THE ROLE OF DIGITAL FINANCIAL SERVICES (DFS) CONSUMER PROTECTION IN THE RELATIONSHIP BETWEEN DIGITAL FINANCIAL LITERACY, FINANCIAL SOPHISTICATION, RISK GOVERNANCE AND INTERNAL CONTROLS AND FINANCIAL SUSTAINABILITY AMONG MANUFACTURING SMEs IN MALAYSIA

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by

LIEW HONG JIN

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LIST OF ABBREVIATIONS

DFS	Digital Financial Services
DFL	Digital Financial Literacy
RGIC	Risk Governance and Internal Controls
SME	Small and Medium Enterprise
KBV	Knowledge Based View
AVE	Average Variance Extracted
VIF	Variance Inflation Factor
HTMT	Heterotrait-monotrait ratio

LIST OF APPENDICES

PERANAN PERLINDUNGAN PELANGGAN PERKHIDMATAN KEWANGAN DIGITAL DALAM HUBUNGAN ANTARA LITERASI KEWANGAN DIGITAL, KECANGGIHAN KEWANGAN, TADBIR URUS DAN KAWALAN DALAMAN SERTA KELESTARIAN KEWANGAN DALAM KALANGAN PKS PERKILANGAN DI MALAYSIA

ABSTRAK

Revolusi Teknologi Maklumat (TM) telah memberi pengaruh dan menukar segala aspek kehidupan manusia. Industri perkhidmatan kewangan di Malaysia telah memandu arah revolusi digital melalui pembekalan Perkhidmatan Kewangan Digital (PKD) dan telah menghasilkan keuntungan berkat kelestarian, penjimatan kos dan pencapaian secara lebih luas. Namun, PKD terdedah kepada serangan secara siber dan kegagalan sistem yang akan membahayakan kesinambungan perniagaan dan kestabilan kewangan. Oleh itu, suatu perlindungan PKD Digital adalah amat penting untuk memastikan kesinambungan perniagaan. Objektif yang paling penting dalam kajian ini adalah untuk menghasilkan suatu instrumen yang sah dan mantap untuk memantau persepsi Perniagaan Kecil dan Sederhana terhadap aplikasi dan keberkesanan perlindungan PKD dari segi literasi kewangan. Objektif kajian ini adalah mengaji faktor yang mempengaruhi Kelestarian Kewangan. Lantaran itu, kaedah kuantitatif akan dilaksanakan untuk meninjau hubungan antara Literasi Kewangan Digital, Kecanggihan Kewangan dan Kelestarian Kewangan dalam pengaruh terhadap Perlindungan PKD. Soal selidik secara maya telah diedarkan kepada pemilik Perniagaan Kecil dan Sederhana (PKS) dalam kategori pembuatan dan sejumlah 115 maklumbalas telah diterima. Data dianalisa melalui SPSS dan dalam analisa awal dan model kajian telah dianalisa melalui Kuasa Dua Terkecil Separa (MPB-KTS).

Responden merupakan CFO/pemilik PKS/ Pengurus. Sampel pembuatan PKS akan dipilih melalui Federation of Malaysian Manufactures (FMM) Directory. Keputusan kajian menunjukkan terdapat hubungan positif antara Literasi Kewangan Digital dan Kelestarian Kewangan. Selain itu, terdapat hubungan positif antara Kecanggihan Kewangan dari segi PKS dalam kategori pembuatan. Namun demikian, tidak wujud hubungan antara Tadbir Urus dan Kawalan Dalaman dengan Kelestarian Kewangan dari segi PKS dalam kategori pembuatan. Seperkara lagi, tidak dijangka bahawa Perkhidmatan Kewangan Digital Perlindungan Konsumer tidak mengawal hubungan antara Literasi Digital Kewangan dengan Kelestarian Kewangan. Di samping itu, Perkhidmatan Kewangan Digital Perlindungan Konsumer tidak mengawal hubungan antara Kecanggihan Kewangan dengan Kelestarian Kewangan. Hasil kajian ini akan membantu agensi Kerajaan dan sektor perkhidmatan kewangan untuk memperkenalkan dasar untuk Perkhidmatan Kewangan Digital Perlindungan Konsumer dan mengenalpasti latihan untuk PKS di Malaysia.

THE ROLE OF DIGITAL FINANCIAL SERVICES (DFS) CONSUMER PROTECTION IN THE RELATIONSHIP BETWEEN DIGITAL FINANCIAL LITERACY, FINANCIAL SOPHISTICATION, RISK GOVERNANCE AND INTERNAL CONTROLS AND FINANCIAL SUSTAINABILITY AMONG MANUFACTURING SMES IN MALAYSIA

ABSTRACT

The revolution of information technology (IT) has impacted and changed every aspect of human being's lives. The financial services industry in Malaysia has been navigating the digital revolution through the offering of digital financial services (DFS) and generating profits through efficiency, cost savings and wider reach. However, DFS are vulnerable to cyber-attacks and system failure which may compromise business continuity and financial stability. Therefore, a comprehensive DFS protection is very important in ensuring business sustainability. The primary objective of this research is to develop a valid and sound instrument to assess SMEs perception towards the application and effectiveness of digital financial services (DFS) protection from the perspective of financial literacy. The objective of the study will be exploring the factorsthat influence financial sustainability. Therefore, a quantitative method will be employed to investigate the relationship between digital financial literacy, financial sophistication and financial sustainability in the influence of DFS protection. The online self-administered questionnaires survey was distributed to the owners of the manufacturing SMEs and a total of 115 responses were received. The data was analysed by SPSS for preliminary analysis while the research model was analysed using Partial Least Squares (PLS). The respondents are CFO/SME owners/Managers. The samples will be chosen from the Federation of Malaysian

Manufactures (FMM) Directory listed manufacturing SMEs. The study findings show there is a positive relationship between Digital Financial Literacy and Financial Sustainability. Furthermore, there is a positive relationship between Financial Sophistication and Financial Sustainability in the context of Malaysian Manufacturing SMEs. However, there is no significant relationship between Risk Governance and Internal Controls with Financial Sustainability in the context of Malaysian Manufacturing SMEs. Furthermore, surprisingly, DFS Consumer Protection does not moderate the relationship between Digital Financial Literacy and Financial Sustainability. DFS Consumer Protection also does not moderate the relationship between Financial Sophistication, and Financial Sustainability. The outcomes of this study would help the government agencies and financial services industry to formulate policy for DFS consumer protection and identifying trainings for SMEs in Malaysia.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The revolution of information technology (IT) has impacted and caused changes to every aspect of human being's lives. IT drives businesses and therefore can be utilised to strengthen and reinforce the businesses' competitive edge (Porter & Millar, 1985). The business and financial technology or "fintech" emergence compounded by the effect Covid-19 pandemic experience of late, has stimulated the quick expansion of "digital" financial services and products (DFS) that are accessed via digital channels (Lyons & Kass-Hanna, 2021). Digital Financial Services are the myriad types of financial services and its delivery are done via digital channels which includes the aspects of payments, credit, savings, remittances, insurance, and information regarding finance (Alliance for Financial Inclusion, 2016).

With the arrival of the 4.0 Industrial Revolution and the digital era, the lives of people in both ways-individually and in an organization are impacted. In the financial sector especially, the digital era can establish information technology to help the public in accessing financial services and products. With innovations in the arena of IT, society can grab chances and opportunities in undergoing financial activities with assured ease, safety and control. This is especially so for Small and Medium Enterprises (Hendiarto, 2020).

Entering the digital era, the Digital Finance's goal is reached through digital platforms. It helps in satisfying the financial inclusion objectives and expansion of financial services for businesses. Whilst there is a lack of standardised digital finance's definition, it has been generally agreed that digital finance revolves all services, products, technology and/or facilities that empower persons, organisations, establishments and companies to gain accessibility to facilities of credit, payments and savings attributed to the readily available avenue of the internet (online) and there would be no need to make a physical visit a bank branch in-person or perform dealings with the financial service provider physically (Ozili, 2018). As a matter of fact, 72% of consumers in Malaysia strongly show liking towards the Small Medium-sized Enterprises (SMEs) in adopting the system of digital payment, followed by Singapore (68%) and the Philippines (68%) (Kaspersky, 2021), which in other words, consumers prefer SMEs that use digital payments.

However, the technological rate of adoption in the country of Malaysia is around 20%, notably among SMEs. The majority of Manufacturing SMEs in Malaysia adopted less than 50% of the automation process despite the implementations by the government of Malaysia (Wong & Kee, 2022). Also, only 30% of Malaysian Manufacturing SMEs have just commenced the adoption of Industrial 3.0, which covers the aspect of the adoption of advanced technology (Shahzad, Mohd Syarol Azuan, Kotzab, Makki, Hussain & Fischer 2023). Hence, there is a gap of digital adoption in the manufacturing segment with the service sector being marginally higher if using the Business Digitalisation Adoption Index (BDAI) where Manufacturing sector scored 2.26 out of 5 and Services scored 2.9 out of 5 (Malaysia Digital Economy Corporation, 2022).

Conducting business in the era of digital economy and with the availability of DFS can become threat or opportunity to SMEs. More complexservices being offered which require greater knowledge and understanding among SMEs than the existing Financial Literacy level compared to Digital Financial Literacy (DFL). This is especially so when the phenomenon of rapid technological change forces business communities to enhance their knowledge and skill so as to make themselves familiar with the new way the business transactions are executed. It must be noted that in spite the fact that SMEs are adopting the trend of digital transaction and entrusting Fintech tools that create speed in their monetary dealings, the awareness of the hazard of cyber threats in their businesses is starting to pick up momentum. The cost and incurrence of expenses of breaching of SMEs' data spiked by 54% in 2021. However, with identifying such occurrences and breaches early, the average losses decrease by 17% (Kaspersky, 2021).

Digital finance has a prominent outcome on firm's innovation performance for Chinese companies which are particularly listed on the SME and GEM boards from the years 2011 to 2018. This gives us the knowledge that digital finance is significantly vital to SMEs (Jiang, Ma & Zhu, 2022). Nevertheless, in this paper, the dependent variable would be Financial Sustainability to be specific as below in Malaysian manufacturing SMEs' context. In this research, the surveys are based to measure Malaysian manufacturing SMEs. SMEs are chosen as the study of this paper because of its significance. They comprise majority of establishments and enterprises globally, giving provision ofemployment and contribution to national income. Furthermore, they perform a pivotal role in generating an economic growth which is inclusive and sustainable and an improved area of financial stability given suitable circumstances and on-time support. They are considered as the backbone of the industrial development of the nation (Chuah & Ramayah, 2021; Najib, Ermwati, Fhama, Endri & Suhartanto, 2021).

Furthermore, in this study, its purpose is inclusive of adding contribution to the gap on the role of Risk Governance and Internal Controls under the umbrella of Corporate Governance, as one of the independent variables, and whether does it correlate or has an effect on Financial Sustainability.

Risk Governance and Internal Controls is a dimension of Corporate Governance Corporate Governance is related with the practices, systems, processes and procedures that gives governance to institutions. Basically, governance addresses the role of leadership in the institutional framework (Kosgei, Abdi & Bitok, 2014). This research will examine the specific role of Risk Governance and Internal Control being an umbrella under the spectrum of Corporate Governance, in the Relationship between DFS and Financial Sustainability which aims to address these gaps but geared towards a broader scope of performance, which is Financial Sustainability.

1.2 Background of the Study

1.2.1 Small Medium-sized Enterprises (SMEs) in Malaysia

The National SME Development Council (2019) defines SMEs based on two requirements, which are the quantity of employees under full-time basis and yearly sales turnover. Manufacturing SMEs, a more specific category under SMEs, are businesses which Sales Turnover are not exceeding RM50 mil or businesses having full-time employees not exceeding 200 workers (whichever lower) (SME Association of Malaysia, 2024). As for services and other sectors, the definition of SMEs are establishments with sales turnover below RM20 mil or the quantity of full-time employees below 75 (Basar, Zain, Tamsir, Rahman, Ibrahim & Poniran, 2022). The new definition was simplified as per Table 1.1.

Table 1.1 Definition of SMEs in Malaysia by size of operation

<table>
<tr><td>Category</td><td colspan="2">Micro-enterprises</td><td colspan="2">Small</td><td colspan="2">Medium</td></tr>
<tr><td>Criteria</td><td>Sales Turnover</td><td>Full-time Employees</td><td>Sales Turnover</td><td>Full-time Employees</td><td>Sales Turnover</td><td>Full-time Employees</td></tr>
<tr><td>Manufacturing</td><td rowspan="2"><RM300,000</td><td rowspan="2">< 5</td><td>RM300,000 to <RM15mil</td><td>5 to < 75</td><td>RM15 mil to ≤RM50 mil</td><td>75 to ≤ 200</td></tr>
<tr><td>Services and Other Sectors</td><td>RM300,000 to <RM3mil</td><td>5 to < 30</td><td>RM3 mil to ≤RM20mil</td><td>30 to ≤ 75</td></tr>
</table>

Source: (SME Association of Malaysia, 2024)

Various studies show that SMEs constitute a huge part of the private sector in both developed countries as well as developing countries. This gives a contribution prominently to growth in terms of economy and poverty elimination primarily in developing nations, at the same time creating over 60% of the total jobs that solve partly the lack of employment and income inequality in developing countries (Ayyagari, Demirgüç-Kunt & Maksimovic, 2006; Okello & Ntayi, 2020; Beck, Demirguc-Kunt & Ross, 2005). In the context of Malaysia, SMEs contribute 38.2% to the Gross Domestic Product (GDP) of the country, contributed 48% of employment overall alongside the fact that it contributed 13.53% of exports in total (Islam, Wahab & Tehseen 2024). Manufacturing SMEs are crucial to Malaysia because it constitute 97.14% (47,698 companies) out of the whole manufacturing in the nation of Malaysia (Hina, Khalique, Shaari, Mansor, Kashmeeri, Yaacob, 2024; Nor-Aishah, Ahmad & Thurasamy 2020).

On a global scale, the manufacturing industry is undergoing an evolution from a labor-intensive to an automated and digitalised landscape, conforming to Industry 4.0. Such trend towards automation in manufacturing technologies such as cyber-physical systems, Internet of Things (IoT) and cloud computing enables Manufacturing SMEs to have a faster response to the changes in the marketplace and easier to replan production. This is the first reason why Manufacturing SMEs have a higher need for digital adoption compared to its counterpart like the Service SMEs, also due ot the fact that the Service sector in Malaysia accounts only 20% of interregional trade. Hence , the priority is on Manufacturing SMEs in Malaysia's context (Wong & Kee, 2022).

1.2.2 Digital Financial Services (DFS)

DFS as mentioned can be explained as financial services which are delivered and accessed via digital channels. This is inclusive of services where users can pay, remit funds and engage in credit facilities. These services are based on established mediums like debit and credit cards offered mainly through banking institutions and also new solutions built based on the concept of cloud computing, digital platforms, distributed ledger technologies (DLT) amongst many (Agur , Peria & Rochon, 2020).

Financial markets have seen a deepening of DFS, with the industry transitioning beyond the basic cash-in and cash-out (CICO) services to an extended range of services from electronic money and transaction accounts to credit, savings investment, insurance, cross border remittances ,services that foster consumer's comparison and the management of financial products amongst others (Alliance for Financial Inclusion, 2020).

It is also worth mentioning that with the advent of the Covid-19 outbreak, authorities from the government and practitioners of health advocate the use of cashless, contactless forms of payments and other forms of digital financial services to lessen to the most extent the danger of transmission through currency handling (Tay, Tai & Tan, 2022).DFS can be utilised to harness the response attributed to the Covid-19 impact and shock and this crisis of the Covid-19 outbreak has the ability to boost the Digital finance services development and use (Agur et al., 2020).

It is no doubt that DFS can decrease costs, enhance speed, transparency, security, and availability. However, DFS are vulnerable to cyber-attacks and system failure which may compromise business continuity and financial stability. As consumers increasingly transact on digital platforms, cyber-security, will continue to be a key focus. Likewise, customers' awareness that their data has a tendency to be vulnerable to cyber-attacks could made them lose trustability in the digital channels to engage in their transactions. Based on the report by Kaspersky Security Networks, Malaysia has risen to the ranking of 30th internationally for web threats. Kaspersky had detected and blocked 27.9 million web threats in the country. To illustrate using a statistical figure, in the year 2023, Kasperksy had recorded daily attacks numbered at 74,000 (Malaysian Re, 2025). 84% of Malaysian SMEs have been compromised by cyber threat incidents and 76% suffered more than once of being a cybersecurity victim (The Sun Daily, 2024). SMEs in developing countries such as Malaysia find it difficult when experiencing a cyber-attack and the recovery process is a challenge (Mutalib, Zaionl and Halip, 2021; Rawindaran, Jayal & Prakash, 2021). This is akin to a double-edged sword if DFS digital adoption is not sufficiently implemented.

The transition phase of the economy towards a digital one and the increasing digital transactions globally establishes the aspects of Digital Finance as one the four policy pillars to enhance the SME businesses. This leads SMEs toward reduced costs and competitiveness (Thathsarani & Wei, 2022). Also, information security breach and cybersecurity incidents have significant impact as firms create costs regardless tangible or not and that decreases a breached firm's financial performance. Consequently, business organizations can suffer the enormous financial losses (Ko & Dorantes, 2006). Thus, it is crucial to assess the drawbacks of digitalisation so that relevant measures (including Corporate Governance matters as per this study) can be implemented effectively and efficiently to increase the potential of DFS, particularly in achieving Financial Sustainability.

Specific examples of common DFS used by Malaysian SMEs especially Malaysian Manufacturing SMEs include e-commerce and social media engagement which increased its productivity. Social media leverage increased productivity by 26% and e-commerce engagement increased SMEs' productivity by 27% based on a whitepaper published entitled: 'Accelerating Malaysian Digital SMEs: Escaping the Computerization Trap' following a Memorandum of Understanding (MoU) between SME Corp Malaysia and Huawei Technologies (M) Sdn Bhd (Orissa International, 2019). In accordance with the urgency for undergoing digitalisation, the Malaysian government has introduced many projects centered on Digitalisation for SMEs like the PENJANA Smart Automation Grant and the SME Digitalization Grant (Abu Jaish, Murdipi, Abdul Razak & Mohd, 2023).

1.2.3 Digital Financial Literacy (DFL)

Many published works emphasise on Digital Financial Literacy (DFL) but this term has no exact definition. It nevertheless can be interpreted as the adequate level of awareness of digital financial risks, improved usage of the digital financial products' knowledge as well as risk control (Azeez & Akhtar, 2021). DFL is a set of a variety of elements of Financial Literacy and Digital Literacy and will be explained further in Chapter 2 of this study.

Financial technology (Fintech), which includes the aspects of software utilisation, programmes and digital avenues to present financial services to businesses and consumers via digital services like smartphones, has gained recognition as a well-promised tool to foster financial inclusion. Financial inclusion can be explained as the excluded households' accessibility and firms of smaller size's accessibility to financial services and products. In the year 2010, the G20 made an endorsement of the Financial Inclusion Action Plan (FIAP) and formed the Global Partnership for Financial Inclusion (GPFI) for the purpose of coordinating and implementing this aspect. However, to have an improved accessibility to financial services through fintech, it is necessary to have a certain level of DFL that is higher to achieve its effective usage and to prevent mis-selling, frauds including phishing, attacks through hacking, unauthorised data usage, treatment with discrimination and behavioural issues like borrowing excessively (Huang, Morgan & Trinh, 2019).

Given the prominence and importance of FinTech, SMEs require to commence its digital transactions adoption as part of their operations should they desire to win over the customers and consumers of this age and secure a portion of the chart of digital economy.

A majority number of traders show inadequate awareness with regards to DFL and this poses a challenge for these parties to transition to digital economy in spite of the fact that the pandemic has hasten the economic transition towards in the path of digitalisation (Othman et al., 2021). Additionally, financial innovation can stimulate some instable phenomenon with regards to a higher incurrence of financial digital risk and impulsiveness. As such, SME's business owners and entrepreneurs must have literacy in terms of both digital and finance (or DFL) so that they can effectively utilise the products of financial technology and to prevent bad decision-making (Basar et al., 2022).

In relation to the National Strategy for Financial Literacy, building and safeguarding wealth has been indicated as another strategic priority in the Malaysian

National Strategy for Financial Literacy. The strategic priority highlights the importance for Malaysian to have awareness on financial scams and fraud. As one of the main users in DFS, this research is very timely in identifying the current perception of entrepreneurs and managers of SMEs about the DFS protection.

Therefore, this study's purpose is to examine the relationship between DFL and Financial Sustainability.

1.2.4 Financial Sophistication

Financial Sophistication is equated as a human capital that brings enrichment to a person's capacity to produce more financial decisions which are proven to be efficient (Huston, Finke & Smith, 2012; Guliman & Uy, 2019).

It was also observed that the growing presence of complexity of the financial products to sector of retail has posed a challenge for those labelled under the category of 'financial unsophisticated' (Lusardi & Mitchell, 2014). Thus, this point explains the crucialness of Financial Sophistication to effectively handle financial decisions which are complex.

Literature pertaining to entrepreneurship recommends that improved results is a result of the conditional effects of strategy and resources which are valued like human capital. Hence human capital which cover Financial Sophistication can be counted as aresource-based value-added point that supports business strategy adoption and it is linked to the performance or sustainability of the business (Guliman & Uy, 2019).

In various nations, SMEs are significant to the country's growth as it provides the avenue in employment generation (Robu, 2013; Prasanna, Jayasundara, Naradda

Gamage, Ekanayake, Rajapakshe & Abeyrathne, 2019) However, difficulty ensues alongside a presence of a barrier with regards to the growth of SMEs due to factors such as unsatisfactory financial statements, lack of expertise in accounting and finance aspects (Hampel-Milagrosa, Loewe & Reeg. 2015; Karadag, 2015). These researches give an implication that the competency by entrepreneurs and their extent of financial sophistication are crucial in the sustainable performance of SMEs.

From statistical data amongst Malaysian SMEs, the rate of advanced technological adoption is only 30% and only a mere 10% of Malaysian manufacturing companies adopts the IR4.0 features, which conveys the meaning that Malaysian Manufacturing SMEs is included in this low rate of 10% amongst Manufacturing companies. Unlike Singapore, South Korea and Japan, their SMEs' IT adoption comprise of 50% (Shahzad et al., 2023).

Hence, this study's purpose is to further add and contribute to the support of this point by conducting an investigation between the relationship between Financial Sophistication and Financial Sustainability.

1.2.5 Digital Financial Services (DFS) Consumer Protection

Consumer protection can be defined as a pivotal element of inclusive financial systems that provide transparent and fair treatment and instill confidence to the financial consumer. Consumer protection in DFS is not only about gaining consumer confidence but also their trust in a stable and growing market (Okello & Ntayi, 2020).

Amidst increasing digital transactions and digitalisation of the economy, established players and newcomers are creating unique ways to fund SMEs. SMEs which depend heavily on access to capital draw its resources and strength from its ability to utilise and adjust to DFS. Such ability will help bridge the financing gap and boost the demand-side perspective (Thathsarani & Wei, 2022).

The cases of cyber-attacks against financial sector are at alarming rate especially during the Covid-19 pandemic. The Edge Markets, a Malaysian leading business magazine reported on August 16, 2020 that in the U.S., the financial sector has been cyber-attacked and the trends shows a surge by 238% between February and April 2020, the peak period when the Covid-19 pandemic was fast spreading across the U.S. and stay-at-home orders were implemented. In Malaysia, the period between March 18 until July 3, 2020, show that cyber security attacks have increased by 109 per cent since the Covid-19 outbreak (Communications Ministry, 2020).The offences revolve in the crimes of cyber harassment, hacking, corruption, fraud, breach and malicious malware as well as code that can harm a computer or device as well as their stored data.

With the number of reported cases, it is crucial for financial institutions to keep investing in cyber-security solutions. In a report by MSME Statistics (2022), data by Kaspersky Security Network (KSN) indicated that business users up to 767,000 in Malaysia nearly plagued with Internet-borne malware in 2020. Moreover, 269,533 attempts in the nature of phishing were plagued towards Malaysian SMEs in 2020's first half, 56% exceeding 2019. Meanwhile, 238,780 crypto-mining attempts were plagued against SMEs in the first half of 2020, an almost two-fold uptick compared with 2019. Average speaking, one data breach can cost as high as RM400,000 to an SME in Southeast Asia (SEA) and this will affect the SME's sustainability (MSME Statistics, 2022). Based on the statistics by Malaysian Cybersecurity Insight 2024 report, Ransomware-as-a-Service (RaaS) attacks have rose by 45% and majority of the victims are SMEs in the country. Previously, an antivirus programme may suffice in protection but as the threats get more complicated, the tactics of cybercriminals are getting more out of hand and antivirus programmes give only a limited assistance in cybersecurity (Arifin , Radzi, Rosman & Alimin, 2025).

As an avenue to resolve cyber-attacks, policy of consumer protection can avoid information asymmetries from both solutions providers and consumers and whilst resolving issues of limited bargaining power and digital literacy (UNCDF, 2021). As the Malaysian SMEs continue towards the journey of digitalisation cybersecurity should be the priority in spite of their business sizes towards protecting and keeping the cash flow. A comprehensive DFS protection along with financial sophistication and DFL are importantin ensuring business sustainability. Comprehensive protection and prevention programmes need to be put in place to greatly improve DFS uptake which serve the gateway to increase business opportunities (Menike, 2018).

The aims of this research is to: indicate the influence of perceived DFS consumer protection on the relationship between DFL and Financial Sustainability. Also, this particular research investigates the moderating effect of DFS protection on the relationship between Financial Sophistication and Financial Sustainability.

1.2.6 Risk Governance and Internal Controls (RGIC)

Risk Governance and Internal Controls (RGIC) is a dimension of Corporate Governance. In layman terms, Corporate Governance refers to how the business is being given direction and controlled. It provides the avenue of supporting the company to achieve its goals (Kiara & Kiara, 2021). Corporate Governance hence can be referred to the way in which the corporation's power is exercised according to stewardship of its total assets and resources. This is for the aim of maintaining and boosting the value of shareholders whilst giving satisfaction to other proponents of people with interests towards the organisation in the context of its corporate vision and mission. It is also forming a equilibrium between economic and social goals between persons and communities' objectives. Simultaneously, it is concerned also with the efficient use of resources, accountability in the utilisation of power and stewardship to align the interests of entities (Kosgei et al., 2014; Guluma, 2021).

With regards to the first component of RGIC, which is Risk Governance, a sound framework of governance provides decision-making and oversight process which is more structured and accountable. Such a framework ensures that all stakeholders, regardless if they are shareholders, employees, regulators or the community in the broader sense, show confidence in the company's to operate well in terms of ethics, transparency and efficiency. This framework comprise a combination of principles, policies, and processes give guidance to the organisation in achieving its objectives while complying to legal and ethical benchmarks. Its emphasis are on accountability, management of risks, and compliance, ultimately nurturing a sense of trust in the operations of the organisations whilst demonstrating sustainability. A well-tailored governance framework safeguards against potential predicaments and makes way success and growth in the long-run speaking in terms of Financial Sustainability (Malaysian Institute of Corporate Governance, 2024).

As for the second part of RGIC, which is Internal Controls, controls give protection to the weak individuals from temptation, the strong from chances and opportunities and the guilt-free from being the victim of suspicion. In the most basic sense, effective internal controls can allow SMEs to pick up errors, in fostering mistakes prevention, identify and detect fraudulent practises, and ensure the trustworthiness of financial reports attributing to the robust policies and practices. Of late, the role of internal controls expanded to managing primary risks to companies' success (International Finance Corporation, 2019).

Internal control is a term that is broad and covers a wide area of operational aspects. Management exercises a number of avenues in terms of Internal controls in order to secure a smooth and economic functioning of the entity of the business. Internal controls provide assistance to management in myriad of functions' performance (Shanmugam, Ali and Haat, 2012). Internal control can also be defined as a process designed by those charge with governance and any personnel within management in providing well-reasoned assurance about the entity's aims achievement regrading to financial reporting's reliability, effectiveness and efficiency of operation (Jubb, 2007).

Internal control's design and implementation is to counter detected business's risk that hinders the achievement of these objectives. Internal controls systems provides an avenue to meet its stewardship or agency obligations. Such internal controls system can ensure the safeguarding of assets and records but also generate an environment that emphasizes efficiency and effectiveness. This is becoming more vital as entities automate their information system in the midst of the growing importance of DFS. Good internal controls are vital regardless of the size of the business entity (Shanmugam et al., 2012). In terms of Control Activities, it will safeguard and assist the Manufacturing SMEs in minimising overproduction, to name an example (International Finance Corporation, 2019).

RGIC relates to digital finance and it is covered by the operational definition which encapsulates Information Technology (IT).

1.2.7 Financial Sustainability

Financial Sustainability can be known to be a phenomenon in which the selling price of a product or service that not only cover expenses but also generates a profit (Šebestová, 2021).

Sustainability is the capability of an organisation to maintain and preserve itself over a long period of time in terms of its status. Specifically, it is the capability to maintain and have a sustenance of financial capacity over a long period of time (Sontag-Padilla, Staplefoote & Morganti, 2012). With regards to SMEs, Financial Sustainability is profit-making and has a linkage with SME's survival without depending on government subsidies or donor funds. SMEs can have a coverage on their operational costs from income as long as they have adequate capitals for recapitalisation (Ur Rahman, Ali Shah, El-Gohary, Abbas, Haider Khalil, Al Altheeb & Sultan, 2020).

In a situation of crisis that includes the pandemic of Covid-19, Financial Sustainability should make an organisation to be able to self-finance to meet its financial obligation to fund business activities.

The cruciality of Financial Sustainability in SMEs in South Africa is studied, and the study shows that lack of Financial Sustainability can lead to exposure of economic volatility, increased transaction fees etc. (Olarewaju & Msomi, 2021).

Sustainability can be divided into Economic Sustainability and Financial Sustainability (Gleißner et al., 2022). Hence, in Ye and Kulathunga (2019), financial sustainability is obtained from the sustainability construct in the context of Manufacturing SMEs in accordance with the Operational definition of reduced cost and attainment of revenue which covers expenses.

Financial Sustainability is shown to be underrepresented in sustainability management and reporting regardless of research and practice (Gleißner, Günther, & Walkshäusl, 2022). Hence, this study aims to fill this void. Financial Sustainability is key to the growth of SMEs and so deserves proper attention by stakeholders who are relevant.

1.3 Problem Statement

In present times, digitalisation cannot be overlooked. Especially for SMEs, it creates either an opportunity or a barrier for assuring their competitiveness as well as its sustainability, not only locally but also on the global scale.The primary objective of digital transformation is to obtain new data and to utilise such data to renavigate outdated processes and such data-driven methods create opportunities to acquire competitive advantages by business models' reorientation (Šimberová, Korauš, Schüller, Smolíkova, Straková & Váchal, 2022).

As the Malaysian SMEs continue in the direction of digitalisation, cybersecurity should be the top priority regardless business' size. Digitalisation alongside cybersecurity will definitely be the optimum decision in safeguarding the cash flow. Businesses need to spend adequate resources financially to ensure protection on their systems. Cybersecurity as such, is closely linked to the sustainable development of the company (Šimberová et al., 2022). Therefore, a comprehensive DFS protection plan along with financial sophistication and DFL are important in ensuring business sustainability. Comprehensive protection and prevention programmes need to be put in place to greatly improve DFS uptake which serve the gateway to increase business opportunities (Menike, 2018).

It should be made known that the top five obstacles for Malaysian SMEs including Malaysian Manufacturing SMEs to shift into digitalisation are financing (49%), skillset exhibited by employees (48%), technology adoption (48%), business planning and strategy (46%) as well as networking (40%). This will cause Manufacturing SMEs to lose out and unable to harness and leverage fully DFS in the context of digital economy. This would pose a challenge in obtaining full realisation of digital transformation benefits (Orissa International, 2019).

In spite of fast growth of technological leap in DFS during the last decade, DFS being the source impacting the firm‘s performance or profitability of the firm did not garner the warranted attention in the academia arena, more so in the context of SMEs (Abbasi & Weigand, 2017). This study aims to address such gap.

In terms of the importance of Financial Sustainability, research has shown that SMEs with a range of optimum Financial Sustainability also will have an optimum Financial Stability (or financial equilibrium) and Financial Performance situation due to its correlation (Herman & Zsido, 2023). Financial Stability undergoes elimination or critically lowers the level of bankruptcy risk and assures health financing as well as efficient use of the assets of the company. In addition, financial stability leads to competitive advantages over those companies in an situation which is unfavorable (Drobyazko, Zsido, 2020; Herman & Zsido, 2023). Financial Performance means efficiency and profitability, which is able to be measured based on financial performance indicators. Financial Performance also correlates closely with Financial Equilibrium based on a study carried out on several companies in the listing of the New York Stock Exchange (Batrancea, 2021). Hence, Financial Sustainability, on the basis of financial performance, as well with high stability of financial situation (also known as financial equilibrium) is the target of all establishments and enterprises no matter the business size and nature of the business. Sustainability in the long-haul of enterprises is the most crucial element in the national economies' growth (Herman & Zsido, 2023). Whilst a number of empirical studies have studied the role and interplay between Financial Stability and Financial Performance , there exist an obvious gap in undertaking an approach which is integrative and holistic to Financial Sustainability and this step of approach was undertaken by Herman and Zsido (2023) and showed support of the hypothesis that good Financial Sustainability means good Financial Stability and Financial Performance as iterated above. The Covid-19 outbreak heightens the essentiality of achieving Financial Sustainability. Managers of enterprises progressively look for new ways to management and administration of their businesses to maximize the added value and competitiveness in the long run (Saidi, Mohd Radzi, Ali & Ab Ghaffar, 2022).

In a previous study, it can be observed that even a successful company still has a very high tendency to become bankrupt during its entire journey of growth. This warrants looking for key impact reasons and possible avenues on going about the bankruptcy risk reduction and increasing of Financial Sustainability (Schwab, Golder & Reiner 2019).

SMEs require financial literacy to assess their business' financial dealings and take on financial decisions. Also, financial literacy enables SMEs to undergo risk management via strategies like maintaining and preserving financial reserves, diversification of investment and insurance-related matters. Insufficient financial literacy has been known as one of the main hindrance to sustainable development for SMEs, hence creating an importance of this research as an Independent Variable, more so with DFL attributed to the growing trend of DFS. This "Digital Literacy" element addition to Financial Literacy would certainly fill the research gap as research has strongly emphasised "Financial Literacy" without the element of Digital Literacy (Ye & Kulathunga, 2019).

The results of Guliman and Uy (2019) state that Financial Sophistication playing the role of human capital can be considered as a valuable asset for the SMEs in terms of Financial Sustainability especially due to the fact that the entrepreneur mirrors the enterprise. So, this study expands its scope by studying within the scope of Malaysian Manufacturing SMEs.

Despite showing the lack of meaningful contribution of Corporate Governance towards Financial Sustainability, it is recommended by previous researchers an improvement in the Nigerian microfinance sector's Corporate Governance aspect to boost the institutions' level of Financial Sustainability. In this study, the scope of study extends to Malaysian Manufacturing SMEs. Therefore, the corporate governance dimensions focuses based on the guideline by International Finance Corporation (2019), which differs from normal companies. This study will have a focus on the specific dimension of Risk Governance and Internal Controls under the umbrella of Corporate Governance.

This study will also examine the effects of DFS Consumer Protection between DFL and Financial Sustainability, Also, the effects of DFS between Financial Sophsitication and Financial Sustainability will bring a new form of contribution to the study of Financial Sustainability as there is lack of study in this particular aspect of using DFS Consumer Protection as the moderating variable. This also echoes the suggestion for future researchers to expand their model by including potential interacting. mediating and moderating variables to improve its explanatory power (Ye & Kulathunga, 2019). DFS Consumer Protection is justified as a moderator as it provides a new theoretical insight in accordance with editorial works (Memon, Cheah, Ramayah, Ting, Chuah & Cham, 2020). This is because as explained earlier, the DFS consumer protection model that works properly safeguards consumers of financial services. Such environment should be promoted in which utilising financial products and services is deemed secure for consumers to make financial decisions, thus influencing the relationship between digital financial literacy, financial sophistication and Financial Sustainability, propelling the need to study this aspect as a moderating variable. Furthermore, there are inconsistent findings between Financial Sophistication on Financial Sustainability as conveyed in literature, which strengthens the justification of studying DFS Consumer Protection as a moderator rather than a direct predictor nor mediator, as per Chapter 2.

1.4 Research Questions

1. Does Digital Financial Literacy positively influence the Financial Sustainability?
2. Does Financial Sophistication positively influence the Financial Sustainability?
3. Does Risk Governance and Internal Controls positively influence the Financial Sustainability?
4. Does Digital Financial Services (DFS) Consumer Protection positively influence the relationship between Digital Financial Literacy and Financial Sustainability?
5. Does Digital Financial Services (DFS) Consumer Protection positively influence the relationship between Financial Sophistication and Financial Sustainability?

1.5 Research Objectives

1. To examine the relationship between Digital Financial Literacy and Financial Sustainability.
2. To evaluate the relationship between Financial Sophistication and Financial

Sustainability.

3. To analyse the relationship between Risk Governance and Internal Controls and Financial Sustainability.
4. To investigate the influence of Digital Financial Services (DFS) Consumer Protection on the relationship between Digital Financial Literacy and Financial Sustainability.
5. To analyse the influence of Digital Financial Services (DFS) Consumer Protection on the relationship between Financial Sophistication and Financial Sustainability.

1.6 Scope of the Study

The online self-administered questionnaires survey will be distributed by email to the owners of the manufacturing SME with an estimated sample size of about 100 SMEs. The samples will be chosen from the Federation of Malaysian Manufactures (FMM) Directory listed manufacturing SMEs, which has been considered as the most comprehensive list of the SMEs database. This study is a cross-sectional study.

Manufacturing SMEs are chosen for this research due to reasons which are twofold. Firstly, Manufacturing SMEs constitute 97.14% (47,698 companies) out of the manufacturing establishments in the country of Malaysia in total. Moreover, the biggest contributors to the local economy in Malaysia is the manufacturing sector (Nor-Aishah, Ahmad & Ramayah, 2020). Thirdly, the manufacturing sector is one of the most crucial and biggest contributors to the Malaysia's national economy and can potentially affect the environmental setting and trigger its destruction (Hina et al., 2024). In addition, technological alterations and increased competitive pressure have tremendous effect on Manufacturing SMEs on a global scale (Nawanir, Lim, Lee, Moshood, Nur & Ahmad, 2020) Therefore, only Manufacturing SMEs are studied in this regard and not Service SMEs.

It was determined that majority manufacturing companies in Malaysia are located on the West Coast of Peninsular Malaysia (Musa & Chinniah, 2016). Such characteristics imposes a limitation in terms of geographical distribution of the sample within Malaysia.

Financial Sustainability, is study's dependent variable is an unidimensional construct. It is underpinned by the KBV and Agency Theory. Meanwhile, DFL studied in this research consist of 5 dimensions and they are Basic knowledge and skills, Awareness, Practical Know-how (the knowing how), Decision- making (attitudes & behaviours) and self-protection (Lyons & Kass-Hanna, 2021).

Guliman's (2020) study uses 4 dimensions to measure Financial Sophistication. They are Financial Behaviour, Financial Attitude, Financial Decision-Making Style and these dimensions are studied in this research.

To study DFS Consumer Protection, four dimensions to canbe used to measure this construct. They are Transparency, Suitability, Security and complaints (Vieira, Delanoy, Potrich & Bressan, 2020).

In addition, Risk Governance and Internal Controls is studied on its relationship towards Financial Sustainability.

1.7 Significance of the Study

As emphasised earlier, Malaysia has been experiencing a rapid growth in digital economy. Based on the data from 2010 to 2016, the digital economy grew faster than the GDP as a whole and is estimated to reach 20 percent of the economy by 2020. The financial services industry in Malaysia has been navigating the digital revolution through the offering of DFS and generating profits through efficiency, cost savings and wider reach. A soar in FinTech, especially payments through the digital platform is prominent as larger number of SMEs begin being transformed digitally. The Fintech Malaysia Report 2021 shows that Malaysia's digital shift is propelled by the COVID-19 outbreak. As the importance of financial technology (Fintech) is being recognized. Linking this benefit to this particular study, appealing to the consumers will increase the ability of an organisation to generate revenue in response to its demand of its products and services, which in turn increases Financial Sustainability.

Literature emphasises various issues faced by SMEs in the competition. The survival opportunity that shows a low-rate is the most pressing issue pertaining to the SMEs in the competition. Three competitive challenges which contribute to these issues are the sustainability challenge, the global challenge as well as the technological challenge. This study aims to dive deep into the technological challenge in order to explore better Financial Sustainability of SMEs (Prasanna et al., 2019).

Therefore, this particular study goes through a comprehensive analysis of DFL as well as Financial Sophistication and explores the mechanism by which DFS consumer protection, alongside the introduction of Risk Governance and Internal Controls may influence their relationships with SMEs' Financial Sustainability. This is significant in response if the fast-growing digital economy.

This study is significant in comprehending parameters that are correlated and linked to growth of sustainable business and in comprehending major causes of success or failure.

This study will benefit different stakeholders. The findings of this study can help