DIGITALIZATION AND INNOVATION IN SMES: INFLUENCES ON THE BUSINESS PERFORMANCE IN SMES

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A project report submitted in fulfillment of the requirement for the award of a
Bachelor of Technology Entrepreneurship with Honours (BTEC) With Honours
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By

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DECLARATION

'Except citations and quotations that have been properly acknowledged, I now declare that this thesis based on my original work.' 'I further declare that it has not been submitted for any degree or award at University Technical Malaysia, Malacca or any other institution earlier or concurrently.'

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DEDICATION

I dedicate this work to those whose unwavering support and guidance have been the cornerstone of my academic journey. To Professor Datuk Dr. Izaidin Bin Abdul Majid your mentorship, profound insights, and unwavering encouragement have not only shaped the trajectory of this project but also enriched my understanding of the subject matter. Your dedication to excellence and belief in my capabilities have inspired me every step of the way. I am deeply grateful to my esteemed panel's Ts Dr. Yusri Bin Arshad for their invaluable feedback, constructive criticism, and scholarly guidance throughout the development of this study. Your expertise and commitment to academic rigor have played a pivotal role in refining my research methodology and enhancing the quality of my work. To my beloved parents, Mr Che' Omar Bin Isa and Mrs Rogayah Binti Yusof, your unconditional love, unwavering support, and endless sacrifices have been the bedrock of my academic pursuits. Your belief in my aspirations and relentless encouragement have fueled my determination to strive for excellence. And to my dear friends, who have stood by me with encouragement, understanding, and countless late-night discussions, your friendship has brought joy and camaraderie to every phase of this endeavor. Your unwavering belief in me has been a source of strength and motivation. This project is dedicated to each of you with profound gratitude and appreciation for your profound impact on my academic and personal growth.

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ABSTRACT

In the dynamic landscape of modern business, small and medium-sized enterprises (SMEs) are increasingly leveraging digitalization and innovation to enhance their competitive edge. This research explores the transformative impacts of digital technologies and innovative practices on SMEs, focusing on the advantages they accrue through these processes. Through a comprehensive review of literature and empirical analysis, this study examines how digitalization enables operational efficiencies, improves customer engagement, facilitates market expansion, and fosters organizational resilience. Furthermore, it investigates the role of innovation in driving these digital advancements, highlighting strategies and frameworks that SMEs adopt to harness digital tools effectively. The findings underscore the critical importance of embracing digital transformation and fostering a culture of innovation within SMEs to navigate challenges and seize opportunities in today's digital economy. This research contributes valuable insights into the strategic implications of digitalization and innovation for SMEs, offering practical recommendations for policymakers, business leaders, and stakeholders aiming to support and accelerate SME growth in the digital age.

Keywords: Digitalization, Innovation, Small Medium Enterprises (SMEs), Digital Marketing, Customer Support Divisions, Manufacturing and Products and Services.

ABSTRAK

Dalam landskap dinamik perniagaan moden, perusahaan kecil dan sederhana (PKS) semakin memanfaatkan pendigitalan dan inovasi untuk meningkatkan kelebihan daya saing mereka. Penyelidikan ini meneroka kesan transformatif teknologi digital dan amalan inovatif ke atas PKS, memfokuskan pada kelebihan yang mereka peroleh melalui proses ini. Melalui semakan komprehensif terhadap literatur dan analisis empirikal, kajian ini mengkaji bagaimana pendigitalan membolehkan kecekapan operasi, meningkatkan penglibatan pelanggan, memudahkan pengembangan pasaran dan memupuk daya tahan organisasi. Selain itu, ia menyiasat peranan inovasi dalam memacu kemajuan digital ini, menonjolkan strategi dan rangka kerja yang PKS pakai untuk memanfaatkan alatan digital dengan berkesan. Penemuan ini menekankan kepentingan kritikal untuk menerima transformasi digital dan memupuk budaya inovasi dalam PKS untuk mengharungi cabaran dan merebut peluang dalam ekonomi digital hari ini. Penyelidikan ini menyumbangkan pandangan berharga tentang implikasi strategik pendigitalan dan inovasi untuk PKS, menawarkan cadangan praktikal untuk penggubal dasar, pemimpin perniagaan dan pihak berkepentingan yang bertujuan untuk menyokong dan mempercepatkan pertumbuhan PKS dalam era digital.

Kata kunci: Pendigitalan, Inovasi, Perusahaan Kecil Sederhana (PKS), Pemasaran Digital, Bahagian Sokongan Pelanggan, Pembuatan dan Produk.

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LIST OF ABBREVIATIONS

ABBREVIATIONS	MEANING
SMES	Small Medium Enterprises
IT	Information Technology
SDG	Sustainable Development Goals
R&D	Research And Development
ROI	Return On Investment
AI	Artificial Intelligence
CRM	Customer Relationship Management
IV	Independent Variable
DV	Dependent Variable
SPSS	Statistical Package for The Social Sciences

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CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

This first chapter provides an overview of the research conducted on digitalization and innovation which influences business performance in SMEs. This study explores how digitalization and innovation affect SME business performance. It covers the background, purpose, research questions, and objectives. The study also outlines its scope, limitations, and significance. The focus is on how digital marketing, customer support, and innovation in manufacturing, products, and services improve SME performance. The scope of this study is to determine to what extent digitalization has improved operational efficiency in SMEs. Moreover, the study was conducted also to investigate how digitalization has enhanced customer satisfaction and engagement in SMEs. This research also wanted to identify the main challenges faced by SMEs in the digital transformation process, and how effective strategies are in overcoming these challenges. Lastly, the topic of this research is to investigate how the adoption of digital technologies has influenced revenue growth and market competitiveness in SMEs.

1.1 BACKGROUND OF THE STUDY

SMEs play a crucial role in economies across the world, driving employment, fostering innovation, and supporting economic growth (European Commission, 2020). The rapid progress of digital technology has transformed the corporate landscape, creating both opportunities and challenges for SMEs. As the world increasingly moves online, every organization must integrate digital technology into its operations. Digital information has enabled businesses to improve economic performance while minimizing risks. For example, social media is revolutionizing how businesses engage with clients, offer services, and integrate their IT systems.

Entrepreneurship has become an essential component of modern economies, driving innovation, economic growth, and job creation (Sahil Sagar, 2024). Business performance in SMEs refers to the assessment of how effectively small firms operate across a range of measures. These measures often include financial performance, such as revenue growth and profit margins; operational efficiency, such as production costs and process improvements; market performance, such as market share and customer happiness; and overall growth and sustainability.

Digitalization is becoming a standard trend in the global economy, with SMEs leveraging digital tools to streamline operations and reduce costs, making them more efficient and competitive. Innovation, defined as the adoption of new technology or management methods to accomplish targeted operational gains (Tornatzky et al., 1990), frequently entails developing new goods or processes to better suit consumer expectations (O'Regan & Ghobadian, 2005; Zahra et al., 1999).

Technological evolution and globalization have prompted SMEs to adopt open innovation, partnering with other entities to share and develop ideas (Chesbrough, 2003). Digital technologies support this by enabling global communication and collaboration, fostering a broader innovative ecosystem. Thus, digitalization and innovation are interconnected, each enhancing the other to create more competitive business practices.

1.2 PROBLEM STATEMENT

This study aims to conduct an in-depth examination of the intricate relationship between digitalization, innovation, and the business performance of digital technology within Small and Medium Enterprises (SMEs). The primary goal is to understand how the adoption of digital technologies and the cultivation of innovative practices affect SMEs' competitive positioning and operational efficiencies, thereby addressing the imperative for SMEs to adapt to the digital age and maintain competitiveness in today's rapidly evolving market environments characterized by technological disruptions and changing consumer behaviors.

The biggest challenges for SMEs include limited financial resources and increased competition. One of the biggest challenges is a lack of financial resources, which makes it difficult for small companies to invest in sophisticated technology and infrastructure. Due to tighter budgets, SMEs sometimes struggle to appropriate cash for the purchase of new software, hardware, and other technological instruments required for digital transformation. Compared to bigger firms, SMEs often have limited access to capital markets and may struggle to get loans or attract investors, thus limiting their financial capacity. This financial constraint affects their capacity to recruit the specialized individuals required to oversee and implement digital initiatives. Recruiting and maintaining competent IT workers, data analysts, and digital marketing gurus necessitate competitive compensation and benefits, which may be costly for SMEs. Furthermore, the cost of ongoing training and development for existing employees to keep up with quickly changing technologies adds to the financial burden. Limited financial resources prevent SMEs from accessing external consultants, resulting in a shortage of skilled IT professionals who are proficient in advanced digital transformation methods such as machine learning and big data (Arnesh Telukdarie, 2023).

To maintain market share, SMEs must continually improve their products, services, and operational efficiency in the face of fierce competition from both larger companies and smaller firms. This entails concentrating on innovation and quality improvement to satisfy changing client expectations and industry standards. SMEs must adopt new technology, respond to consumer input, and maintain stringent quality control methods to distinguish their offers and stand out in the market. Improving operational efficiency through simplified procedures, waste reduction, and improved supply chain management is also critical, since it has a direct influence on cost structures and profitability. Despite the advantages that bigger firms have, such as economies of scale and substantial resources, SMEs may compete successfully by using their flexibility, personalized customer service, and quick innovation. SME's may use digital marketing to market and promote their products and services. Small and medium-sized enterprises (SMEs) have a demand-supply imbalance, hindering their use of digital marketing and e-commerce. Raising awareness and recognizing the benefits of technology in marketing is vital. Small and medium-sized enterprises (SMEs) have challenges in attracting and retaining qualified people compared to larger organizations owing to restricted networks, talent identification, and poorer compensation and working conditions (Arnesh Telukdarie, 2023).

Moreover, SMEs are essential in boosting economic growth and generating employment opportunities. However, businesses face significant challenges in implementing digitalization, which is becoming increasingly important for retaining competitiveness in the global market. Digitalization provides SMEs with various benefits, including better operational efficiency, increased customer interaction, and access to new markets. Despite these advantages, many SMEs fail to successfully deploy digital technology owing to financial restrictions, restricted access to financing, and high operational expenses. Intense competition necessitates ongoing innovation, but SMEs sometimes lack the finances and skills required for effective cybersecurity measures, making them exposed to digital attacks. Furthermore, the lack of a defined strategy plan for digital transformation hinders their efforts.

In conclusion, this study explores the impact of digitalization and innovation on SMEs' competitive positioning and operational efficiency. While digital adoption offers benefits such as enhanced efficiency and market access, SMEs encounter significant challenges, including limited financial resources and intense competition. Addressing these hurdles requires strategic planning and adequate support. Although digitalization presents substantial advantages, SMEs must overcome key challenges to fully capitalize on digital technologies. This research offers insights into effective strategies for achieving successful digital transformation in SMEs.

1.3 RESEARCH QUESTION

This research is investigating the digitalization and innovation in SMEs: influences on business performance. Additionally, a theoretical framework for examining the business performance of digital innovation and digitization in SMEs has been constructed. The study is directed by the following research questions:

1. To what extent does digital marketing contribute to business performance?

2. To what extent do digital customer support divisions contribute to business performance?

3. How does innovation in manufacturing contribute to business performance?

4. How does innovation in products and services contribute to business performance?

1.4 RESEARCH OBJECTIVE

This study's primary goal is to examine how innovation and digitalization in SMEs affect the business performance of digital the ensuing research goals have been developed as a result.

1. To evaluate the extent to which digital marketing strategies influence the overall business performance of SMEs.

2. To determine the impact of digital customer support divisions on enhancing business performance in SMEs.

3. To analyze how innovative manufacturing approaches contribute to the business performance of SMEs.

4. To investigate the role of innovation in products and services in improving business performance in SMEs.

1.5 DEFINITION OF KEY TERM

1.5.1 DIGITALIZATION

Digitalization involves integrating digital technology into various aspects of business operations, including marketing and customer support. By leveraging digital tools and platforms, businesses can streamline processes, enhance productivity, increase competitiveness, and increase performance in the digital economy. This shift has reshaped industries, opening doors for sustainable growth and expansion. Through digitalization, SMEs can adopt new business strategies to meet evolving customer needs and optimize operations, strengthening their position as a driving force of economic growth and development (Sohaib S. Hassan, 2023).

1.5.2 INNOVATION

Innovation involves the creation and implementation of manufacturing, products, and services that significantly benefit an organization. It requires the continuous pursuit of creative solutions to challenges and opportunities, fostering market growth and uniqueness. Innovation is crucial for sustainability, competitive advantage, and overall performance. SMEs can achieve superior performance by adopting both technological and non-technological innovations (Endang Siti Astuti, 2020). As new technological developments emerge across industries, companies gain new opportunities for digital transformations, allowing them to offer innovative products and services and it also can increase their performance. A key attribute of innovation is an organization's readiness for digital innovation (Mohammad Iqbal, 2020).

1.5.3 ENTREPRENEURS AND BUSINESS PERFORMANCE IN SMES

Entrepreneurship is a powerful means to fulfill the aspirations of individuals and nations, serving as a major tool to combat poverty, unemployment, and underdevelopment. It significantly contributes to the economic well-being of individuals and families (Onajite O. Godwin, 2022). SMEs play a crucial role as key drivers of economic growth and development, contributing significantly to economic stability and employment. They are considered the backbone of any economy and essential for achieving balanced economic structures. SMEs play a vital role in inclusive globalization and contribute to achieving the Sustainable Development Goals (SDGs) by driving sustainable economic growth, creating jobs, supporting industrial development, encouraging innovation, and helping to reduce income disparities. Digital transformation is vital for SMEs, enhancing their ability to process and conduct trade, setting them up for long-term success (Shatina Saad, 2019). Performance refers to a significant accomplishment in a specific area of work or expertise. The concept of performance refers to how an individual or group achieves an objective (Leyla Mahmudova, 2018). Business performance in SMEs refers to an assessment of how effectively small firms operate across factors like financial success, operational efficiency, market performance, and overall growth and sustainability. This includes evaluating management practices, staff skills, corporate culture, market conditions, competition, and the regulatory environment to identify the primary determinants of success or failure.

1.6   SIGNIFICANT OF THE STUDY

This research addresses a critical gap in understanding how digitalization and innovation influence the business performance of SMEs. Studies show that the impact of digitalization on innovation varies across SMEs, and the benefits of innovation depend on the type of digital adoption and innovation applied. Additionally, the study examines the role of internal R&D activities, indicating that investing in internal R&D can reduce the innovation impact of digitalization (Dragana Radicic, 2023). Adopting new digital technologies enhances skill development, competencies, and knowledge acquisition, all of which play a key role in driving innovation within businesses (Ardito et al., 2021).

This study aims to guide digitalization and innovation in SMEs, offering valuable advice to various stakeholders involved in SME management and policy. SME owners and entrepreneurs will greatly benefit from the study's insights into how digitalization and innovation affect their operations. Understanding these dynamics will enable them to make more informed decisions about technological adoption and innovation projects. Additionally, industry associations and business support organizations can use the study's results to tailor their services to the specific needs of SMEs. Furthermore, digitalization offers entrepreneurs and SMEs opportunities to enhance customer experience and streamline transactions, ultimately helping them achieve market goals, maintain profitability and increase their business performance. As a result, businesses and SMEs can reach their market objectives while ensuring sustainable growth and development.

1.7   SCOPE OF LIMITATION OF STUDY

This study investigates the impact of digitalization and innovation on Small and Medium Enterprises (SMEs), focusing on business performance, importance, and influence on revenue growth and market competitiveness. The research examines SMEs across various regions and industries, looking at digital tool adoption, process integration, and skill development over a defined period.

However, the study faces limitations. Limited sample size and diversity may affect generalizability, and data availability and reliability can vary. Subjective assessments of digitalization benefits and challenges may lead to differing perceptions. Rapid technological advancements could render findings quickly outdated, and external factors like economic conditions and regulatory changes may influence results. Additionally, while highlighting digitalization benefits, the study may not fully address risks such as cybersecurity threats and the digital divide among SMEs. Despite these limitations, the study aims to provide a balanced understanding of how digitalization and innovation enhance SMEs' competitiveness, efficiency, and business performance.

1.8   SUMMARY

Chapter 1 provides an overview of the background, problem statement, objectives, and significance of the research topic. It also defines key terms, highlights their importance, and outlines the scope of the study. This chapter delves into the concepts of digitalization and innovation in SMEs, examining their benefits, challenges, and impact on business performance. It highlights issues like lack of financial resources and increased competition. The research aims to identify these challenges, understand digitalization's importance, and assess its impact on revenue and competitiveness. Key terms are defined, and the scope includes digital tool adoption and skill development. This chapter lays the groundwork for examining how digitalization and innovation enhance SME efficiency and competitiveness.

CHAPTER 2
LITERATURE REVIEW

2.0 INTRODUCTION

This chapter examines the most recent ideas, benefits, and findings from experts in the fields of innovation and digitalization in SMEs. This chapter reviews the literature to develop a conceptual framework that incorporates significant and well-established variables and analyzes their importance to the study.

2.1 ENTREPRENEURS, SMALL AND MEDIUM ENTERPRISES (SMES) AND BUSINESS PERFORMANCE

Performance is a significant accomplishment within a specific area of expertise. It represents the extent to which an individual or group successfully attains a set goal (Leyla Mahmudova, 2018). Business performance in SMEs refers to an assessment of how effectively small firms operate across factors like financial success, operational efficiency, market performance, and overall growth and sustainability. This includes evaluating management practices, staff skills, corporate culture, market conditions, competition, and the regulatory environment to identify the primary determinants of success or failure. Entrepreneurship is a powerful means to fulfill the aspirations of individuals and nations, serving as a major tool to combat poverty, unemployment, and underdevelopment. Its significance to the economic well-being of individuals and families is indispensable. Entrepreneurship focuses on generating profitable ideas and is driven by visionary, goal-oriented, and innovative individuals or teams dedicated to developing and growing new businesses. These entrepreneurs aim to create profitable ventures that contribute to societal development (Onajite O. Godwin, 2022). SMEs play a crucial role as key drivers of economic growth and development, contributing significantly to economic stability and employment. They are considered the backbone of any economy and essential for achieving balanced economic structures. SMEs are essential in driving inclusive globalization and make a substantial contribution to the realization of the Sustainable Development Goals (SDGs). They drive sustainable and inclusive economic growth, generate employment opportunities, support sustainable industrialization, encourage innovation, and help minimize income disparities. Additionally, digital transformation is

particularly important for SMEs, enhancing their ability to process and handle trade, thereby positioning them for long-term growth (Shatina Saad, 2019).

2.2   DIGITALIZATION

Digitalization transforms company operations by integrating digital technologies across marketing and customer support divisions, utilizing digital tools to streamline processes, enhance productivity, and bolster competitiveness in the digital economy. Through automation, data analytics, cloud computing, the Internet of Things, and artificial intelligence, companies can make informed decisions, optimize workflows, and ensure real-time monitoring and control. Moreover, digital marketing techniques and e-commerce platforms leverage social media and search engines to engage audiences and expand market reach, driving corporate evolution towards sustained growth and expansion in the digital age.

Digitalization refers to the transformation of business models and the creation of new revenue channels using digital technologies (Jugindar Singh, 2023). Technologies like remote surveillance, big data analytics, the Internet of Things (IoT), and artificial intelligence (AI) provide businesses with a wide range of opportunities for growth and development. Furthermore, embracing digitalization enhances a company's competitive edge and fortifies its organizational resilience and flexibility. While digitalization undeniably influences overall business operations, it may not always directly impact specific competitive advantages, such as marketing strategies and customer support divisions. Marketing for SMEs is both challenging and rewarding. By mastering its unique dynamics, businesses can achieve significant growth. Leveraging innovative strategies, automation, and current trends, small businesses can create impactful campaigns. Personalized emails and content marketing drive success, helping SMEs thrive in a competitive marketplace. Additionally, advancements in digital and communication technologies have rapidly improved customer support. Affordable customer support tools and CRMs now enable SMEs to enhance their service capabilities significantly.

2.3   INNOVATION

Innovation encompasses the inventive development and execution of manufacturing, products, and services that significantly benefit the organization. This continuous pursuit of creative solutions not only promotes market growth and distinctiveness but also ensures sustainability and competitive advantage. SMEs achieve superior performance by embracing both technological and non-technological innovations. The ever-evolving technological landscape presents fresh opportunities for digital transformations, enabling the creation of innovative products and services. A fundamental aspect of innovation lies in organizational readiness for digital innovation, emphasizing the importance of adaptability to effectively leverage emerging technological advancements (Mohammad Iqbal, 2020). Thus, innovation spans from idea generation to organizational preparedness, driving organizational success and market evolution.

Innovation involves creating new solutions or enhancing existing ones. For SMEs, this means developing or improving manufacturing, products and services to boost effectiveness. Significant investment in digitally enabled strategies is essential (McKinsey, 2021). Digitalization can revolutionize manufacturing, products, and services and foster new cooperation forms between organizations, consumers, and workers. There is a growing awareness of the importance of digitalization and a need to focus on business model innovation to maintain sustainability through cost reduction and increased productivity. Furthermore, innovative practices can lead to improved customer satisfaction and loyalty by offering unique and improved solutions that meet evolving consumer needs.

Small manufacturing enterprises (SMEs) possess significant intangible assets but often have limited financial and other resources to support their manufacturing and marketing efforts. Additionally, their product markets are continually evolving and globalizing, making it crucial for them to efficiently acquire and manage their limited resources to ensure their survival (Kee S. Kim, 2008). Domestic manufacturing allows small firms to be more transparent about their supply chains and production processes, enhancing customer trust and fostering genuine connections with their target audience.

Additionally, various types of innovations, categorized as sustaining and disruptive, directly influence a company's products and operations. Sustaining innovation gradually enhances business functions, while disruptive innovation allows smaller businesses to challenge larger competitors. Innovation plays a key role in adding new dimensions to existing products or processes, leading to increased market share, higher revenue, and greater customer satisfaction.

2.4   THE RELATIONSHIP BETWEEN DIGITAL MARKETING AND BUSINESS PERFORMANCE IN SMES.

Digital marketing improves SME performance by boosting reach, visibility, and cost-effectiveness as compared to traditional marketing. It allows highly focused marketing by employing analytics to make data-driven decisions and enhance strategies. Social media and content marketing promote engagement and loyalty, which helps to boost revenues, brand exposure, and customer retention. However, Adam et al. (2020) suggests that, while digital marketing has an influence on SME performance, genuine digital transformation necessitates strengthening business models to provide value for customers and employees, assuring competitiveness in the digital economy. SMEs must have a clear market orientation to achieve a competitive edge in the digital market.

Hypothesis

H1: Digital marketing contributes significantly to achieving high performance in SMEs.

2.5   THE RELATIONSHIP BETWEEN DIGITAL CUSTOMER SUPPORT DIVISIONS AND BUSINESS PERFORMANCE IN SMES.

Digital support divisions have a big influence on SMEs' company performance by increasing customer satisfaction through timely and efficient help. These departments provide round-the-clock help through chatbots and automated answers, enhancing the entire client experience. Automation in customer assistance lowers the need for substantial human resources, cutting operating expenses. Furthermore, digital support systems can manage enormous amounts of questions at once, promoting corporate growth. The acquired interaction data assists SMEs in better understanding consumer wants and preferences, which guides product developments and personalized service. These elements help to promote customer retention, service delivery, and operational efficiency, which all increases overall business performance.

<u>Hypothesis</u>

H2: Digital customer support divisions contribute significantly to achieving high performance in SMEs.

2.6 THE RELATIONSHIP BETWEEN INNOVATION IN MANUFACTURING AND BUSINESS PERFORMANCE IN SMES.

Innovation in manufacturing is critical for SMEs' business development since it leads to improved product quality, fulfilling greater standards and consumer expectations. Advanced manufacturing technologies optimize production processes, lowering waste and operational costs, whilst creative practices enable SMEs to respond swiftly to market changes and customer needs, ensuring competitiveness. Furthermore, innovation can result in the creation of new goods and services, hence generating new income streams and market segments. Implementing eco-friendly and sustainable production techniques improves brand reputation while meeting regulatory criteria. Through these enhancements, SMEs may increase their market positioning, customer happiness, and financial success.

<u>Hypothesis</u>

H3: Innovative manufacturing contributes to high performance in SMEs.

2.7   THE RELATIONSHIP BETWEEN DIGITAL PRODUCTS AND SERVICES AND BUSINESS PERFORMANCE IN SMES.

Digital products and services are critical to the commercial performance of SMEs because they match current client demands for ease, accessibility, and technology integration. These solutions may be quickly scaled to meet increased demand without incurring major extra expenditure, and digital platforms enable continuous upgrades and enhancements based on user input and data analytics. Digital products may reach a worldwide audience, overcoming geographical obstacles and expanding market reach. Offering new digital goods and services sets SMEs apart from the competition and attracts more clients. These elements improve customer happiness, increase sales, and maintain a competitive edge, all of which contribute considerably to SMEs' overall company performance.

Hypothesis

H4: Innovative digital products and services contribute to high performance in SMEs.

2.8   RESEARCH FRAMEWORK

The framework employed in this research is a synthesis of theories and previous studies discussed earlier. It was designed to explore the factors that contribute to the benefits of digitalization in SMEs. This conceptual model is based on the relationship between digitalization and innovation among SMEs.
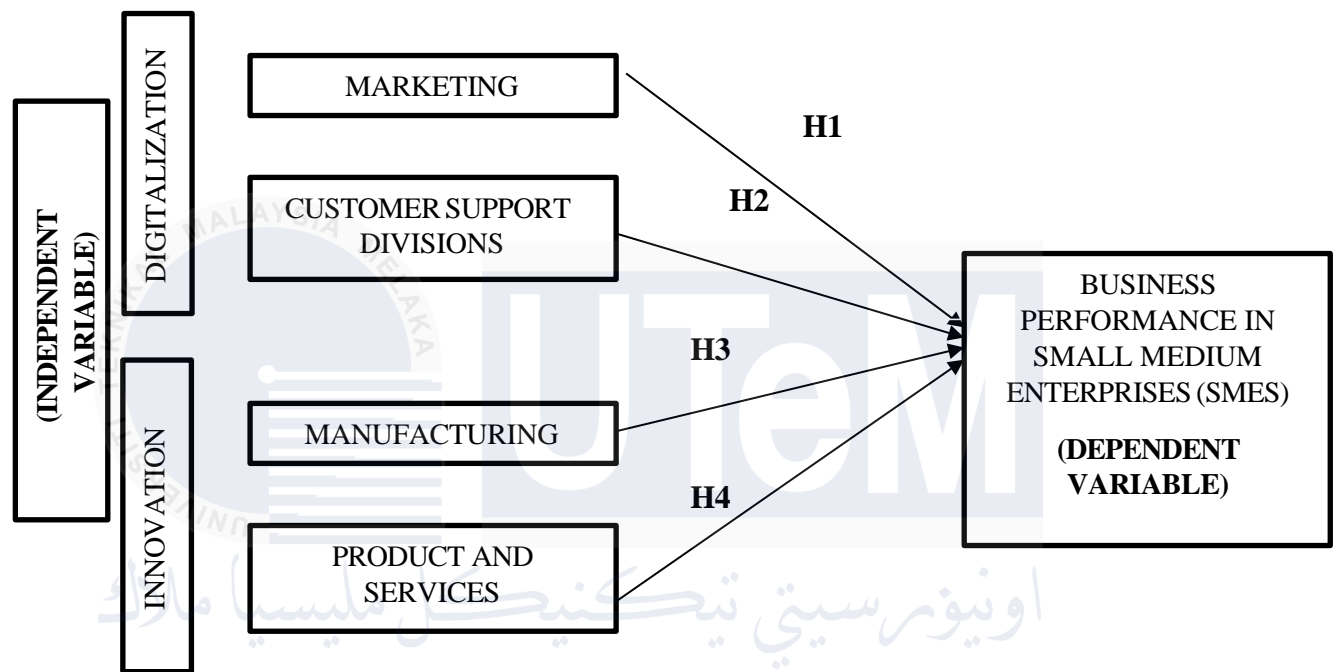
Figure 1: Conceptual Framework

This framework explains the complex relationship between independent variables which ultimately influences the dependent variable.

2.9   SUMMARY

In conclusion, digitalization and innovation are directly linked to SMEs, increasing competitiveness and encouraging growth. SMEs improve efficiency and productivity by integrating technologies such as automation, data analytics, cloud computing, IoT and AI, thus driving market growth and differentiation. Digital technologies encourage innovation, enabling SMEs to develop new goods, services and processes, thereby ensuring sustainability and competitive advantage. This synergy allows SMEs to manage resources better, promote transparency, create consumer trust, succeed in a competitive market and improve business performance.

CHAPTER 3

RESEARCH METHODOLOGY

3.0 INTRODUCTION

This study employed a quantitative research approach, utilizing a questionnaire survey administered through Google Forms. This method was selected for its ability to systematically collect and analyze numerical data, providing a structured way to capture respondent opinions and perspectives. The quantitative methodology allows for statistical analysis of the data, yielding objective and relevant results. This approach not only offers a comprehensive framework for investigating the impact of digitalization and innovation in SMEs but also enables the researcher to engage actively with current trends and gather significant insights. By providing a clear structure for data collection, this method ensures a thorough understanding of the subject matter, facilitating an in-depth analysis of the digital transformation and innovative practices within SMEs.

3.1   METHODOLOGICAL CHOICE

According to Saunders et al. (2016), there are three sorts of methodological choices quantitative, qualitative, and mixed approaches, which are identified by whether they focus on word data, data with numbers, or both.

The research approach is a framework that outlines how research is carried out. It describes the methods and processes for performing certain investigations or research. An analytical approach is a collection of approaches used in different types of study (Walliman, 2015). As a result, it is essential to select a strategy that is appropriate for the investigation. The quantitative research technique was chosen in this study because it allowed the researcher to better understand the respondents' ideas and viewpoints by delivering a questionnaire and survey via Google Forms. It is a comprehensive research technique since it allows researchers to discover information and knowledge by being involved in current events (Cresswell, 2003; Williams, 2007).

Once the study topics and focus have been defined and decided, the researcher will undertake research projects in Melaka. The researcher has chosen a quantitative technique in which the researcher will provide some questions about the elements impacting the business performance of digitalization and innovation in Small and Medium Enterprises (SMEs).

3.2   RESEARCH DESIGN

A research design acts as the blueprint for carrying out a study, outlining the approaches and techniques required for the research process. It helps researchers choose the most suitable methods for their topic, ensuring their studies are organized and effective. Key elements of a research design include gathering data, measurement, and analysis. As noted by Saunders et al. (2019), quantitative research designs are commonly linked to positivism, particularly when using systematic and structured data collection approaches.

The purpose of a research design is to transform research questions and objectives into a comprehensive research project, considering various techniques, options, and timelines. A well-defined research design is essential, as it must clearly state the study's purpose, derived from the research question, and specify the sources of data collection. Additionally, a solid research design should include a valid rationale for the chosen methods, ensuring the study's effectiveness and relevance. If the research on digitalization and innovation in SMEs, which focuses on the business performance of digital transformation, is effective, it will provide significant insights and serve as a reference for other firms and organizations. This accomplishment might encourage additional innovation, increasing the competitiveness and growth of SMEs in the digital economy. The knowledge could also help design policies and initiatives to assist SMEs in their digital transformation journey.

3.3   DATA SOURCES

The researcher gathered and organized the study data using both primary and secondary sources. These sources included a range of statistics, observations, and figures gathered from the places where the data was originally collected. The study's use of both primary and secondary data enabled wide coverage and accurate analysis.

3.3.1 PRIMARY DATA

Primary data is gathered by an investigator for the established goal of the study. This is direct feedback from the sources of the data collected. Primary data-gathering methods included surveys, interviews, and experiments. It is derived from sources for study purposes only. Primary data is important to our research.

Furthermore, secondary data sources were needed for the investigation. Secondary data is gathered from journals, books, notes, and related publications. Data was collected through the distribution of questionnaires to participants. The data is disseminated through online surveys and in-person interviews. According to Saunders et al. (2019), the Internet is the main method of primary data collection, which presents unique problems and issues for ethical norms. Saunders et al. (2019). According to Saunders et al. (2019), to ensure ethical primary data collection, potential responders must be allowed to make an informed decision about participating. Furthermore, original data should not be changed or created, nor should findings be faked.

The primary data for this study was gathered from respondents who completed this questionnaire. The questionnaire's respondents are primarily entrepreneurs and Small and Medium-sized companies (SMEs). Data gathered from these respondents can be utilized to generate a comprehensive report. The results of this research will serve as a useful reference for others.

3.3.2 SECONDARY DATA

According to Saunders et al. (2019), secondary data includes both raw data and published summary reports. Over the last decade, the number of available secondary data sources has increased dramatically, and accessing these sources has become much simpler. Secondary survey data is existing information gathered by surveys, generally utilizing questionnaires, for purposes other than the present study. This sort of data comprises material that has already been created and made available to scholars, and it is frequently acknowledged in earlier literature. Supplementing the main data with secondary data is critical for properly achieving a study's aims.

Furthermore, document secondary data is defined as data that may be physically or digitally preserved as proof, as opposed to spoken words. This enables data to be transported across time and place and analyzed for new uses. This allows data to be delivered across time and place and reanalyzed for uses other than those originally intended. These data consist of text, audio, and video material. According to Saunders et al. (2019), while books, papers, journals, and reports are frequently utilized to store secondary data, the text itself may also serve as important raw data. Secondary data sources allow researchers to have access to a multitude of information while also developing knowledge in their subject.

Secondary research data on the business performance of digitization and innovation for Small and Medium Enterprises (SMEs) were acquired from Google Scholar and Scopus. These sources provide previously released data that supports the study's aims. This secondary data is utilized to confirm and corroborate earlier study resultsMoreover, as technology continues to evolve, earlier research can provide valuable insights into the factors that affect the business performance of digitalization and innovation growth within SMEs.

3.4   RESEARCH STRATEGY

The research strategy used in this study refers to a thorough plan or approach established by the researcher to answer specific research questions or objectives. It defines the steps and procedures to be used in data gathering, analysis, and determination, to provide unique insights or knowledge. In this study, a survey approach was used to collect primary data for later statistical analysis.

According to Saunders et al. (2019), research strategies are generally specified to achieve the desired study objectives. Denzin et al. (2018) elaborate on research strategies, describing them as blueprints that guide researchers in managing their research questions. These techniques act as navigational aids, guiding researchers through the design, implementation, and monitoring stages of their investigations. They also serve as a methodological link between the researcher's conceptual perspective and the procedures used for data gathering and analysis. According to Saunders et al. (2019), research procedures include a variety of approaches such as experiments, surveys, archival/documentary research, and case studies. Meanwhile, ethnography, narrative study, action research, and grounded theory are alternative research methodologies.

This study used the combination method, combining survey results, theoretical frameworks, and previous research to perform a thorough investigation of the variables impacting the business performance of digitalization and innovation in Small and Medium Enterprises (SMEs). The selected approach entails conducting surveys and then analyzing the collected data with computer-assisted tools. Furthermore, past research findings were thoroughly analyzed to enhance and expand the current study.

3.4.1 SURVEY STRATEGY

Saunders et al. (2019) argue that surveys are commonly used in deductive research approaches. To successfully handle the study's issue, the researcher used a survey instrument for data gathering. Surveys are frequently considered by the public to be informative and easy to understand, making them an effective method of data collection. The use of a questionnaire-based survey strengthens this view even more because it allows for the quick collection of data from a broad group, making response comparisons easier. Furthermore, survey data may be properly analyzed using both inferential and descriptive statistical methods, revealing useful information about the study issue.

3.4.2 PRE- TEST

A pre-test is a test conducted before implementing a study, program, experiment, or research project. The pretest collects preliminary data, evaluates research design viability, identifies potential difficulties, and refines study instruments or methods previously to the main study or intervention. Pre-tests let researchers discover and address potential issues, assuring the study's usefulness and validity.

3.4.3 PILOT TEST

A pilot test was conducted to assess the respondents' agreement and the questionnaire's discriminating power in capturing a variety of answers. Before distributing the questionnaire to the intended target population, it was evaluated on a small sample of people who were comparable to the target group. This preliminary test aims to discover any ambiguities or problems in the questionnaire and allow any necessary changes. As part of the pilot project, 35 questionnaires were delivered to Small and Medium Enterprise (SMEs), and they were asked to provide comments and suggestions. This pilot test provided invaluable feedback, which guided changes to improve the questionnaire's clarity and comprehensibility. The final questionnaire was well-designed and effectively gathered the information needed for the research study thanks to repeated piloting and modification.

This chapter presents the survey results on how digitalization and innovation impact SMEs in Melaka. Data from 246 respondents was analyzed using SPSS. The questionnaire, consisting of 31 questions, covered three key areas: demographics, digitalization and innovation, and business performance. A pilot test with 35 respondents via Google Forms ensured questionnaire clarity and reliability. This process validated the survey instrument and improved its accuracy and consistency. The study emphasizes the role of digital transformation and innovation in enhancing SME efficiency, customer experience, and competitiveness. Findings provide insights and recommendations for supporting SME growth in Melaka.

3.4.3.1 DESCRIPTIVE STATISTICS

This chapter summarizes survey results on how digitalization and innovation impact SMEs in Melaka. Data from 246 respondents was analyzed using SPSS. The 31-question survey covered demographics, digitalization, innovation and business performance. A pilot test with 35 respondents ensured the questionnaire's clarity and reliability. Table 3.0 shows the meaning of the data's center and the standard deviation as its variability, summarizing the dataset effectively. The study underscores digital transformation's role in boosting SME efficiency, customer experience, and competitiveness, offering actionable insights for growth.

Descriptive Statistics						
	N	Range	Minimum	Maximum	Mean	Std. Deviation
Digital Marketing (IV1)	35	5.00	1.00	6.00	4.8629	.90589
Digital Customer Support Divisions (IV2)	35	5.00	1.00	6.00	4.9486	.91567
Innovative Manufacturing (IV3)	35	5.00	1.00	6.00	4.9086	.89356
Innovative Products and Services (IV4)	35	5.00	1.00	6.00	4.9429	.86985
Business Performance (DV)	35	5.00	1.00	6.00	5.0762	.87573
Valid N (listwise)	35					

Table 3.0: Item Statistics for Pilot Test

A pilot test with 35 respondents confirmed the questionnaire's clarity and reliability. All data collected from the pilot test was determined to be valid, with the mean values for all variables exceeding 4. This indicates that most respondents provided answers ranging between "agree" and "strongly agree," reflecting a positive perception of the survey topics. Based on these encouraging results, the researcher decided to proceed with the main data collection for the study. Table 3.0 highlights the meaning of the data centre and the standard deviation as its variability, providing a clear summary of the dataset. The study emphasizes the importance of digital transformation in improving SME efficiency, customer experience, and competitiveness, offering practical insights for growth.

3.4.3.2 RELIABILITY TEST (CRONBACH'S ALPHA)

The reliability test results, as shown in Table 3.1, reflect the responses of 35 participants from the pilot test. According to the theoretical framework outlined in Chapter 2, the study focuses on five key variables digital marketing, digital customer support divisions, innovative manufacturing, innovative digital products and services, and business performance in small and medium enterprises (SMEs).

Variables	Cronbach's Alpha	N of Items	Result
Digital Marketing	0.912	5	Excellent
Digital Customer Support Divisions	0.913	5	Excellent
Innovative Manufacturing	0.916	5	Excellent
Innovative Products and Services	0.889	5	Good
Business Performance	0.917	6	Excellent

Table 3.1: Interpretation of Reliability Based on Cronbach's Alpha
for Pilot Test Result

Based on Table 3.1, the Cronbach's Alpha values for digital marketing (0.912), digital customer support divisions (0.913), innovative manufacturing (0.916), innovative products and services (0.889), and business performance (0.917) indicate excellent reliability. This confirms that all variables are consistent, and the questionnaire is suitable for collecting responses from the remaining 246 respondents.

3.4.3.3 VALIDITY TEST

In pilot testing, correlation analysis focuses on examining the strength and direction of the relationship between multiple variables. This analysis allows researchers to determine how changes in one variable relate to changes in others, offering useful insights into the interdependent nature of the factors being studied. By understanding these relationships, researchers can better evaluate how variables such as digital marketing, customer support divisions, and innovation contribute to business performance in SMEs.

Correlations		IV1	IV2	IV3	IV4	DV
Digital Marketing (IV1)	**Pearson Correlation**	1	.790**	.779**	.693**	.554**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001
	N	35	35	35	35	35
Digital Customer Support Divisions (IV2)	**Pearson Correlation**	.790**	1	.729**	.624**	.657**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001
	N	35	35	35	35	35
Innovative Manufacturing (IV3)	**Pearson Correlation**	.779**	.729**	1	.851**	.637**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001
	N	35	35	35	35	35
Innovative Products and Services (IV4)	**Pearson Correlation**	.693**	.624**	.851**	1	.782**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001
	N	35	35	35	35	35
Business Performance (DV)	**Pearson Correlation**	.554**	.657**	.637**	.782**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	
	N	35	35	35	35	35
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 3.2: Analysis for Pearson Correlation

Table 3.2 presents the Pearson correlation analysis, which examines the relationships between all independent variables, such as digital marketing, customer support divisions, innovative manufacturing, and innovative products and services, with the dependent variable of business performance. This analysis provides valuable insights into how these independent variables are statistically associated with the performance of SMEs. Additionally, Table 3.3 provides the interpretation of validity for the pilot test results, based on the Pearson correlation values, offering a clearer understanding of the strength and significance of these relationships during the pilot phase.

Independent Variable	Pearson Correlation	Result
Digital Marketing	0.554	Positive
Digital Customer Support Divisions	0.657	Strong positive
Innovative Manufacturing	0.637	Strong positive
Innovative Products and Services	0.782	Strong positive

Table 4.3: Interpretation of Validity Based on Pearson Correlation

for Pilot Test Results

All variables have been validated and are suitable for use in the questionnaire. The researcher can now proceed to collect data from the remaining 246 respondents.

3.5   LOCATION OF RESEARCH

The research focused on Small and Medium Enterprises (SMEs) in Melaka to explore which factors impact the business performance of digitalization and innovation in these specific locations. Melaka was chosen as a research location to investigate the different features, preferences, and behaviors that promote digitalization and innovation among SMEs in these regions. By investigating these characteristics in Melaka, the research hopes to get a thorough knowledge of the local dynamics that influence the acceptance and success of digitalization and innovation projects among SMEs.

3.6   POPULATION

Weeks (2020) defines a population as a nation or a collection of individuals who share a common characteristic. Identifying the demographic is important for learning about the target group and confirming the findings reached from it. The population not only gives good knowledge but also demonstrates how to utilize it efficiently.

The population in this study must be identified to establish the characteristics that influence the business performance of digitalization and innovation among SMEs. This research focuses on Small and Medium-sized Enterprises (SMEs). The target demographic consists mostly of mobile phone users, notably entrepreneurs and SMEs.

This study's data was gathered in Melaka by a probability random sample survey approach. An online questionnaire was used to collect replies efficiently. This method enables a thorough knowledge of the factors that influence digitalization and innovation among SMEs in these locations.

The study focuses on gathering data among entrepreneurs Small and Medium Enterprises (SMEs) in Melaka through a probability random sample survey administered online. The sample size of 380 respondents was calculated considering factors like the study's nature, the number of variables, and the required level of accuracy in estimating the effects.

The questionnaire covers a range of topics, including demographic information and variables related to entrepreneurship, Small and Medium-Sized Enterprises (SMEs), digitalization, and innovation. To ensure the reliability and validity of the data gathered, each variable and its components are assessed using several items.

3.7   SAMPLING DATA

Sampling design is a mathematical strategy that determines the probability of selecting a specific sample. According to Saunders et al. (2019), sampling approaches allow researchers to collect data from a selection of cases or elements rather than all potential situations, which reduces the quantity of data required. Certain studies need sample data that allows researchers to draw statistical conclusions about the full population from which the sample was collected. Sampling is especially beneficial when a census is not possible or when time restrictions prevent surveying the whole population.

According to the most recent data, there are around 45,000 registered Small and Medium Enterprises (SMEs) in Melaka. Small and medium-sized enterprises (SMEs) are of great significance to the Malaysian economy, accounting for a significant portion of overall business establishments and significantly contributing to employment and GDP. To get a 95% confidence level that the true value is within ±5% of the surveyed value, more surveys are required. This study, however, is aimed at small and medium-sized businesses. The study chose the most qualified respondents to guarantee that the data focused on the creative aspects that encourage growth among entrepreneurs and SMEs. As a result, just 380 respondents were chosen to ensure more targeted data collecting.

According to Saunders et al. (2019), sampling methods are categorized into two types: probability (or representative) sampling and non-probability sampling. For this experiment, basic random sampling was chosen as the most appropriate strategy. This approach was selected because it highlights the potential of the sample and ensures that every individual in the population has an equal opportunity to be selected, enhancing the representativeness and credibility of the results.

Sample Size Formula

$$n = \frac{N(Z^2)\ p\ (1-P)}{(N-1)\ E^2 + Z^2\ (1-P)}$$

- n = required sample size
- N= population size (45,000 SMEs in this case)
- Z= Z-value (the number of standard deviations from the mean corresponding to the desired confidence level, e.g., $1.96^2 = 3.841$ for 95% confidence)
- p= estimated proportion of an attribute that is present in the population (0.5 is typically used if the proportion is unknown, as it provides the maximum sample size)
- E= margin of error (0.05 for ±5%)

$$n = \frac{45,000(1.96^2)\ 0.5\ (1-0.5)}{(45,000-1)\ 0.05^2 + 1.96^2\ (1-0.5)}$$

$$n = \frac{172872\ (0.5)\ (0.5)}{44999\ (0.0025) + (3.8416)\ (0.5)\ (0.5)}$$

$$n = \frac{43218}{113.4579}$$

n= 3808 x 10%

n= 380

This calculation resulted in a numerator of 43218 and a denominator of 113.4579, indicating a sample size of around 380 SMEs. This sample size assures that the study's findings are accurate and dependable, offering insights that can be applied to the full population of SMEs in Melaka. With a 95% confidence level and a ±5% margin of error, the study provides a dependable evaluation of how digitization and innovation affect SME performance. This methodological rigor enables strong and representative results, resulting in important and practical insights for SMEs.

3.8 QUESTIONNAIRE DEVELOPMENT

To answer the study questions, the researcher used a questionnaire to collect information from respondents. This was the major method for data collection in the study. Individuals were given questionnaires to obtain primary data on the variables driving digitalization and innovation in Small and Medium Enterprises (SMEs). The questionnaire was rigorously created to investigate the many innovative aspects influencing the adoption of digitalization in SMEs. It was divided into three portions, each of which focused on a distinct area of the investigation.

The first section examined the demographics of the respondents. This section's questions, provided in a closed-ended multiple-choice style, aimed to determine the demographic characteristics of the respondents. This information was critical for determining if the respondents were SME owners, workers, or stakeholders. Understanding the respondents' demographic backgrounds aided in more properly analyzing the data and understanding the distinct demands and behaviors of various segments within the SME sector.

Next, in the second part Section B, the researcher focuses on what extent does digital marketing contribute to business performance. This section assesses how digital marketing strategies impact the overall performance of SMEs. By exploring these aspects, it seeks to offer insights into the current state of SMEs and highlight opportunities for improvement in digitalization and innovation.

The researcher also focuses on what extent do digital customer support divisions contribute to business performance. This section determines the impact of digital customer support divisions on enhancing business performance in SMEs. It investigates their awareness, perceived benefits, and challenges in various areas. This review sheds light on the impact of digitization and innovation on SME performance and informs strategies for development and expansion.

Furthermore, the researcher focuses on how innovation in manufacturing contributes to business performance. This section analyzes how innovative manufacturing approaches contribute to the business performance of SMEs. It explores the implementation of advanced technologies and creative practices, examining their impact on product quality, cost efficiency, market responsiveness, and competitiveness. Through this analysis, the section aims to provide insights into the benefits of manufacturing innovation and its role in driving the success of SMEs.

Lastly, researchers emphasize the critical role of innovation in products and services in enhancing SME performance. Product innovation, through improved goods, and service innovation, via novel delivery methods, enable SMEs to differentiate themselves and improve market competitiveness. Studies by Tidd and Bessant (2020) and the European Commission (2022) show that SMEs adopting digital tools for innovation report significant improvements in revenue and customer satisfaction. Digital adoption enhances product development, streamlines services, and boosts operational efficiency. Thus, the interplay between innovation and digital transformation is vital for SMEs to achieve resilience and sustained performance.

In Section C, the researcher investigates business performance in SMEs as the dependent variable, focusing on how it is influenced by the independent variables which are digitalization and innovation. Business performance, typically measured through profitability, market share, and operational efficiency, benefits significantly from adopting digital technologies and fostering innovation. Digitalization enhances decision-making, optimizes processes, and improves customer engagement (Bharadwaj et al., 2013), while innovation drives adaptability and competitive advantage (Tidd & Bessant, 2020).

According to Saunders et al. (2019), the Likert-style rating is commonly employed for rating questions that ask respondents to indicate their level of agreement or disagreement with a proposition. This questionnaire used a 6-point Likert scale: 1 for "strongly disagree," 2 for " fairly disagree," 3 for " disagree," 4 for " strongly agree," 5 for " fairly agree," and 6 for "agree." This size allowed for more nuanced replies and provided a thorough examination of the factors impacting digitalization and innovation in SMEs.

Section	Content
A	**Respondent Profile/ Background** • Age • Gender • Industry Sector • Year in Operation
B	**Assessment of Independent Variable** • To what extent does digital marketing contribute to business performance. • To what extent do digital customer support divisions contribute to business performance. • How innovation in manufacturing contributes to business performance. • How innovation in products and services contributes to business performance.
C	**Assessment of Independent Variable** • Business Performance in Small Medium Enterprises (SMEs)

Table 3.4: Questionnaire Design

Strongly Disagree	Fairly Disagree	Disagree	Strongly Agree	Fairly Agree	Agree
1	2	3	4	5	6

Table 3.5: Likert-Scale Survey

3.8.1 VARIABLE FOR QUESTIONNAIRE

Section A: Demographic And Firmographic Information

1. What is your gender?

Male ☐

Female ☐

2. What is your age?

Under 25 ☐

25-34 ☐

35-44 ☐

45-54 ☐

55 above ☐

3. What is the primary industry of your SME?

Manufacturing ☐

Retail ☐

Technology ☐

Services ☐

4. How many years has your SME been in operation?

Less than 1 year ☐

1-4 years ☐

5-10 years ☐

More than 10 years ☐

5. How many employees does your SME have?

1-20 ☐

21-50 ☐

51-100 ☐

More than 100 ☐

Section B: Assessment Of Independent Variables

Construct		Item Code	Measurement	Reference
Digitalization	Digital Marketing	B1	Our SME has seen an increase in sales revenue as a direct result of digital marketing efforts.	Md Nafis Fuad et al. (2024)
		B2	Digital marketing has significantly improved our SME's brand visibility and recognition.	Avishek Nath et al. (2024)
		B3	Customer engagement and interaction with our SME have increased due to digital marketing campaigns.	Chatterjee et al., (2021) Jayawardena et al., (2022)
		B4	The return on investment (ROI) from our digital marketing activities has been positive for our SME.	Gutierrez-Leefmans et al., (2016) Lavuri et al., (2024) Li et al., (2022)

		B5	Digital marketing has helped our SME reach new customer segments or markets.	Khawaja Mustaqeem et al., (2024)
	Digital Customer Support Divisions	C1	The implementation of digital customer support has led to faster response times for customer inquiries in our SME.	Ronewa Nethanani et al., (2024)
		C2	Our SME has experienced higher customer satisfaction levels due to digital customer support services.	Otávio José de Oliveira et. al., (2023)
		C3	Digital customer support has improved the efficiency and productivity of our customer service operations.	Shankar Nath Adhikari et. al., (2024)
		C4	The use of digital customer support tools has contributed to reducing operational costs in our SME.	Ana Carolina Costa et. al., (2023)

		C5	Digital customer support has played a significant role in retaining customers and reducing the churn in our SME.	Sanaa Jasim Mohammed (2024)
Innovation	Innovative Manufacturing	D1	Our SME's innovations in manufacturing processes have led to a reduction in production costs.	Eurostat (2005)
		D2	Manufacturing innovations have resulted in improved product quality in our SME.	Daniel Quaye (2019)
		D3	The adoption of new manufacturing technologies has increased our SME's production efficiency.	Joshua Simuka (2024)
		D4	Innovations in manufacturing have enabled our SME to reduce time-to-market for new products.	Isaac Mensah (2019)

		D5	Our SME has gained a competitive advantage in the market due to manufacturing innovations.	Onwumere and Ozioma-Eleodinmuo, (2015)
	Innovative Product and Services	E1	The introduction of new products or services has significantly increased our SME's revenue.	A S Petrova, (2021)
		E2	Innovations in our product or service offerings have led to higher customer satisfaction.	Rangga Aji Saputra Aji, (2024)
		E3	Our SME has gained a competitive advantage in the market through innovative products or services.	Adriana Rodriguez Casamayor, (2022)
		E4	The development of new products or services has helped our SME attract new customers.	Yong Dirgiatmo, (2024)

		E5	Innovative products or services have contributed to the overall growth and expansion of our SME.	Kikelomo Fadilat Anjorin, (2024)
Business Performance of Small Medium Enterprises (Smes)		F1	Our SME has experienced consistent revenue growth over the past three years.	Md. Tariqul Islam, (2024), Jeetesh Kumar et. al., (2024)
		F2	The profitability of our SME has improved significantly over the last few years.	Idieucharist Joe Jomomoh, (2018), Dare Joseph Enimola et. al., (2018)
		F3	Customer satisfaction has increased because of our business strategies.	Yolanda Jordaan, (2022), Jacobus Johannes Badenhorst, (2022)
		F4	Our SME has successfully expanded its market share within our industry.	Avishek Nath et al. (2024)

		F5	Employee productivity and efficiency have contributed positively to the overall performance of our SME.	Zelia Serrasqueiro, (2023), Beatriz Pinto et. al., (2023)
		F6	Our SME has successfully reduced operational costs while maintaining or improving quality.	Eurostat (2005)

Table 3.6: Variable for Questionnaire

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3.9   DATA ANALYSIS

Data analysis involves cleaning, transforming, and structuring data to uncover valuable insights that support business decision-making. Its goal is to gain insights from data to inform decision-making. According to Saunders et al. (2019), the data analysis technique allows for the execution of unplanned analyses in reaction to discoveries. This defines the usual practice of looking for novel associations in data that the study was not originally planned to examine.

Computers also help to simplify and speed up this procedure. In this case, the Statistical Package for the Social Sciences (SPSS) software was used to analyze survey data on the factors of digitalization and innovation in Small and Medium Enterprises (SMEs) that impact the business performance of digitalization. SPSS can effectively manage huge quantities of data, simplifying data gathering, tabulation, and quantitative analysis.

In addition, multiple regression analysis was utilized to examine the relationship between independent and dependent variables. The study applied this method to explore the link between digitization and innovation within SMEs.

The Pearson Correlation Coefficient was applied to evaluate the external factors influencing digitalization and innovation in SMEs, which affect the business performance related to digitalization. According to Saunders et al. (2019), the correlation coefficient measures the degree of the linear relationship between two numerical or ranked variables.

3.9.1 STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES (SPSS)

Following data collection, the researcher conducted the study using the Statistical Package for the Social Sciences (SPSS) software version 29. SPSS allows academics to conduct deep statistical analyses on obtained data to achieve research goals. Furthermore, SPSS was utilized to assess the relationships within the suggested model using the study's assumptions. This program organizes complicated data into detailed pie charts or graphs to help in the analysis of questionnaire results.

SPSS was used to analyze survey data on the aspects of digitalization and innovation in Malacca SMEs that impact the business performance of digitalization. Pie charts and graphical representations were designed to efficiently organize and communicate the acquired data.
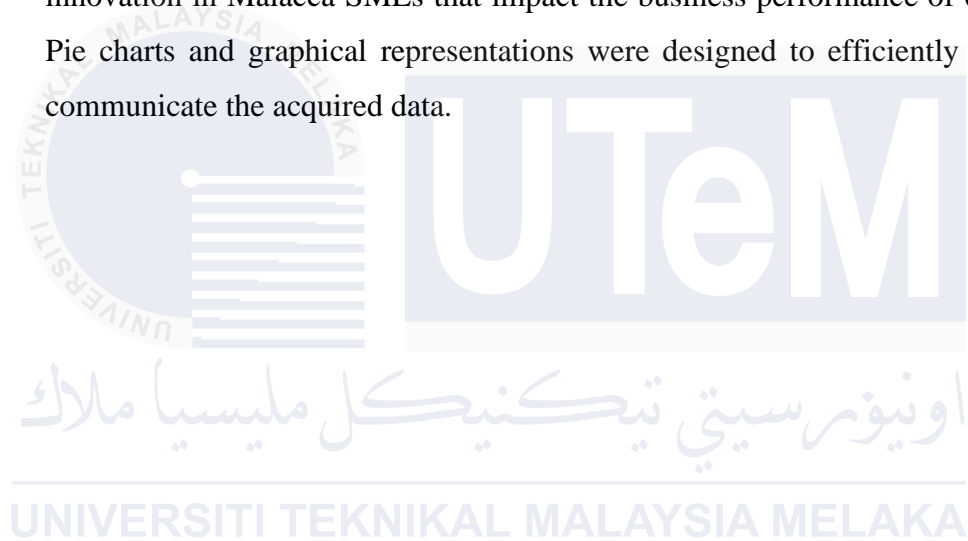
3.9.2 MULTIPLE REGRESSION ANALYSIS

Following the correlation analysis, the next stage was multiple regression analysis. This method is employed when a researcher seeks to predict the value of one variable based on another. The variable being predicted is referred to as the dependent or outcome variable. Regression analysis produces an equation that connects the independent variable (X) with the dependent variable (Y). The resulting regression equation consists of both a regression coefficient and a constant term. The following equation depicts the general structure of the multiple regression model utilized in this study.

$$Y = b0 + b1X1 + b2X2 + b3X3 + b4X4$$

Were,

Y = The business performance in SMEs

b0 = Regression Constant

X1 = The factors influencing the business performance in SMEs

(Digital Marketing)

X2 = The factors influencing the business performance in SMEs

(Customer Support Divisions)

X3 = The factors influencing the business performance in SMEs

(Manufacturing)

X4 = The factors influencing the business performance in SMEs

(Product and Services)

b1, b2, b3, b4 = Regression Coefficient

3.9.3 PEARSON'S CORRELATION COEFFICIENT

Pearson's correlation coefficient was used to examine the strong relationship between the independent and dependent variables in the data from respondents. Saunders et al. (2019) describe the correlation coefficient as a measure of the strength of the linear relationship between two ranked or numerical variables. The sample correlation coefficient (r) is used to estimate the correlation in the population. This study aims to identify a positive correlation.

According to Saunders et al. (2019), the correlation coefficient, r, can vary between +1 and -1. A value of +1 signifies a perfect positive correlation, meaning both variables increase together. On the other hand, a value of -1 indicates a perfect negative correlation, where an increase in one variable results in a decrease in the other.

Coefficient Range	Strength
$0.8 \leq r \leq 1.0$	Perfect Positive Correlation
$0.6 \leq r \leq 0.79$	Positive Correlation
$0.4 \leq r \leq 0.59$	Moderate Correlation
$0.2 \leq r \leq 0.39$	Negative Correlation
$0 < r \leq 0.19$	Perfect Negative Correlation

Table 3.7: Pearson's Correlation Coefficient Scale

3.10   TIME HORIZON

A time horizon, or planning horizon, refers to a specific point in the future at which activities will be evaluated or deemed finished. According to Saunders et al. (2019), a study in time horizon might be either cross-sectional, capturing a snapshot at a particular moment in time, or longitudinal, using a 'diary' approach over an extended period. The selection of a study approach and methodologies is directly linked to the identification of a suitable time horizon. Given the time limits of this study, the researcher chose a cross-sectional inquiry, which does not need a lengthy timeframe. The researcher performed the survey and gathered data during a brief time, from October to January. Data collection was performed as soon as possible to allow for speedy analysis and avoid problems during the study process.

3.11   SUMMARY

This chapter describes the researcher's technique for acquiring data and information about the variables. The approach employed to answer the research questions is analyzed. This study was carried out utilizing an explanatory research design and a quantitative technique. The study utilized both primary and secondary data sources. As part of the study design, a survey approach was used to gather responses. Within a cross-sectional span, the researcher designed questionnaires, sampled them, and conducted pilot tests. The data was analyzed using the Statistical Package for the Social Sciences (SPSS).

CHAPTER 4

RESULT AND DISCUSSION

4.0 INTRODUCTION

This chapter presents the results of a survey on how digitalization and innovation influence business performance in SMEs in Melaka. Data from 246 respondents was analyzed using SPSS to identify trends and patterns. The questionnaire included three parts which is demographic information, assessment of digitalization and innovation, and evaluation of business performance. The study highlights the importance of digital transformation and innovation in enhancing SME efficiency, customer experience, and competitiveness. Findings provide insights into how SMEs in Melaka integrate these elements into their operations and their impact on business performance, offering practical recommendations for stakeholders to support sustainable growth.

4.1 DESCRIPTIVE STATISTICS ANALYSIS

All variables have been validated and are suitable for use in the questionnaire, allowing the researcher to proceed with collecting data from the remaining 246 respondents. Descriptive analysis was used to organize and summarize the quantitative survey data. Measures of frequency and percentage were applied to describe respondent characteristics. Demographic data is presented in charts for easier and more visual interpretation, while tables display all respondent data, sorted by each variable.

4.1.1 RESPONDENT'S DEMOGRAPHIC PROFILE

The general information of respondents provides insights into their demographic profiles, which include key details such as gender, age, the primary industry of their SME, years of operation, and the number of employees in their SME. This demographic data forms the foundation for understanding the sample of 246 respondents collected for this study. By examining these profiles, the researcher aims to establish a connection between respondent characteristics and business performance in SMEs. Analyzing factors such as industry type, operational tenure, and workforce size can reveal patterns and trends that influence business outcomes, offering valuable insights into the relationship between demographic variables and the performance of SMEs.

4.1.1.1 PROFILING OF GENDER
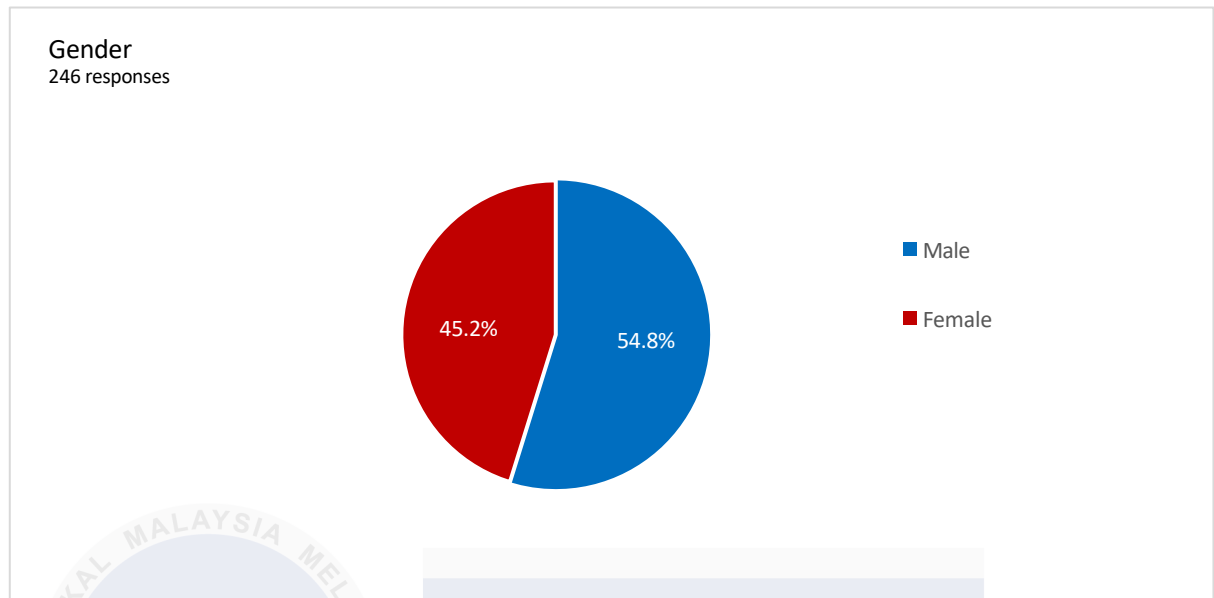
Figure 4.0: Profiling of Gender

Figure 4.0 above presents the gender distribution of the 246 respondents surveyed. The findings indicate that 54.8% (n=135) of the respondents were male, while 45.2% (n=111) were female. This demographic breakdown provides a balanced representation of gender within the study sample.

4.1.1.2 PROFILING OF AGE
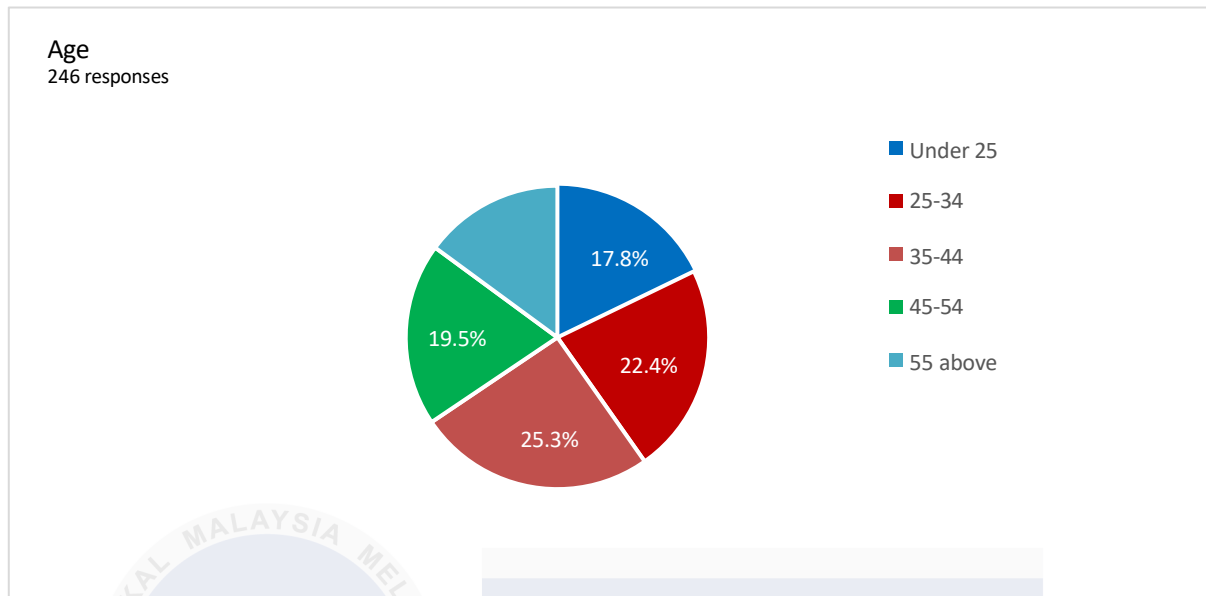
Figure 4.1: Profiling of Age

The age distribution of respondents is shown in Figure 4.1 above, divided into five categories: under 25 years, 25-34 years, 35-44 years, 45-54 years, and 55 years and older. The largest group of respondents was aged 35-44 years, comprising 25.3% (n=62) of the total 246 respondents. This was followed by the 25-34 age group, which accounted for 22.4% (n=55) of the respondents. The 45-54 age group represented 19.5% (n=48), while 17.8% (n=44) of respondents were under 25 years old. The smallest group was respondents aged 55 years and above, making up only 14.9% (n=37) of the total. This distribution highlights the diversity in age among the study participants.

4.1.1.3 PROFILING THE PRIMARY INDUSTRY OF YOUR SME
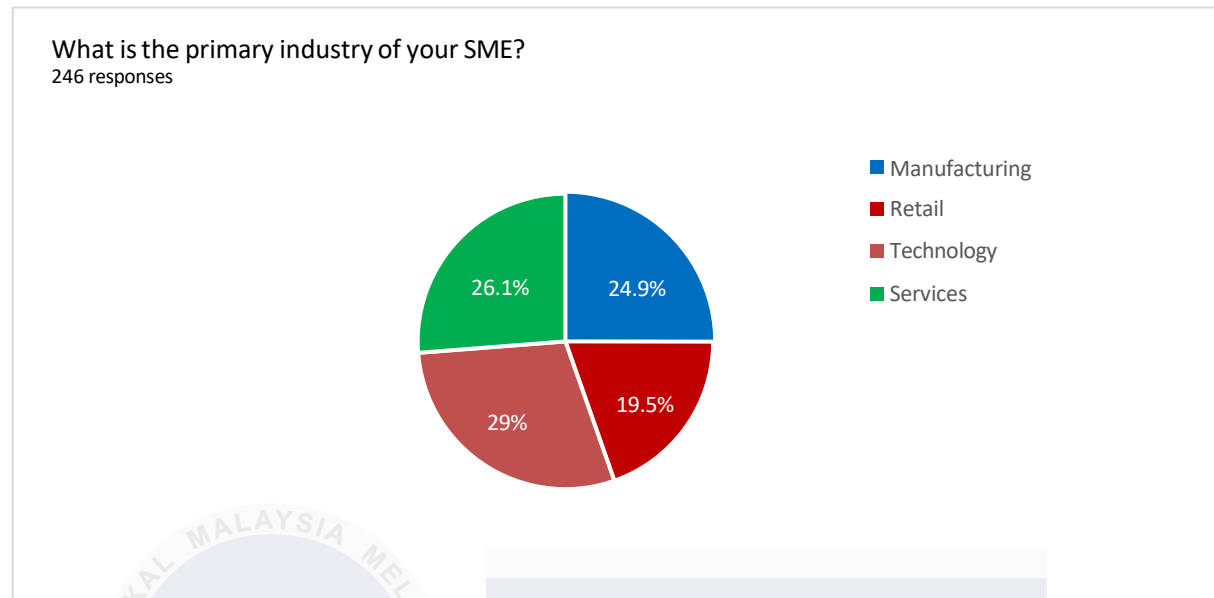
Figure 4.2: Profiling the Primary Industry of Your SME

Figure 4.2 illustrates the primary industry of SMEs represented by the respondents in this survey. According to the pie chart, 29% (n=71) of respondents were from the technology industry, while 26.6% (n=65) were from the services sector. SMEs in manufacturing and retail accounted for 24.9% (n=61) and 19.5% (n=48) of the respondents, respectively. This distribution highlights the diverse industry representation among the survey participants.

4.1.1.4 PROFILING OPERATIONAL YEARS OF SMES
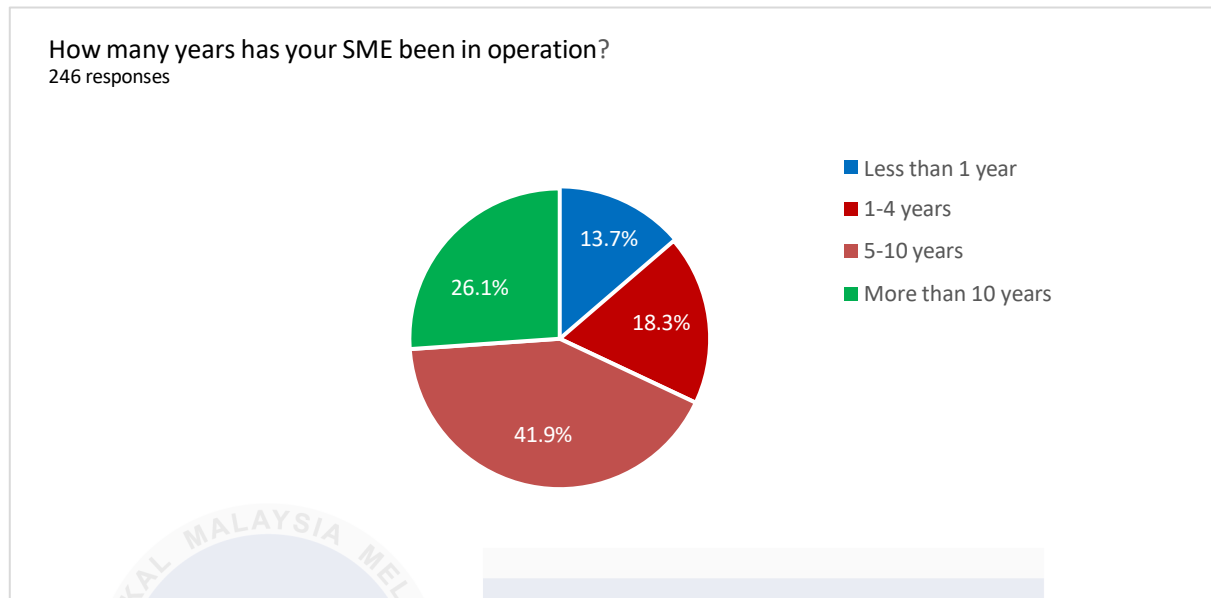
Figure 4.3: Profiling the Operational Years of SMEs

Figure 4.3 illustrates the operational years of SMEs represented by 246 respondents. The findings reveal that most respondents, 41.9% (n=103), were SMEs operating for 5-10 years. This was followed by 26.1% (n=64) of SMEs that have been in operation for more than 10 years. Additionally, 18.3% (n=45) of respondents were SMEs operating for 1-4 years, while 13.7% (n=34) were SMEs with less than 1 year of operation. This distribution highlights the varied stages of business maturity among the surveyed SMEs.

4.1.1.5 PROFILING THE WORKFORCE SIZE OF SMES

How many employees does your SME have?
246 responses
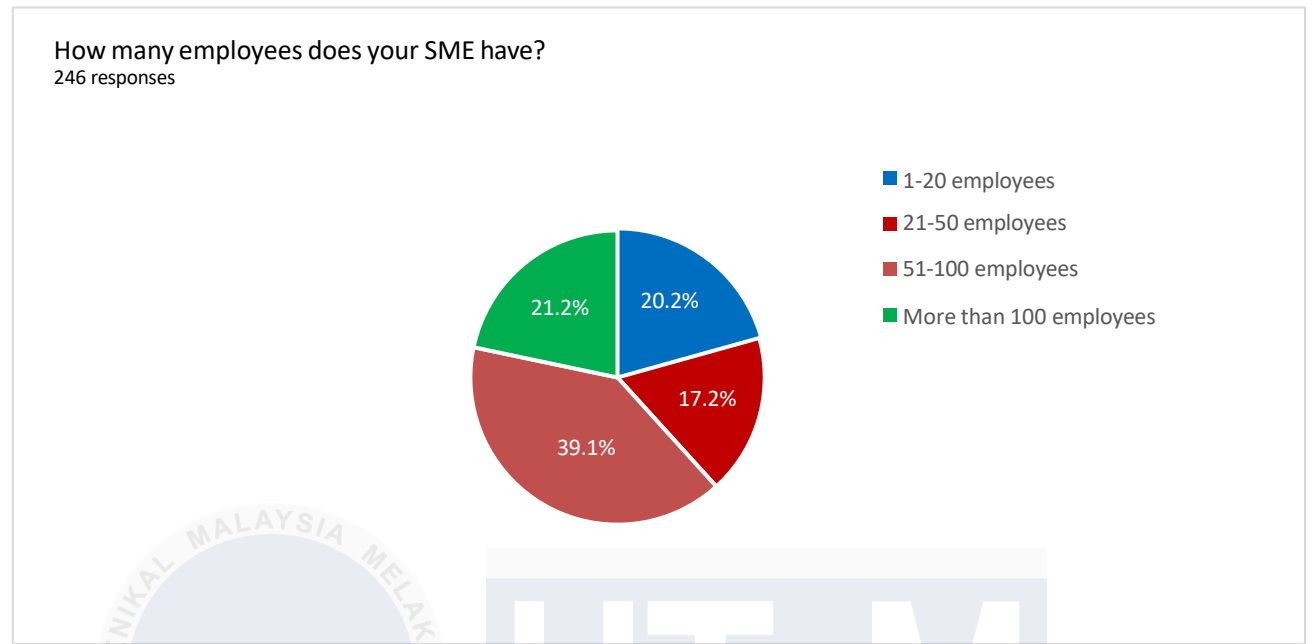
Table 4.4: Profiling the Workforce Size of SMEs

Based on Figure 4.4, the distribution of SMEs by workforce size is shown. The findings reveal that the largest group of respondents, 39.1% (n=96), were SMEs with 51-100 employees. This was followed by 23.5% (n=58) of respondents from SMEs with more than 100 employees. SMEs with 1-20 employees accounted for 20.2% (n=50) of the respondents, while the smallest group, 17.2% (n=42), were SMEs with 21-50 employees. This data highlights the diversity in workforce sizes among the surveyed SMEs.

4.2 MEAN SCORE ANALYSIS FOR VARIABLES

The mean score analysis is employed to examine and interpret data related to the characteristics of specific issues in this study. The analysis focuses on key variables, including digital marketing (B), digital customer support divisions (C), innovative manufacturing (D), innovative products and services (E), and business performance of SMEs (F). These variables are explored within the framework of the study's theme, "Digitalization and Innovation in SMEs: Influences on business performance in SMEs." Statistical methods, including minimum, maximum, mean, and standard deviation, are used to analyze the data and offer a thorough interpretation of the results. Additionally, a 6-point Likert Scale is utilized to evaluate a total of 26 items related to the research, offering valuable insights into how digitalization and innovation impact the performance and competitiveness of SMEs.

4.2.1 Digital Marketing (Independent Variable)

Measurement Item

B1	Our SME has seen an increase in sales revenue as a direct result of digital marketing efforts.
B2	Digital marketing has significantly improved our SME's brand visibility and recognition.
B3	Customer engagement and interaction with our SME have increased due to digital marketing campaigns.
B4	The return on investment (ROI) from our digital marketing activities has been positive for our SME.
B5	Digital marketing has helped our SME reach new customer segments or markets.

Descriptive Statistics						
	N	Range	Minimum	Maximum	Mean	Std. Deviation
B1	246	5	1	6	4.66	1.016
B2	246	5	1	6	4.92	1.081
B3	246	5	1	6	4.89	1.038
B4	246	5	1	6	5.00	1.071
B5	246	5	1	6	4.85	.991
Valid N (listwise)	246					

Table 4.5**:** Descriptive Statistics for Digital Marketing

The descriptive statistics for digital marketing provide insights into respondents' perceptions across five items (B1 to B5), based on a 6-point Likert Scale. All 246 responses were valid and analyzed. The results indicate that B4 has the highest mean score (5.00, SD = 1.071), suggesting strong agreement or positive perception for this item. This is followed closely by B2 (Mean = 4.92, SD = 1.081), B3 (Mean = 4.89, SD = 1.038), and B5 (Mean = 4.85, SD = 0.991). B1 shows the lowest mean score (4.66, SD = 1.016), though it still reflects a positive sentiment overall.

The range for all items is 5, with minimum and maximum values of 1 and 6, respectively, indicating a consistent scale of responses. The standard deviations suggest moderate variability across the items, highlighting diverse respondent perspectives on digital marketing. Overall, the findings demonstrate a generally favourable view of digital marketing among SMEs, with room for further exploration into the specific drivers behind the highest-rated and lowest-rated items.

4.2.2 Digital Customer Support Divisions (Independent Variable)

Measurement Item

C1	The implementation of digital customer support has led to faster response times for customer inquiries in our SME.
C2	Our SME has experienced higher customer satisfaction levels due to digital customer support services.
C3	Digital customer support has improved the efficiency and productivity of our customer service operations.
C4	The use of digital customer support tools has contributed to reducing operational costs in our SME.
C5	Digital customer support has played a significant role in retaining customers and reducing churn in our SME.

Descriptive Statistics						
	N	Range	Minimum	Maximum	Mean	Std. Deviation
C1	246	5	1	6	4.97	1.082
C2	246	5	1	6	5.00	1.016
C3	246	5	1	6	4.94	1.069
C4	246	5	1	6	4.97	1.030
C5	246	5	1	6	4.85	1.047
Valid N (listwise)	246					

Table 4.6: Descriptive Statistics for Digital Customer Support Divisions

The descriptive statistics for digital customer support divisions highlight the respondents' perceptions of five items (C1 to C5) evaluated on a 6-point Likert Scale. All 246 responses were valid for analysis. Among the items, C2 recorded the highest mean score (5.00, SD = 1.016), indicating a strong positive perception or agreement with this aspect of digital customer support divisions. Following closely are C1 and C4, both with a mean of 4.97 (SD = 1.082 and 1.030, respectively), reflecting similarly favorable views. C3 achieved a slightly lower mean (4.94, SD = 1.069), while C5 scored the lowest mean (4.85, SD = 1.047), though it still reflects a positive sentiment.

The range for all items is consistent at 5, with minimum and maximum scores of 1 and 6, signifying a uniform scale of responses. The standard deviation values indicate moderate variability, suggesting a diversity of perspectives among respondents. Overall, the findings indicate a generally positive perception of digital customer support divisions, with C2 standing out as the most highly rated. These results underline the significance of customer support in digitalization efforts and its perceived contribution to SME performance.

4.2.3 Innovative Manufacturing (Independent Variable)

Measurement Item

D1	Our SME's innovations in manufacturing processes have led to a reduction in production costs.
D2	Manufacturing innovations have resulted in improved product quality in our SME.
D3	The adoption of new manufacturing technologies has increased our SME's production efficiency.
D4	Innovations in manufacturing have enabled our SME to reduce time-to-market for new products.
D5	Our SME has gained a competitive advantage in the market due to manufacturing innovations.

Descriptive Statistics						
	N	Range	Minimum	Maximum	Mean	Std. Deviation
D1	246	5	1	6	4.83	1.001
D2	246	5	1	6	4.91	1.025
D3	246	5	1	6	5.00	1.071
D4	246	5	1	6	4.80	1.011
D5	246	5	1	6	5.00	.988
Valid N (listwise)	246					

Table 4.7: Descriptive Statistics for Innovative Manufacturing

The descriptive statistics for innovative manufacturing provide insights into respondents' perceptions across five items (D1 to D5) assessed on a 6-point Likert Scale. All 246 responses were valid for analysis. The results show that D3 and D5 have the highest mean scores, both at 5.00, indicating a strong positive perception of these aspects of innovative manufacturing. The standard deviations for these items are 1.071 and 0.988, respectively, suggesting a slight difference in the variability of responses. D2 follows with a mean score of 4.91 (SD = 1.025), reflecting similarly favorable views. D1 and D4 have slightly lower mean scores at 4.83 (SD = 1.001) and 4.80 (SD = 1.011), though they still indicate positive perceptions overall.

All items exhibit a consistent range of 5, with minimum and maximum values of 1 and 6, showing a uniform scale of responses. The standard deviations for all items suggest moderate variability, indicating diverse respondent opinions. In summary, the findings highlight a generally favorable perception of innovative manufacturing among the respondents, with D3 and D5 being particularly well regarded. This underscores the importance of specific innovative manufacturing practices in driving SME performance.

4.2.4 Innovative Products and Services (Independent Variable)

Measurement Item

E1	The introduction of new products or services has significantly increased our SME's revenue.
E2	Innovations in our product or service offerings have led to higher customer satisfaction.
E3	Our SME has gained a competitive advantage in the market through innovative products or services.
E4	The development of new products or services has helped our SME attract new customers.
E5	Innovative products or services have contributed to the overall growth and expansion of our SME.

Descriptive Statistics						
	N	Range	Minimum	Maximum	Mean	Std. Deviation
E1	246	5	1	6	4.78	1.047
E2	246	5	1	6	4.97	1.000
E3	246	5	1	6	4.91	1.026
E4	246	5	1	6	5.02	1.084
E5	246	5	1	6	5.02	1.002
Valid N (listwise)	246					

Table 4.8: Descriptive Statistics for Innovative Products and Services

The descriptive statistics for innovative products and services provide insights into respondents' perceptions of five items (E1 to E5), evaluated on a 6-point Likert Scale. All 246 responses were valid for analysis. The results show that E4 and E5 have the highest mean scores, both at 5.02, indicating a strong positive perception of these aspects of innovative products and services. The standard deviations for these items are 1.084 and 1.002, respectively, reflecting some variation in responses. E2 and E3 follow with mean scores of 4.97 (SD = 1.000) and 4.91 (SD = 1.026), both indicating favorable views. E1 has the lowest mean score at 4.78 (SD = 1.047), though it remains within the range of positive sentiment.

The range consistently 5, with minimum and maximum scores of 1 and 6, reflecting uniform scaling. The standard deviations suggest moderate variability in respondents' perceptions, indicating a range of opinions. Overall, the findings reveal that respondents generally view innovative products and services positively, with E4 and E5 being the most highly regarded. This highlights the significance of innovation in product and service offerings in enhancing SME performance.

4.2.5 Business Performance of SMEs (Dependent Variable)

Measurement Item

F1	Our SME has experienced consistent revenue growth over the past three years.
F2	The profitability of our SME has improved significantly over the last few years.
F3	Customer satisfaction has increased because of our business strategies.
F4	Our SME has successfully expanded its market share within our industry.
F5	Employee productivity and efficiency have contributed positively to the overall performance of our SME.
F6	Our SME has successfully reduced operational costs while maintaining or improving quality.

Descriptive Statistics						
	N	Range	Minimum	Maximum	Mean	Std. Deviation
F1	246	5	1	6	5.00	1.016
F2	246	5	1	6	5.05	1.015
F3	246	5	1	6	5.08	1.054
F4	246	5	1	6	5.17	1.058
F5	246	5	1	6	5.20	.980
F6	246	5	1	6	4.95	1.043
Valid N (listwise)	246					

Table 4.9: Descriptive Statistics for Business Performance of SMEs

The descriptive statistics for the business performance of SMEs provide an overview of respondents' perceptions across six items (F1 to F6) assessed on a 6-point Likert Scale. All 246 responses were valid for analysis. The results indicate that F5 received the highest mean score of 5.20 (SD = 0.980), reflecting a strong positive perception of this aspect of SME performance. This is closely followed by F4 (Mean = 5.17, SD = 1.058) and F3 (Mean = 5.08, SD = 1.054), both indicating similarly favorable views. F2 and F1 also scored high, with means of 5.05 (SD = 1.015) and 5.00 (SD = 1.016), respectively, suggesting overall positive sentiment. F6 had the lowest mean at 4.95 (SD = 1.043), though it remains well within the positive range.

All items have a consistent range of 5, with minimum and maximum values of 1 and 6, indicating uniform scaling. The standard deviation values reflect moderate variability, showing some diversity in respondent opinions. In summary, the findings demonstrate that respondents perceive the business performance of SMEs positively, with F5 and F4 emerging as the most highly rated items. This emphasizes the critical role of specific performance aspects in contributing to SME success.

4.3 RELIABILITY ANALYSIS AND VALIDITY TEST

Reliability Statistics		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of Items**
.968	.968	26

Table 4.10: Reliability Analysis of All Items

Table 4.10 presents a summary of the reliability analysis for all independent and dependent variables in this study, based on data from 246 respondents across 26 survey items. The Cronbach's Alpha value of 0.968 greatly surpasses the acceptable threshold of 0.70, indicating outstanding internal consistency. Malhotra (2012) notes that a Cronbach's Alpha value below 0.60 is considered low and unreliable, while a value of 0.70 or higher indicates strong reliability and is regarded as excellent. The exceptionally high reliability score in this study demonstrates that the survey items are consistent and robust in measuring the intended constructs.

In conclusion, the results confirm that the data collected is highly reliable, ensuring the accuracy and credibility of subsequent analyses. This robust reliability provides a strong foundation for exploring the impact of digitalization and innovation on SME performance.

	Variables	Cronbach's Alpha	No. of Items	Interpretation of Reliability Based on Cronbach's Alpha.
Independent Variables	Digital Marketing	.911	5	Excellent
Independent Variables	Digital Customer Support Divisions	.913	5	Excellent
Independent Variables	Innovative Manufacturing	.915	5	Excellent
Independent Variables	Innovative Products and Services	.888	5	Good
Dependent Variable	Business Performance of SMEs	.917	6	Excellent

Table 4.11: Interpretation of Reliability Based on Cronbach's Alpha.

Table 4.11 provides an interpretation of the reliability of the survey items for both independent and dependent variables in this study, based on their respective Cronbach's Alpha values. A total of 26 items were analyzed across five variables, with all results demonstrating strong reliability. Digital marketing achieved Cronbach's Alpha of 0.911, categorized as excellent reliability. Similarly, digital customer support divisions and innovative manufacturing scored 0.913 and 0.915, respectively, both of which are interpreted as excellent. The variable innovative products and services had a slightly lower Cronbach's Alpha of 0.888 but is still classified as good, reflecting strong internal consistency. Finally, the business performance of SMEs scored the highest reliability at 0.917, reinforcing its excellent categorization.

The findings indicate that the survey items for each variable show strong consistency and reliability in assessing their respective constructs. This further reinforces the reliability of the data collection process, ensuring the credibility and precision of the subsequent analyses concerning the impact of digitalization and innovation on SME performance.

4.4 PEARSON CORRELATION ANALYSIS

Pearson correlation analysis is a statistical method employed to evaluate the relationship between a dependent variable and an independent variable. In this study, the technique is used to explore the relationship between the dependent variable, SME business performance, and the independent variables such as digital marketing, digital customer support divisions, innovative manufacturing, and innovative products and services.

This approach also evaluates both the strength and direction of the relationships between variables. The correlation coefficient ranges from +1 to -1, with values closer to +1 or -1 indicating a stronger relationship, where +1 signifies a perfect positive correlation and -1 indicates a perfect negative correlation. Conversely, a value near 0 implies a weak or insignificant relationship. In conclusion, Pearson correlation analysis provides useful insights into the strength and effectiveness of the links between digitalization, innovation, and SME performance, aiding in the identification of the key factors that most significantly affect business success.

Correlations		IV1	IV2	IV3	IV4	DV
Digital Marketing IV1	Pearson Correlation	1	.787**	.779**	.692**	.552**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001
	N	246	246	246	246	246
Digital Customer Support Divisions IV2	Pearson Correlation	.787**	1	.725**	.624**	.657**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001
	N	246	246	246	246	246
Innovative Manufacturing IV3	Pearson Correlation	.779**	.725**	1	.850**	.634**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001
	N	246	246	246	246	246
Innovative Products and Services IV4	Pearson Correlation	.692**	.624**	.850**	1	.782**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001
	N	246	246	246	246	246
Business Performance of SMEs DV	Pearson Correlation	.552**	.657**	.634**	.782**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	
	N	246	246	246	246	246
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 4.12: Pearson Correlation Coefficient for Each Variable

Table 4.12 presents the Pearson correlation coefficients between the independent variables (IV1: Digital Marketing, IV2: Digital Customer Support Divisions, IV3: Innovative Manufacturing, IV4: Innovative Products and Services) and the dependent variable (DV: Business Performance of SMEs). All correlations are statistically significant at the 0.01 level (2-tailed), demonstrating robust and meaningful relationships between the variables.

Digital marketing (IV1) shows a moderate positive correlation with business performance (DV) ($r = .552$, $p < .001$), suggesting that digital marketing practices have a considerable impact on SME performance. Similarly, digital customer support divisions (IV2) exhibit a stronger positive correlation with the dependent variable ($r = .657$, $p < .001$), highlighting the importance of customer support systems in driving business performance.

Innovative manufacturing (IV3) is positively correlated with business performance ($r = .634$, $p < .001$), reflecting the role of manufacturing innovation in enhancing SME success. The strongest correlation with business performance is observed in innovative products and services (IV4) ($r = .782$, $p < .001$), indicating that innovation in offerings significantly contributes to SME performance.

Additionally, the interrelationships among the independent variables demonstrate strong positive correlations, with the highest being between innovative manufacturing (IV3) and innovative products and services (IV4) ($r = .850$, $p < .001$). This suggests a close connection between these two aspects of innovation.

In conclusion, the results of the Pearson correlation analysis highlight the strong and significant relationships between independent variables and SME performance. Among these, innovative products and services emerge as the most influential factor, followed by digital customer support divisions, innovative manufacturing, and digital marketing. These findings emphasize the critical role of digitalization and innovation in driving SME success.

4.5 INFERENTIAL STATISTICS

Inferential statistics is a method used to analyze data collected from a random sample of the population to generalize and draw conclusions about the entire population. The results derived from inferential statistics are crucial as they help determine whether the variations observed in the sample data are significant or if they could have occurred by chance. This method is especially valuable when a complete evaluation of the population is not feasible, allowing researchers to make informed inferences from sample data.

In this study, inferential statistics are utilized to examine the relationships between the independent and dependent variables in alignment with the research objectives. Regression analysis and Pearson's correlation analysis are employed to test hypotheses and evaluate the strength and direction of relationships between variables. All data analysis is conducted using SPSS software, ensuring accurate and reliable results.

Through these statistical methods, the researcher can derive meaningful insights from the sample data, making it possible to draw conclusions that are applicable to the broader population of SMEs. The use of inferential statistics thus plays a critical role in validating the research findings and guiding the overall analysis of the impact of digitalization and innovation on business performance in SMEs.

4.5.1 MULTIPLE REGRESSION ANALYSIS

Multiple regression analysis is a statistical technique used to predict the value of a dependent variable by taking into account the values of two or more independent variables. This method is especially effective in examining the relationship between the dependent and independent variables, as well as understanding how various factors together impact the outcome.

In this study, multiple regression analysis is applied to explore the correlations between the independent variables which digital marketing, digital customer support divisions, innovative manufacturing, and innovative products and services and the dependent variable, business performance of SMEs. By examining these relationships, multiple regression helps to determine the individual and combined effects of each independent variable on SME business performance.

The outcomes of the regression analysis will be shown as an equation, providing a clearer insight into how each factor impacts the overall performance of SMEs. This technique provides valuable insights into the influence of digitalization and innovation on business outcomes, helping to inform decision-making and strategy development within SMEs.

4.5.2 MODEL SUMMARY

<table>
<tr><th colspan="10">Model Summary</th></tr>
<tr><th rowspan="3">Model</th><th rowspan="3">R</th><th rowspan="3">R Square</th><th rowspan="3">Adjusted R Square</th><th rowspan="3">Std. Error of the Estimate</th><th colspan="5">Change Statistics</th></tr>
<tr><th rowspan="2">R Square Change</th><th rowspan="2">F Change</th><th rowspan="2">df1</th><th rowspan="2">df2</th><th rowspan="2">Sig. F Change</th></tr>
<tr></tr>
<tr><td>1</td><td>.838[a]</td><td>.703</td><td>.698</td><td>.47478</td><td>.703</td><td>142.543</td><td>4</td><td>241</td><td><.001</td></tr>
<tr><td colspan="10">a. Predictors: (Constant), IV4, IV2, IV1, IV3</td></tr>
</table>

Table 4.13: Model Summary of Multiple Regression Analysis

Table 4.13 provides a summary of the multiple regression analysis conducted to examine the relationship between independent variables which is digital marketing, digital customer support divisions, innovative manufacturing, and innovative products and services and the dependent variable is business performance of SMEs.

The R coefficient value of 0.838 demonstrates a strong positive correlation between the independent and dependent variables. With an R Square value of 0.703, it reveals that 70.3% of the variation in SME business performance is accounted for by the combined impact of the four independent variables. This suggests a strong fit of the model, emphasizing the considerable effect the independent variables have on the dependent variable.

The Adjusted R Square value of 0.698 accounts for the number of predictors in the model, indicating that the model's explanatory power remains robust, even when adjusted for sample size and the number of variables. The Standard Error of the Estimate, which is 0.47478, represents the average discrepancy between the observed values and the values predicted by the regression line.

The Change Statistics show that the R Square Change is 0.703, further confirming that the addition of the independent variables significantly enhances the model's ability to predict outcomes. The F Change value of 142.543, with degrees of freedom ($df1 = 4$, $df2 = 241$), indicates the model's statistical significance at a p-value of less than 0.001, offering strong evidence that the relationship between the independent and dependent variables is unlikely to be due to random chance.

In conclusion, the results from the model summary highlight the effectiveness of the independent variables in explaining variations in SME business performance, reinforcing the critical role of digitalization and innovation in driving business success.

4.5.3 ANOVA ANALYSIS

The analysis using ANOVA (Analysis of Variance) is conducted to calculate test statistics, known as the F-Ratio, which helps determine the probability (P-value) under the assumption of the null hypothesis. In this study, a significance level of $P < 0.05$ is used as the threshold for identifying statistically significant results.

The F-value plays a key role in the ANOVA test, as it assesses the overall significance of the regression model. A higher F-value suggests that the independent variables, taken together, have a substantial impact on explaining the variation in the dependent variable. Focusing on the F-value is important because it directly indicates the strength and reliability of the relationship between the independent and dependent variables.

By examining the F-value and P-value, researchers can determine if the regression model is successful in predicting the dependent variable. This analysis offers valuable insights into the model's significance and ensures that the observed relationships are not the result of random fluctuations.

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	128.527	4	32.132	142.543	<.001[b]
	Residual	54.326	241	.225		
	Total	182.853	245			
a. Dependent Variable: DV						
b. Predictors: (Constant), IV4, IV2, IV1, IV3						

Table 4.14: ANOVA

Table 4.14 displays the results of the ANOVA test, which assesses the overall significance of the regression model. The results show that the sum of squares for regression is 128.527, with a mean square of 32.132 across 4 degrees of freedom (df). This reflects the amount of variability in the dependent variable (SME business performance) that is explained by the independent variables (digital marketing, digital customer support divisions, innovative manufacturing, and innovative products and services).

The residual sum of squares, representing the unexplained variance, is 54.326, with a mean square of 0.225 distributed across 241 degrees of freedom. The total sum of squares for the model is 182.853, which captures the overall variability in the dataset.

The F-value of 142.543 is highly significant, with a p-value of less than 0.001, confirming the statistical significance of the regression model. This outcome suggests that the independent variables, as a group, have a considerable influence on the dependent variable. The significance of the F-value underscores the model's reliability in explaining the relationship between the predictors and the business performance of SMEs.

4.5.4 COEFFICIENT SUMMARY

The coefficients analysis is a critical step in identifying which predictors significantly contribute to the regression model and the direction of their effects on the dependent variable. Each coefficient represents the strength and nature of the relationship between an independent variable and the dependent variable. For a predictor to be considered statistically significant, its p-value must be below the threshold of 0.05, indicating a meaningful contribution to the model.

Moreover, the variable with the highest coefficient value is identified as the most influential factor in predicting the dependent variable. This analysis allows researchers to prioritize factors that have the greatest impact, enabling better decision-making and targeted strategies. The direction of the effect, whether positive or negative, provides insights into how changes in each predictor influence the dependent variable, contributing to a deeper understanding of the relationships within the model.

Coefficients[a]							
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.817	.193		4.236	<.001		
	IV1	-.194	.063	-.200	-3.053	.003	.286	3.491
	IV2	.474	.057	.495	8.326	<.001	.348	2.873
	IV3	-.312	.078	-.318	-4.014	<.001	.197	5.087
	IV4	.888	.067	.881	13.182	<.001	.276	3.627
a. Dependent Variable: DV								

Table 4.15: Coefficient summary of Multiple Regression

The coefficients table provides insights into the influence of independent variables on the dependent variable, business performance of SMEs. The constant (B=0.817B = 0.817) represents the baseline performance when all predictors are zero. Digital marketing (IV1) shows a negative relationship with business performance (B=−0.194B = -0.194, p=0.003p = 0.003), suggesting potential inefficiencies in its implementation. Digital customer support divisions (IV2) positively impact business performance (B=0.474B = 0.474, p<0.001p < 0.001), indicating the value of strong customer support systems. However, innovative manufacturing (IV3) has a negative effect (B=−0.312B = -0.312, p<0.001p < 0.001), possibly due to operational challenges or costs. Meanwhile, innovative products and services (IV4) exhibit the strongest positive influence (B=0.888B = 0.888, p<0.001p < 0.001), underscoring their critical role in driving SME growth. Overall, the findings emphasize the need to optimize digital marketing and innovative manufacturing efforts while leveraging innovative products and services for improved business performance.

Based on the regression analysis shown in Table 4.15, the coefficients reveal the relationships and contributions of the independent variables (IV1, IV2, IV3, IV4) to the dependent variable (DV). The equation below illustrates the mathematical representation of this relationship:

Regression Equation:

Y= a + b 1 X 1 + b 2 X 2 + b 3 X 3 + b 4 X 4

Where:

- **Y** = Dependent Variable (Business Performance of SMEs)

- **a** = Constant term

- **b1, b2, b3, b4** = Coefficients of the independent variables

- **X1** = Independent Variable (Digital Marketing)

- **X2** = Independent Variable (Digital Customer Support Divisions)

- **X3** = Independent Variable (Innovative Manufacturing)

- **X4** = Independent Variable (Innovative Products and Services)

Substituting the values:

Y (Dependent Variable) = 0.817 (Constant) – 0.194 (Digital Marketing) + 0.474 (Digital Customer Support Divisions) – 0.312 (Innovative Manufacturing) + 0.888 (Innovative Products and Services)

4.6 HYPOTHESIS TESTING

The researcher conducted hypothesis testing to evaluate the proposed hypotheses using regression analysis. A p-value below 0.05 indicates statistical significance, leading to hypothesis acceptance, while a p-value above 0.05 results in rejection. Four hypotheses were tested, with results in Table 4.16 highlighting the significance and impact of each independent variable on the business performance of SMEs.

Independent Variables	Hypothesis	Result
Digital Marketing	H1: Digital marketing negatively influences the business performance of SMEs.	Not Supported
Digital Customer Support Divisions	H2: Digital customer support divisions positively influence the business performance of SMEs.	Supported
Innovative Manufacturing	H3: Innovative manufacturing negatively influences the business performance of SMEs.	Not Supported
Innovative Products and Services	H4: Innovative products and services positively influence the business performance of SMEs.	Supported

Table 4.16: Hypothesis for Independent Variables

The study examined the impact of four independent variables digital marketing, digital customer support divisions, innovative manufacturing, and innovative products and services on the business performance of SMEs. Digital marketing ($\beta = -0.200$, $p = 0.003$) and innovative manufacturing ($\beta = -0.318$, $p < 0.001$) were found to have significant negative effects, possibly due to challenges like poor execution or high costs. In contrast, digital customer support divisions ($\beta = 0.495$, $p < 0.001$) and innovative products and services ($\beta =$

0.881, p < 0.001) had strong positive impacts, highlighting their importance in enhancing customer satisfaction and fostering business growth. These results emphasize the need for SMEs to carefully strategize in digital marketing and manufacturing while leveraging customer support and innovation to improve performance.

4.7 SUMMARY OF HYPOTHESIS TESTING

The hypothesis testing reveals that all variables significantly influence the business performance of SMEs. IV2 (digital customer support divisions) and IV4 (innovative products and services) show a strong positive impact, while IV1 (digital marketing) and IV3 (innovative manufacturing) exhibit a negative effect.

4.8 SUMMARY

In this chapter, the findings and data collected for the study were analyzed comprehensively. The Statistical Package for Social Science (SPSS Version 29) was utilized to process data obtained from 246 respondents through an online questionnaire. Analytical methods such as descriptive analysis, correlation analysis, reliability tests, and multiple regression analysis were employed to interpret the data and achieve the research objectives.

The outcomes revealed significant relationships between independent and dependent variables, confirming all four hypotheses, as their p-values were below 0.05. These results align with the hypotheses outlined in Chapter 3. This chapter successfully highlights the key findings and establishes a strong foundation for further discussion in the next chapter, which will delve into the implications and recommendations derived from these findings.

CHAPTER 5

DISCUSSION, RECOMMENDATIONS, AND CONCLUSION

5.0 INTRODUCTION

This chapter wraps up the findings of the study by summarizing the results obtained from the data analysis in Chapter 4. It offers an in-depth discussion on whether the research objectives were met and revisits the research questions posed earlier. Additionally, the chapter examines the acceptance or rejection of the proposed hypotheses based on the outcomes of the analysis.

The limitations encountered during the study are outlined, along with practical recommendations and suggestions for future research. Lastly, the chapter highlights the significant implications of the study, offering insights that can guide further exploration in this field.

5.1 SUMMARY OF FINDINGS

The summary of findings is organized to align with the research objectives, offering a concise overview of the key insights and results derived from the study. Each objective is systematically addressed, highlighting the critical outcomes and their implications for the research.

5.1.1 Research Objective 1: To evaluate the extent to which digital marketing strategies influence the overall business performance of SMEs.

Your study found a significant negative relationship between digital marketing and business performance, with B = -0.194, Beta = -0.200, t = -3.053, and p = 0.003, suggesting that increased digital marketing efforts might negatively impact business outcomes in your sample. This finding contrasts sharply with prior research, such as Chaffey (2015), who reported that digital marketing improved business performance through a 25% increase in customer reach and a 20% rise in ROI. Similarly, Kumar et al. (2016) observed a 35% increase in customer acquisition and a 25% higher ROI, while Ryan (2016) found a 50% boost in reach and a 45% improvement in performance for businesses with strong digital marketing strategies. These studies consistently highlight digital marketing as a driver of growth, making your results an intriguing outlier.

The discrepancy between your findings and previous research may be attributed to contextual differences. Businesses in your sample might have ineffective digital marketing strategies or lack expertise in using digital tools effectively. Additionally, resource constraints, such as limited budgets or inadequate tools, could hinder the successful implementation of digital marketing efforts. Oversaturation of digital marketing without balancing other aspects of business operations might also lead to unmet customer expectations, further diminishing performance. These results suggest that businesses in your sample may need to adopt a more strategic approach by investing in training, optimizing marketing channels, and aligning their digital marketing efforts with broader business objectives to achieve better outcomes.

5.1.2 Research Objective 2: To determine the impact of digital customer support divisions on enhancing business performance in SMEs.

Your study revealed a significant positive relationship between digital customer support and business performance, as indicated by B = 0.474, Beta = 0.495, t = 8.326, and p < 0.001. This finding suggests that improved digital customer support efforts contribute positively to business outcomes within your sample. These results align with prior research, such as Klaus and Maklan (2013), who found that digital customer support enhanced customer satisfaction and retention, leading to a 20% improvement in business performance. Similarly, Hennig-Thurau et al. (2010) demonstrated that digital support systems, such as live chat and helpdesks, improved customer retention by 15%, positively impacting performance. Chiu et al. (2012) also reported that 24/7 digital support increased customer satisfaction by 20%, driving long-term business success.

The Beta value of 0.495 in your study indicates a strong positive relationship, consistent with prior findings emphasizing the benefits of effective digital customer support systems. Both your research and existing literature confirm that well-implemented digital support enhances business performance by fostering better customer relationships and retention rates. The positive impact observed in your study may be attributed to responsive support systems that meet customer expectations, personalized and efficient customer interactions facilitated by digital tools, and the 24/7 availability of services, which improve customer satisfaction and loyalty. These factors underscore the importance of investing in robust digital customer support strategies to drive business success.

5.1.3 Research Objective 3: To analyze how innovative manufacturing approaches contribute to the business performance of SMEs.

Your study found a negative relationship between innovation in manufacturing and business performance, with B = -0.312, Beta = -0.318, t = -4.014, and p < 0.001, suggesting that manufacturing innovations may not be improving business outcomes in your sample. This contrasts with previous research, such as Tushman and O'Reilly (1996), who found that innovations like lean manufacturing and automation led to significant cost reductions and improved performance. Zeng et al. (2010) also reported a 30% increase in market share and profitability due to manufacturing innovations, and Voss et al. (2006) found a 20% reduction in production costs through innovative technologies.

The negative relationship in your study could be attributed to challenges in implementing manufacturing innovations, such as high upfront costs, technical difficulties, or disruptions during the transition period. It may also suggest a lack of alignment between the innovations and overall business strategy. Additionally, manufacturing innovations often take time to yield measurable results, meaning the benefits may not have been realized yet in your sample. These factors highlight the need for companies to address implementation challenges and manage expectations regarding the time it takes for innovations to impact business performance.

5.1.4 Research Objective 4: To investigate the role of innovation in products and services in improving business performance in SMEs.

Your study found a strong positive relationship between innovation in products and services and business performance, with B = 0.888, Beta = 0.881, t = 13.182, and $p < 0.001$. This suggests that businesses that focus on innovating their products and services experience significant improvements in performance. These findings are consistent with previous research, such as Song et al. (2005), who reported a 10-15% increase in revenue due to product innovation, and Lee & Kim (2016), who found that service innovation led to a 20-40% increase in customer satisfaction, translating into higher profitability. Griffith & Neely (2009) also observed that firms investing in product and service innovations saw a 12-18% rise in customer satisfaction, which improved market position and profits.

The Beta value of 0.881 in your study indicates an even stronger relationship between product and service innovation and business performance than what has typically been observed in the literature. While previous studies suggest improvements in performance ranging from 10-40%, your findings highlight the significant role that innovation plays in driving business success. This reinforces the idea that continuous innovation in products and services is crucial for enhancing customer satisfaction, increasing profitability, and improving overall business performance.

5.2 RECOMMENDATION AND SUGGESTIONS

To enhance the successful implementation of innovative manufacturing practices, SMEs should focus on adopting scalable, cost-effective innovations that align with their specific needs and resources. This could involve utilizing existing technologies or adopting automation tools and learning manufacturing techniques to improve efficiency without significant capital investment. SMEs can also benefit from seeking financial support, such as government grants or industry subsidies, to ease the financial burden of new technologies. Collaborating with larger firms or forming partnerships can further provide access to resources and expertise. Additionally, investing in employee training is crucial to ensure staff can effectively manage and utilize advanced technologies, reducing inefficiencies and enhancing operational performance. Implementing gradual, pilot-based approaches will allow SMEs to test innovations on a smaller scale, identify potential challenges early, and minimize risks.

Furthermore, SMEs should actively monitor industry trends and market demands to stay ahead of technological advancements and ensure their innovations meet customer expectations. Collaborating with research institutions can provide access to cutting-edge technologies and expertise, which can help SMEs integrate affordable and effective innovations into their processes. Fostering a culture of flexibility and adaptability within the organization is also important, as it enables SMEs to respond to changes and continuously improve their operations. By strategically integrating innovation, training, and collaborations, SMEs can overcome challenges and unlock the potential of innovative manufacturing practices to drive long-term competitiveness and business performance.

5.3 CONCLUSION

In conclusion, while innovative manufacturing practices hold significant potential to enhance the efficiency, cost-effectiveness, and competitiveness of SMEs, the challenges associated with their implementation cannot be overlooked. The negative impact observed in the study underscores the complexities SMEs face, such as high initial investments, operational inefficiencies, and limited expertise. However, by adopting a strategic approach focusing on scalable and cost-effective innovations, leveraging financial support, investing in employee training, and piloting small-scale innovations SMEs can overcome these obstacles. Collaboration with research institutions and larger firms can further provide affordable solutions and technical expertise. Ultimately, with careful planning and gradual implementation, SMEs can harness the power of innovation to improve their manufacturing processes, drive long-term growth, and maintain a competitive edge in the market.
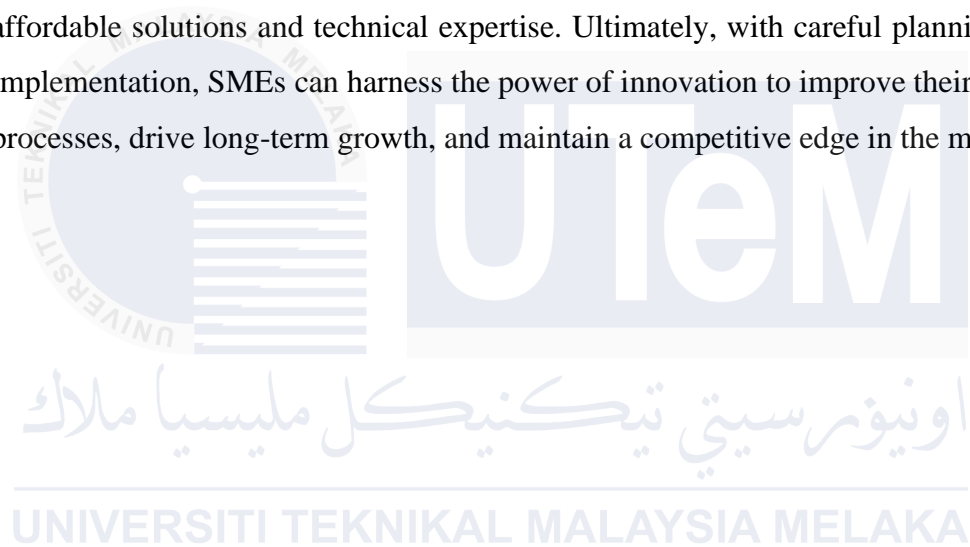
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APPENDIX 1

GANTT CHART FOR PSM 1

Task	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13
Finalize Proposal	●	●											
Gain Approval		●	●										
Gather Data				●	●	●							
Do Data Analysis						●	●	●					
Write Report							●	●	●				
Finalize Report								●	●	●			
Submit the Report											●	●	●

APPENDIX 2

GANTT CHART FOR PSM 2

Tasks	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13
Questionnaire Design & Validation	●	●	●										
Data Collection (Survey)			●	●	●	●	●						
Data Analysis & Interpretation						●	●	●					
Drafting Chapter 1-3 (Intro, Lit Review, Methodology)				●	●	●	●						
Results & Discussion								●	●	●	●		
Final Report Writing								●	●	●	●	●	●
Presentation Preparation										●	●		
Final Submission											●	●	●

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

QUESTIONNAIRE

<u>DIGITALIZATION AND INNOVATION IN SMES: INFLUENCES ON THE BUSINESS PERFORMANCE IN SMES.</u>

Dear Respondent,

Thank you for participating in this survey, which is part of a Final Year Project. This research aims to examine the impact of "Digitalization and Innovation on Business Performance in SMEs," specifically focusing on data from SMEs in Malacca. The information you provide will be used solely for research purposes, and all responses will be treated with strict confidentiality, privacy, and security. No data misrepresentation will occur. The findings of this study aim to offer valuable insights to help organizations enhance productivity.

The survey should take approximately 15 minutes to complete. We kindly ask you to fill out the questionnaire in full. Your participation and cooperation are greatly appreciated.

If you have any questions, need clarification, or experience any issues, please feel free to reach out by email at or call .

SECTION A: DEMOGRAPHIC AND FIRMOGRAPHIC INFORMATION

Please complete the following questionnaire by placing an 'X' in the appropriate box for each question, with specific regard to the information provided above.

1. What is your gender?

   Male ☐

   Female ☐

2. What is your age?

   Under 25 ☐

   25-34 ☐

   35-44 ☐

   45-54 ☐

   56 above ☐

3. What is the primary industry of your SME?

   Manufacturing ☐

   Retail ☐

   Technology ☐

   Services ☐

4. How many years has your SME been in operation?

   Less than 1 year ☐

   1-4 years ☐

   5-10 years ☐

   More than 10 years ☐

5. How many employees does your SME have?

1-20 ☐

21-50 ☐

51-100 ☐

More than 100 ☐

SECTION B: ASSESSMENT OF INDEPENDENT VARIABLES

Please rate your level of agreement with each of the following statements (1 = Strongly Disagree, 6 = Agree).

Digital marketing	Item	1 Strongly Disagree	2 Fairly Disagree	3 Disagree	4 Strongly Agree	5 Fairly Agree	6 Agree
DM1	Our SME has seen an increase in sales revenue as a direct result of digital marketing efforts.						
DM2	Digital marketing has significantly improved our SME's brand visibility and recognition.						
DM3	Customer engagement and interaction with our SME have increased due to digital marketing campaigns.						

DM4	The return on investment (ROI) from our digital marketing activities has been positive for our SME.						
DM5	Digital marketing has helped our SME reach new customer segments or markets.						
Digital Customer Support							
CS1	The implementation of digital customer support has led to faster response times for customer inquiries in our SME.						
CS2	Our SME has experienced higher customer satisfaction levels due to digital customer support services.						
CS3	Digital customer support has improved the efficiency and productivity of our customer service operations.						
CS4	The use of digital customer support tools has contributed to reducing operational costs in our SME.						
CS5	Digital customer support has played a significant role in retaining customers						

	and reducing churn in our SME.					
Innovative Manufacturing						
MF1	Our SME's innovations in manufacturing processes have led to a reduction in production costs.					
MF2	Manufacturing innovations have resulted in improved product quality in our SME.					
MF3	The adoption of new manufacturing technologies has increased our SME's production efficiency.					
MF4	Innovations in manufacturing have enabled our SME to reduce time-to-market for new products.					
MF5	Our SME has gained a competitive advantage in the market due to manufacturing innovations.					

Innovative Product and Services							
PS1	The introduction of new products or services has significantly increased our SME's revenue.						
PS2	Innovations in our product or service offerings have led to higher customer satisfaction.						
PS3	Our SME has gained a competitive advantage in the market through innovative products or services.						
PS4	The development of new products or services has helped our SME attract new customers.						
PS5	Innovative products or services have contributed to the overall growth and expansion of our SME.						

SECTION C: ASSESSMENT OF BUSINESS PERFORMANCE IN SMES

Please rate your level of agreement with each of the following statements (1 = Strongly Disagree, 6 = Agree).

	Item	1 Strongly Disagree	2 Fairly Disagree	3 Disagree	4 Strongly Agree	5 Fairly Agree	6 Agree
EL1	Our SME has experienced consistent revenue growth over the past three years.						
EL2	The profitability of our SME has improved significantly over the last few years.						
EL3	Customer satisfaction has increased because of our business strategies.						
EL4	Our SME has successfully expanded its market share within our industry.						
EL5	Employee productivity and efficiency have contributed positively to the overall performance of our SME.						
EL6	Our SME has successfully reduced operational costs while maintaining or improving quality.						