strategic decision-making from the top down

and a proactive method of taking other decisions into account (Siebert and Kunz, 2016).

During abrupt shifts or crises including the pandemic outbreak, decision-makers may have the willingness to openly think and determine valid objectives. However, they often have inadequate understanding, expertise, or experience in the new decision context (Siebert et al., 2020b). Accordingly, this study was conducted to improve the understanding of the avenues for strengthening the decision-making competence of supply chain managers in supply chain resilience surrounding. While numerous studies had been conducted in the domain of decision-making competence (Bousdekis et al. 2015; Siebert and Kunz, 2015; Siebert et al., 2020a; Siebert et al., 2021), based on the systematic literature review in Table 2.1, limited research linked the knowledge, skill, and attributes (KSA) model to decision-making competence specifically in understanding decision-makers' method of facing the supply chain resilience surrounding. Thus, studying the decision-making competence among Malaysian supply chain managers is important to guide practitioners and scholars towards understanding how to de-risk the supply chain outside the regular risk response and proactively reducing the harms for future supply chain sustainability in manufacturing firms. This research aims to assess the impact of ambidextrous knowledge capabilities and SCM skills on decision-making competence in the supply chain resilience surrounding of manufacturing organisations in Malaysia. In this case, coping capacity was employed as the mediator and emotional intelligence was applied as the moderator.

1.4 Research Questions

This study attempts to solve the following questions:

1. Does ambidextrous knowledge capabilities relate to coping capacity in supply chain resilience surrounding?
2. Does Supply Chain Management skills relate to coping capacity in supply chain resilience surrounding?
3. Does coping capacity relates to decision-making competence in supply chain resilience surrounding?
4. Does coping capacity mediate the relationship between ambidextrous knowledge capabilities and decision-making competence in supply chain resilience surrounding?
5. Does coping capacity mediate the relationship between Supply Chain Management skills with decision-making competence in supply chain resilience surrounding?
6. Does emotional intelligence moderate the relationship between coping capacity and decision-making competence in supply chain resilience surrounding?

1.5 Research Objectives

This research aims to determine the key competencies influencing decision-making competence in supply chain resilience surrounding in Malaysian manufacturing companies. This condition creates a better insight into the primary elements that lead to decision-making competence in supply chain resilience surrounding. This research was performed to accomplish the objectives below:

1) To examine whether the ambidextrous knowledge capabilities influence coping capacity in the supply chain resilience surrounding.

2) To examine whether the Supply Chain Management skills influence coping capacity in the supply chain resilience surrounding**.**
3) To examine whether coping capacity influence decision-making competence in supply chain resilience surrounding.
4) To examine whether coping capacity mediates the relationship between ambidextrous knowledge capabilities with decision-making competence in supply chain resilience surrounding.
5) To examine whether coping capacity mediates the relationship between Supply Chain Management skills with decision-making competence in supply chain resilience surrounding.
6) To examine whether emotional intelligence moderates the relationship between coping capacity and decision-making competence in supply chain resilience surrounding.

1.6 Research Scope

This study aims to examine the impact of ambidextrous knowledge capabilities and SCM skills on decision-making competence in the Malaysian manufacturing companies. In addition, the mediating role of coping capacity and the moderation influence of emotional intelligence (EI) was investigated. The target population covered the supply chain managers working in the manufacturing companies for a minimum of two years and above. Focus was placed in the Malaysian industrial states (Penang, Kedah, Perak, Selangor, Negeri Sembilan, Melaka and Johor). The unit of analysis comprised of the individual supply chain managers. The data was gathered during the period of February 8, 2022 to April 8, 2022. This study is conducted to assist in predicting the behavioural patterns of supply chain managers under the scope

of behavioral operation management (BOM). The research design of this study scope are discussed in more detail in Chapter 3.

1.7 Research Significance

This research aims to embrace the behavioural tendencies of supply chain professionals, particularly during the post-pandemic recovery stage. The post-pandemic period was focused on. To illustrate, after the lockdown and restrictions were imposed to control the spread of pandemic, governments and businesses were struggling to respond effectively to pandemic disruption and the vulnerability of the global supply chain in this turbulent climate (Shi et al., 2021). Notably, this research has made a notable theoretical and practical contribution to the field of decision-making domain among supply chain managers in the supply chain resilience surrounding.

1.7.1 Theoretical Contributions

This research illustrated how behavioural decisional theory (BDT) synergises with the competency model in supporting behavioural decision-making in supply chain resilience surrounding. As a result, the combination of these two conceptual premises strengthens the behavioural operation management (BOM) literature while broadening the understanding of the interaction between behavioural decisions and competency mechanisms to improve human decisions. This improvement would provide a cohesive body of knowledge to make stronger prediction and human decisions in the scope of supply chains.

This research increased the theoretical knowledge of decision-making behaviour through the development and empirical test on a more holistic model that

explains the method of fostering decision-making behaviour in the supply chain resilience surrounding. Therefore, this research fulfilled the request made by several researchers (e.g., Donohue et al., 2020; Fahimnia et al., 2019; Katsikopoulos and Gigerenzer, 2013; Kunc and Katsikopoulos, 2022) for a more thorough identification of the causes and implications of decision behaviour in the supply chain context within a particular industry. Furthermore, the study model was theoretically obtained from a synthesis of the BDT and KSA models. Based on the empirical test on the conceptual model, the research findings would provide the understanding of gaining proactivity in decision-making through the synthesised impact of BDT and KSA and the efficacious method through emotional intelligence. Having a complete understanding of supply chain decision-making in operations may assist in de-risking the supply chain outside the conventional risk response into the proactive decrease in risks for supply chain sustainability in the future.

This study made contributions to the employment of the BDT theory by analysing the effects of KSA (ambidextrous knowledge capacities, supply chain management skills, coping capabilities, and emotional intelligence) on decision-making competence among supply chain managers in one holistic research model. According to Donohue et al. (2020), expansion is important in the decision and behavioural domains in terms of the supply chain. In this study, ambidextrous knowledge capabilities, supply chain management skills, and coping capacity were employed as a contribution to the body of knowledge in the competency model. Besides the competency model, the BDT theory (Takemura, 2014) was also applied to the research model. A theoretical contribution was made by incorporating the two concepts within the research model. This framework is able to offer the decision-makers a new understanding of an integrative framework of several main predictors of

decision-making competence in supply chain resilience surrounding. According to Yamini (2021), the ability to predict behavioural patterns can assist in understanding the cognitive psychology of decision-makers.

1.7.2 Practical Contributions

In addition to the theoretical implications, this research also aims to offer useful practical implications to supply chain managers who attempt to be proactive in reducing risks for the long term of supply chain sustainability. The study findings offered practical guidelines for supply chain managers on the effective ways of achieving decision-making competence in supply chain resilience surrounding. This action is fulfilled through the KSA of ambidextrous knowledge capabilities, supply chain management skills and coping capacity attributes. These three variables were expected to complement one another and form the foundation of a successful decision-making competence in the supply chain resilience surrounding.

This research also provides practitioners with knowledge on emotional intelligence that could improve the effectiveness of decision-making competence among supply chain managers. It is believed that it could benefit the decision-making processes in academia and industry to address the factors that require further training or skill upgrading. Thus, enabling supply chain managers to be fully equipped and improved with the appropriate skillset could be effective in achieving decision-making competence, particularly in the post-pandemic era.

1.8 Definition of Key Terms

Following are the descriptions of the primary terms employed in the research: