THE TOOLS OF TECHNOLOGY INNOVATION TOWARDS SMALL AND MEDIUM ENTERPRISES QUALITY PERFORMANCES
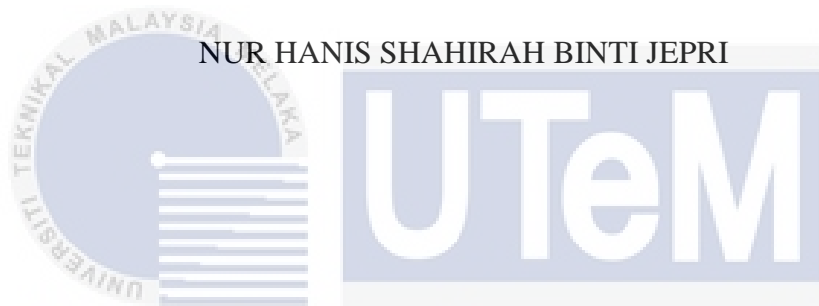
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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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THE TOOLS OF TECHNOLOGY INNOVATION TOWARDS SMALL AND MEDIUM ENTERPRISES QUALITY PERFORMANCES

NUR HANIS SHAHIRAH BINTI JEPRI

This Thesis Is Submitted In Partial   Fulfilment of the Requirements for the Award of Bachelor of Technology Management (Technology Innovation) With Honours

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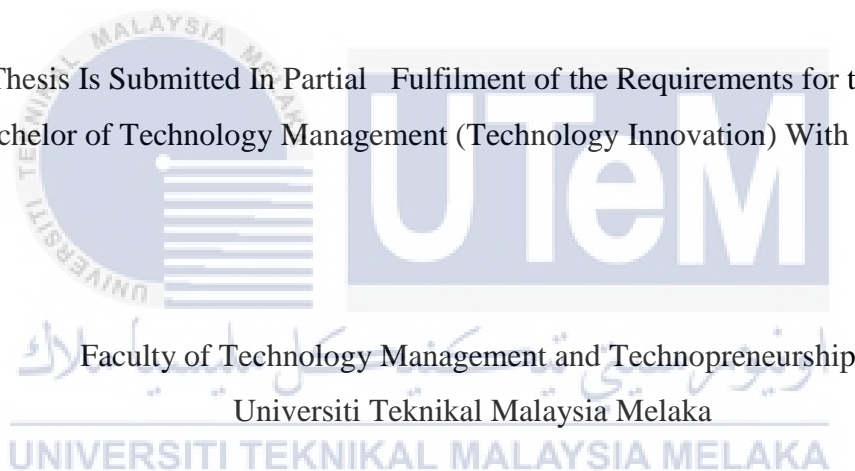
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DECLARATION

'I hereby state that my dissertation, report, or thesis, "TECHNOLOGY INNOVATION TOOLS TOWARDS QUALITY PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES," is the result of my own research, with the exception of any explanations or information from other research that is specifically mentioned in the sources. The paper is not approved about any qualification and is not submitted concurrently with any other academic application.'

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DATE   : 19.1.2023

DEDICATION

All praise is due to Allah, Alhamdulillah. I would want to convey my sincere gratitude to my family members, who always support and motivate me in a variety of spiritual, materialistic, and inspirational ways.

I also want to extend my sincere gratitude to my supervisor, Dr. Kamarudin Bin Abu Bakar, who is willing to put in a lot of effort and patiently mentor me during the entire research process, as well as to my classmates and friends who exchange knowledge with me while I'm in school. It would have been challenging to accomplish this investigation without their approval and assistance.

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ABSTRACT

A new or enhanced product or method that differs considerably from its predecessor in terms of technological quality is referred to as a technological innovation. The three objectives of this study are to: 1. Test the relationship between the significance of technological innovation tools and the quality performance of small and medium-sized businesses; and 2. Examine the statistically significant correlation between technological innovation tools and the quality performance of such businesses. 3. To confirm that small and medium-sized businesses have the best performance in terms of technology innovation tools. The Statistical Package for Social Sciences (SPSS) was also utilised in this study for demographics, reliability, normality, correlation, and regression tests, as well as for a pilot study with 30 respondents. The researcher can obtain results like relationship, correlations, dominance and can also accept alternate hypotheses for all of the hypotheses except for the independent variable, which forces the researcher to accept the null hypothesis. The results of this study have significance for the industry as well as for the respondents' expertise. In conclusion, this study discovered innovative technical techniques for improving the performance quality of small and medium-sized businesses.

Keywords – *Technology Innovation, Small and Medium Enterprises Quality Performances, SPSS, Tools, Respondents, Null hypothesis, Alternative hypothesis.*

ABSTRAK

Produk atau kaedah baharu atau dipertingkatkan yang jauh berbeza daripada pendahulunya dari segi kualiti teknologi dirujuk sebagai inovasi teknologi. Tiga objektif kajian ini adalah untuk: 1. Menguji hubungan antara kepentingan alat inovasi teknologi dan prestasi kualiti perniagaan kecil dan sederhana; dan 2. Periksa korelasi yang signifikan secara statistik antara alat inovasi teknologi dan prestasi kualiti perniagaan tersebut. 3. Untuk mengesahkan bahawa perniagaan kecil dan sederhana mempunyai prestasi terbaik dari segi alat inovasi teknologi. Pakej Statistik Sains Sosial (SPSS) juga digunakan dalam kajian ini untuk ujian demografi, kebolehpercayaan, normaliti, korelasi, dan regresi, serta untuk kajian rintis dengan 30 responden. Penyelidik boleh memperoleh keputusan seperti perhubungan, korelasi, dominasi dan juga boleh menerima hipotesis ganti untuk semua hipotesis kecuali pembolehubah bebas, yang memaksa penyelidik untuk menerima hipotesis nol. Hasil kajian ini mempunyai kepentingan kepada industri dan juga untuk kepakaran responden. Kesimpulannya, kajian ini menemui teknik teknikal yang inovatif untuk meningkatkan kualiti prestasi perniagaan kecil dan sederhana.

Kata Kunci – Inovasi Teknologi, Prestasi Kualiti Perusahaan Kecil dan Sederhana, SPSS, Alat, Responden, Hipotesis nol, Hipotesis Alternatif.

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LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
IV	Independent Variables
DV	Dependent Variable
SPSS	Statistical Package for Social Science
URL	Uniform Resource Locator

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CHAPTER 1

INTRODUCTION

1.1   Introduction

In Chapter 1, the study's framework is discussed. It will provide a thorough summary of the backdrop of the study's use of technological innovation tools to enhance small and medium-sized organisations' performance standards. Because of this, this chapter can help readers learn more about technological innovation tools. Additionally, this chapter will explore the problem statement by defining technological innovation tools and the quality of small and medium-sized businesses' performance. The significance of the study and its scope are also included in this study, along with the goals and research inquiries.

1.2   Background of Study

Mihaela (2011) defines innovation as a new product, technique, or improvement that significantly differs technologically from its predecessor. Technological product innovation involves newly released goods on the market, whether they are new goods (product innovation) or new methods of doing things (process innovation). Innovation refers to a process or product that offers the business particular advantages. Product innovation, process innovation, and business model innovation are all terms that apply to three separate things (Kahn, 2018).

According to Afuah (1998), innovation as latest understanding embodied in products, processes, and services and also the technology that the company employs

and the market in which it works. According to Carr, K et al (2016), innovation isn't solely central to changes in ancient apply however arguably liable for humanity' outstanding success at colonizing the planet and diversifying the products, technologies, and systems among it. Innovation could be a method that mixes science, technology and management because it is to realize newness and increase from the exposure of the thought to its exploitation within the variety of manufacturing, trade and consumption (Twiss, 1989).

As incumbent advantage dwindles, technology advancements create possibilities for entrepreneurs to start new enterprises and gain a competitive advantage. Furthermore, because the outcome of technological innovation can only be forecast imperfectly, incumbents are faced with uncertainty and risk (Baum, 1996). Economic growth and human well-being are both fuelled by technical innovation (James and Adam, 2019).

The reasons why researcher choose technology innovation because it can give a lot of benefits such as it can boost the productivity in term of business. It can be seen where nowadays most of the people have their smartphone and internet so if they are doing a business, they can use it to reach their goals quickly. Technology innovation also can boost a productivity in term of the careers. A recent projection from the World Economic Forum predicts that by 2022, 133 million new employment will have been generated, with 75 million of those occupations being related to robotics, AI, and automation. This is owing to the fact that technological advancements have brought new and improved commercial strategies. It enables companies to conduct business in a more timely, convenient, and efficient manner.

1.3 Technology Innovation

Technology innovation could be a science's polar opposite and additional notably too basic analysis comparable to a dominant cultural influence price of the 20th century and it emerged as a phrase or conception as a result of in discourse, action, and policy, it absolutely was helpful to incorporate in understandings of economic process a bigger range of individuals than simply scientists and additional a variety of tasks other than science or fundamental research and The process of technology innovation is a holistic one (Godin, 2016). The method of invention and innovation is

the method of technical progress within the economy on the other hand, refers to the application of recent scientific achievements to industrial output. (Prasana et al, 2019). They are made up of a variety of features that vary depending on the method and components used, such as goals, actors, drivers, and assets, inputs, actions, and outputs, price generation, systematic and inedible background, and other discourse variables. Its value noting that each of these features or particular has undergone and continues to fast changes that throw standard interpretation and scopes of innovation as technology innovation into inquiry (Edward, 2018).

According to Romer (1986), technological advancement as a driver of economic development. In addition to research and development (R&D), the new philosophy of progress takes into account the value of physical, human, and public capital. Due to rapid technical developments and small creation and technology lifecycles in the globalised world, technologically creative activities are among the prestigious variables that have an impact on SMEs' ability to achieve property competitive advantage and increase market survivability. (Bonito, 2018; Rogers, 2010).

According to Afuah (1998), technical innovation can take many forms, including component data, interactions between components, methods, procedures, and skills that come with a good or service. The need for body innovation may or may not exist. It could be a procedure, a service, or a product. New products or services aimed at meeting market needs should be considered product or service innovations. Process innovation is bothered with the establishment of latest components into an organization's action, such as input substances, duty descriptions, work and knowledge flow mechanisms, and instruments required to make a product or provide a service. In a nutshell, these technology innovation can be the tools towards Small and Medium Enterprises to look up or maintain their quality performances.

1.4   Small and Medium Enterprises

Small and medium businesses are referred to as SMEs. SMEs continue to play a vital part in Malaysia's economy. In most nations, small and medium-sized businesses (SMEs) have emerged as the engine of economic expansion. Thaker et al. (2013) claim that the contribution of SMEs to Malaysia is bigger than that of numerous

non-OIC nations like Korea, Singapore, Vietnam, and South Africa, as well as some members of the Organization of Islamic Cooperation (OIC) like the United Arab Emirates, Indonesia, and Egypt. The economy's growth rate is still low.

As a result, SMEs are encouraged to discover strategies to stay competitive in the market, such as through engaging in online commerce. SMEs are classified by the Malaysian Small and Medium Enterprises Corporation (SME Corp. Malaysia) based on yearly sales turnover or the quantity of full-time workers. The criteria used to designate SMEs in Malaysia are influenced by well-known government bodies and researchers in the sector.

Medium-scale businesses have 51 to 150 people and annual sales of RM10 million to RM25 million, whereas small-scale enterprises have fewer than 50 full-time workers and less than RM10 million in annual sales. According to Sandberg et al (2002), on the other side, small business performance is defined as their capacity to generate income and jobs through business entrepreneurship, viability, and continuity. In a nutshell, Small and Medium Enterprises can maintain or boost their quality performance through technology innovation.

1.5   Problem Statement

In recent years, the performance of small businesses has been linked to their ability to innovate. From several evolutionary positions, the theoretical perspective of innovation capability has been investigated. Leadership capability is vital for innovation since it depends on a leader who is accountable for directing and supporting innovation and sustainability in the business (Akram et al, 2019). According to Ullah (2021), in the modern economy, technology innovation is vital for SME survival. As the world's technology innovation accelerates, it is critical for Malaysian SMEs to embrace the technology innovation in order to not only avoid falling behind, but also to contribute to economic growth. Therefore, technology innovation towards Small and Medium Enterprises may have an issues or problems.

The problem or issues that occurred first is the access limitation which defined as a lack of equipment or connectivity (Johnson, 2016). This is because if the company does not have computers and internet connection, the implementation of technology

for business is not feasible. According to Johnson (2016) also, the problem of insufficient technological training also one of the issues that occurred. Employees will not be able to use new technologies to their full capacity if their employers do not provide effective professional development on them. Both of this problem can give an impact towards Small and Medium Enterprises quality performances. Next is in term of the rising cost. According to the RSA Economic Imperative Report (2017), SMEs see rising company costs as a significant threat to their operations. This is because the technology is not a cheap so the price of the product or services in that company will be increase too. Hence, SMEs should take an endless efforts to abide by and outdone their rivals to use and survive within the technology innovation things.

Based on the expectation and therefore the problems facing, the researcher found that online business aids companies in becoming more cost-effective. This is because customers and businesses can benefit from online business because it is faster and less expensive. Thus, online business appears to be a new medium for enhancing business, particularly in terms of improving quality performance and ensuring long-term viability. As a result, business start-ups choose to go online, particularly for Small and Medium Enterprises in certain industries such as food and beverage, textile and apparel, and beauty and cosmetics. As a result, a quantitative study is being planned to examine what tools of technology innovation that small medium firms would use to maintain or boost their quality performance. For this case, the respondents are among the small and medium enterprises people that have considerations their quality performances. Thus it is also very interesting to expect a new findings in the research topic that could clarify and confirm that Small and Medium Enterprises could be a continuous contributions in the current difficult economic situation.

1.6   Research Questions

1. Is there any significance relationship between the tools of technology innovation and small medium enterprises quality performances?
2. Is there any significance correlation between the tools of technology innovation and small medium enterprises quality performances?
3. In which variable is most dominant in the tools technology innovation and small medium enterprises quality performances?

1.7 Research Objectives

1. To test the significance relationship between the tools of technology innovation and small medium enterprises quality performances.
2. To examine the significance correlation between the tools of technology innovation and small medium enterprises quality performances.
3. To verify the most dominant in the tools technology innovation and small medium enterprises quality performances.

1.8 Significant of Study

From the analysis of technical innovation tools to the quality performance of small and medium-sized firms, these research report's goals are successfully attained.

The researcher can gain a deeper understanding on the tools of technology innovation towards small and medium enterprises quality performances. Besides that, the researcher can examine the most significant tools of technology innovation that will use by the small and medium enterprises for their quality performances.

This study is beneficial where it can provide readers a lot of information especially to the small and medium enterprises about the tools that they can use to measure their quality performances.

1.8 Scope and Limitation of Study

The study have a few scope that may influence its finding either directly or indirectly.

First, the information assortment can simply target little medium enterprises people in middle management. This can be as a result of its thanks to apprehend their performances. Secondly, the understanding and ability of respondent in Technological Innovation either they need the flexibility or not in victimisation smartphone and conjointly the social media mobile app to get their performances particularly throughout pandemic Covid-19. They also got to have the net line to use that sort of

technological innovation. Next, time-consuming. Respondent might busy and slow to answer the survey because they have several works to try and do and might assume that the survey is simply waste of their time. It would take a slow respond and also the result couldn't be thought of for a generalization purpose.

Thanks to the factors above, the study may encounter problem to make sure the sleek analysis method which can have an effect on the time planned.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter primarily discusses the study's independent and dependent variables. Previous literature evaluations included pertinent publications in journals of technology innovation, research and development, educational, and business or organisation performance. Only suitable arguments were selected after a thorough examination of the theory and earlier models. The author then utilised the same method to find the variables that are critical for creating research survey questionnaires. Aside from that, the article included a critical evaluation in which the author attempted to give her perspective to the conversation. Finally, all of the inputs will be converted into a theoretical framework that reflects the understudied independent and dependent variable relationships and will be used for analysis in Chapter 3. The hypothesis should reflect the assumptions about the relationship between the variables.

2.2 The Tools of Technology Innovation

Technological innovation strives to develop new products or processes with new technological features, enhance existing products, or stand out from the competition. When something is launched to the market that helps a company or the general population, it is referred to as an innovation (Jonas, 2021). According to Jonas (2021), allowing companies to expand in accordance with customer desires. The Internet links people and improves the availability of information. Now that cellphones are so widely used, technology hopes to be able to access the web on this wallet device

from everywhere able to innovate and employ the newest methods in order to satisfy client demands. By utilising the most recent sales techniques, these enhancements could assist the website maintain its relevance while also becoming more appealing. According to Jonas (2021), while experimenting with cutting-edge technology helps to ensure that it satisfies client expectations, it can also result in improvements that enhance the working environment for employees. Small enterprises and entrepreneurs are benefiting from technological advancements. It is assisting them in realising their vision, and the trend toward innovation began even before the internet became widely available in the early 1990s (Staff, 2022). When it comes to cost-cutting, business owners can also profit from innovation. Small firms can employ technology to lessen the amount of work that must be done by people in the course of production. According to Chris (2018), labour costs, such as pay, benefits, and turnover, can all be reduced. Technology can also assist in streamlining and minimising waste in the manufacturing process. One of the technology's most prominent benefits is its potential to assist even tiny businesses in competing globally (Chris, 2018). Through the use of websites, the Internet, for example, allows single entrepreneurs to sell their products or services to prospects all over the world. He or she can give prospects detailed product descriptions and photographs, giving them all the information they need to make an informed purchase decision. For example, Facebook and Twitter allow him to interact with others who might be interested in his business without having to meet them face to face (Chris, 2018).

For this study, the 3 independent variables for the tools of technology innovation are research and development, web design and Lean Six Sigma.

2.2.1   Research and Development

Innovation benefited from R&D investment. The impact of R&D on innovation performance was good (F. M. Scherer, 1956). According to Crepon et al. (1998) believed that Input and output procedures were used to categorise R&D activities. To measure the link between input and output, R&D investment was chosen as an input factor and patent sales and new product sales were chosen as output factors. Bogliacino and Pianta (2013) believed that the intensity of R&D input had a vital influence in increasing the industry's innovation output, as well as supporting profit growth.

Baumann and Kritikos (2016) believed that the benefits of innovation in microenterprises were similar to those in large firms, and the boost to innovation provided by R&D input intensity in microenterprises was similar to that in large corporations.

The area of in order to develop, design, and improve its operations, services, and activities, a business activity known as R&D looks for new knowledge. In addition to creating new goods and enhancing old ones, investing in research and development helps a company's business model and strategy by integrating aspects like marketing and cost-cutting (Sean, 2021). According to Sean (2021), R&D has certain clear advantages, such the ability for increased output or new lines of goods. Smaller research and development companies can offset some of these costs and attract investors.

The process of invention requires research and development. In a sense, this is a wager on the capacities and technology of the long term that will result in new goods, procedures, and services. R&D plays a crucial role in developing new competitive benefits in business and the technology sector. It is a crucial part of innovation. R&D comprises three variables which are unique product, unique services and competitive advantage.

2.2.1.1 Unique Product

According to Stephen (2021), R&D activities can develop a unique product. It is actually a new idea that take it into some product. The technology that have been developed before this also can be used to reduce a cost to make a unique product from the previous one. It is also can make those product efficiency and improve their safety. Unique product also important towards company to sustain their business in the market.

Question: Do unique product can be developed by the aids of R&D?

Statement: Unique product can be developed with the aids of R&D.

2.2.1.2 Unique Services

Unique services is important towards business. This is because it is needed for them to fit on what the customer's needs and also can fit into the market. R&D also can help the company to improve their services to make a unique services rather than before. Companies across all sector also can experiences these improvement and development of the services (Will, 2022)

Question: Do unique services can be developed in R&D?
Statement: Unique services can be developed in R&D.

2.2.1.3 Competitive advantage

Competitive advantage in commerce is a quality that enables an organisation to surpass its rivals. It can assist businesses in creating cutting-edge goods and modern tools that support cutting-edge business strategies, giving them a competitiveness. Additionally, it may lead to increased efficiency and organizational enhancements.

Question: Do competitive advantage can be a source in R&D?
Statement: R&D can be a source of competitive advantage.

2.2.2 Web Design

According to Robin (2022), Web design is the term used to describe how news sites are presented online. Instead of software development, it typically relates to the user knowledge component of website development. Prior to the middle of the 2010s, designing for smartphone and tablet devices was less significant than building websites for desktop browsers. Planning, conceiving, and organising online material are all a part of the process of digital marketing.

Web designers are responsible for the site's appearance, ambience, and occasionally even its content. For instance, appearance includes the typefaces, colours, and artwork utilised. Layout describes how data is arranged and categorised. Good web design accommodates various users and online identities while also being user-friendly and attractive (Iulian, 2021).

According to Cameron (2009), In order to avoid distracting or confusing specific data and functionality, many web sites are created with simplicity in mind. A website's ability to gain and retain the confidence of the core demographic is the backbone of a web designer's output, so minimising user annoyance is a crucial factor.

Customers can discover more about a trademark and conduct business with your company on your website. A superb website is both stylish and useful. Meeting websites' convenience and efficiency can make or break them. Consumers of today's digital products expect to use their preferred platform to access data and complete transactions whenever and wherever they like. They anticipate a quick and simple user experience (Olivia, 2019).

According to Olivia (2019), as the percentage of people using the internet is rising, as are those who use alternate methods of information consumption and those with challenges. The most efficient way to integrate elements that make a search easier to as numerous people as feasible is through basic design. A clean design delivers a great encounter for everyone without the colourful and confusing features that frequently deter consumers from accessing your site.

2.2.2.1 Design Thinking

According to Catherine (2022), design thinking is a problem-solving approach that formulates innovations centered on customer needs. It is user-centered and solution-based, which distinguishes it from other problem-solving frameworks.

Question: Do design thinking can ensure a clear output to user satisfaction?
Statement: Design thinking can ensure a clear output to user satisfaction.

2.2.2.2 Information Design

Brand recognition, building relationships with potential customers, disseminating promotional messaging, and reaching a larger and more diversified audience are all important (Rahman, 2012). Another advantage, according to Gurnelius (2011), is that it helps the organisation drive sales, create relationships with

customers, and promote brands by offering discounts. The website was originally designed to provide information about the company's products and services.

Question: Do Information design can become an user friendly?

Statement: Information design can become an user friendly.

2.2.2.3 Feedback

Feedback is a method that allows users to specify specific page elements on a web page that need improvement in some way. The strategies used to collect and analyse this feedback, however, vary depending on the user's goals.

Question: Do Feedback can be used to make an improvement?

Statement: Feedback can be used to make an improvement.

2.2.3 Lean Six Sigma

According to Ankit (2020), the environment of today is quite dynamic. If applied independently, the approaches of lean or six sigma in this dynamic setting cannot increase their full potential. Lean and Six Sigma collaboration leads to significant advancement. This management technique starts by employing a traditional lean approach to minimise production inefficiencies. Then, Six Sigma technology is used to reduce process variance. But these two strategies now work best together. The ultimate objective is to streamline processes by reducing discrepancies and cutting out waste. Lean techniques and Six Sigma strategies are alternated during the PDCA process, which is a continual improvement process. Based on the complexity of the activity or the result desired, the level of approach may change. These two approaches are used to create a simplified process with great quality and yield. It boosts efficiency and aids in achieving corporate objectives.

According to Ankit (2020), a reality, bandwidth improvement methodology called Lean Six Sigma favours defect avoidance over fault discovery. Increased adoption of standardisation and workflow, together with decreased variance, waste, and cycle time, boost customer satisfaction and income while offering the company a

competitive edge. It is applicable whenever there are discrepancies and inefficiencies, and every employee should take part in it.

Operational excellence is made possible by the integration of the two well-known Process Improvement techniques Lean and Six Sigma, or Lean Six Sigma. This tried-and-true strategy offers organisations a clear road map for completing their purpose as fast and effectively as feasible (Ankit, 2020).

Across all fields and industries, an integrated Lean Six Sigma management methodology is employed. It encourages a striking improvement in organisational performance. Businesses all across the world can obtain a competitive advantage thanks to Lean Six Sigma. They might be companies that concentrate on selling goods or services. LSS methods enhance and simplify processes. Success depends on management's backing, employees' commitment, and efforts to increase customer satisfaction (Ankit, 2020).

2.2.3.1 Teamwork

Every team member is significant when it comes to Lean Six Sigma. Everyone plays a part, and everyone gets credit (Nilufer, 2016). According to Kaufman (2020), effectively implementing Lean decisions and sustaining them requires strong teamwork, led by discipline and reinforced by positive feedback.

Question: Do teamwork is a key to make it work?

Statement: Teamwork is a key to make it work.

2.2.3.2 Training

According to Bhargav (2022), Lean Six Sigma training assists in certifying experts who are adept at spotting risks, mistakes, or faults in business processes and removing them. Individuals often need to have a particular amount of experience and demonstrate their competency in order to enrol in a Six Sigma course and receive certification. They can gain expertise in process optimization with accreditation, which will also boost their reputation.

Question: Do continuous training can give benefits to the company?
Statement: Continuous training can give benefits to the company.

2.2.3.3 Non-value added

Operations that don't increase the value of the goods or services that are supplied to customers are referred to as non-value-added activities. Studies on process improvement strive to find and stop this behaviour. Businesses can do this to lower their expenses while also accelerating their operations. For instance, if review or approval processes can be altered or removed from a process because they do not add value to the final output, organisational efficiency will increase. Non-value-added activities may make up a sizable portion of a company's work operations (Jasmeet, 2016)

Question: Do non value-added activity can be reduced within the process?
Statement: Non value-added activity can be reduced within the process.

2.3   Small and Medium Enterprises Quality Performances

According to Hoffman (1998), Small and Medium Enterprises actually carry out creative activities is limited. Small and medium-sized businesses (SMEs) are increasingly required to measure their performance maturity levels in order to achieve continuous quality improvement (Lewis, 2007).

SMEs are crucial to the functioning of all economies in the globe, particularly those in emerging nations and, within that broad category, those with serious problems with employment and income inequality. SME's are viewed as key driving forces that are crucial to the creation of effective and efficient marketplaces as well as the eradication of poverty, particularly in developing nations (Fan, 2003).

SMEs have certain qualities that set them apart from major organisations, and these characteristics vary by country and culture. SMEs are typically independent, adept at multitasking, pinched for cash, actively handled by owners, highly individualised, and predominately local in their area of business (Vyakarnam et al, 1997)

As such, small and medium enterprises quality performances comprises 5 variables which are customer focus, leadership, involvement of people, factual approach to decision making and continual improvement (PDCA).

2.3.1   Customer Focus

According to Gebaur (2012), being customer-focused entails having a thorough understanding of consumers' needs, wants, likes, and dislikes, as well as a strategy for making them happy. It's not more than a token gesture. Customers should be at the centre of all corporate decisions and operations in every area. Every employee in a customer-focused organisation, from the CEO to the customer care person, is well-versed in the company's target audience and is continuously considering how to better serve them.

Do not create a customer-focused experience without first getting to know the consumer, and we don't mean the "average" or even the most powerful customer. When it comes to the customer who unlocks the most value in a company, such as Google, it could be people who love technology, but Apple's customers enjoy elegance and simplicity in design (Kate, 2020)

According to Courtney (2020), it is don't need fancy loyalty programmes or pricey initiatives to develop an effective consumer focus approach. It's all about creating a solid foundation for your company so that you can win customers' hearts from the first swipe of their credit card.

Question: Do customer focus is a critical strategy?
Statement: Customer focus is a critical strategy.

2.3.2   Leadership

Because they play a variety of roles and carry out a variety of crucial tasks, leaders are crucial in all kinds of organisations. Nowadays, any company's major objective is to perform better in order to survive and retain its existence. Businesses must always improve their efficiency if they want to be extremely competitive in their field (Arslan & Staub, 2013). According to Boal at el (2001), leadership is a vital

aspect in achieving high organisational performance. According to Harms & Creda (2010), "A method through which a person drives a group of individuals to attain a common goal" is how leadership is defined. According to Gul (2012), Leadership is essential for enhancing business outcomes; as a result, leaders are responsible to their organization and its clients for maximising the use of resources to deliver the finest goods and services. The performance of SMEs is largely determined by the leaders' leadership (Spinelli, 2006). According to Avolio & Yammarino (2013), leadership has an impact on how SME leaders operate and is crucial as an organisational guiding principle. In a competitive and dynamic workplace, leadership is required to imagine, inspire, organise, manage, and lead staff to higher levels of performance (Tucker & Russell 2004). As a sense, successful leadership is essential for the success of an organisation and a team (Hogan& Kaiser 2005). When positive efficacy of performance is linked to improved organisational performance, leadership is considered effective. The performance of the organisation is impacted by the leader's efficacy, which has an impact on the company's success or failure (Madanchian at el, 2016). According to Arham at el (2011), in SMEs, poor and weak leadership abilities are the primary causes of failure. So as to avoid organisational failure and achieve high organisational performance, SMEs must build their leadership behaviours to guide their business through all circumstances, including crisis scenarios.

Questions: Do leadership is an important characteristics required?

Statement: Leadership is an important characteristics required.

2.3.3 Involvement of Employee

Employee involvement in organisations' changing processes has been extensively published in academic and practitioner journals, emphasising its importance and potential impact on organisational transformation (Welikala et al, 2008). According to Wilkinson (1995) it is characterised as a paradigm that focuses on overall customer happiness through high staff participation in decision-making.

Pun et al. (2001), employee involvement can help to lay the groundwork for quality efforts and strategy creation, as well as guarantee that procedures are executed in accordance with quality standards that are adhered to by everyone in the organisation.

Question: Do the involvement of employee is an important things?

Statement: The involvement of employee is an important things.

2.3.4   Factual Approach to Decision Making

Making decisions is clearly a major component of entrepreneurship's activities and an inseparable component, as evidenced by entrepreneur behaviour. Making decisions is, in general, the primary factor in all entrepreneurial goals, directions, performances, and operations (Ardakani, 2013). Aside from that, it is the amount of success and priority of the decision that determines the beneficial impact on company performance. (Danai et al, 2018).

Making a decision is the process of deciding on a specific answer (Eston, 1983). The primary aspect of an activity that is particularly difficult and sensitive is decision making. This is due to the complicated nature of decision making (Sidney et al, 2012). According to Miller (2009), a decision is a viewpoint, a concept, or a judgement reached after research.

Question: Do decisions making is important in business

Statement: Decisions making is important in business.

2.3.5   Continual Improvement (PDCA)

According to Abhijit (2016), the Plan Do Check Action (PDCA) cycle allows any organisation to improve continuously. The SMEs are operating, but they want competent guidance in order to improve their productivity and product quality. The PDCA phase of the paradigm makes the assumption that a single intervention will attempt to address a single root cause. When employing the PDCA process, teams can decide to test more than one root cause intervention or address more than one root cause. In such situations, it is crucial to assess how each solution may affect the underlying issue being addressed.

Question: Do Plan Do Check Action (PDCA) can be used to improve the product?

Statement: Plan Do Check Action (PDCA) can be used to improve the product.

2.4   Theoretical Framework

The Independent Variable (IV) is the tools of technology Innovation. This is the theoretical framework that apply in this research.
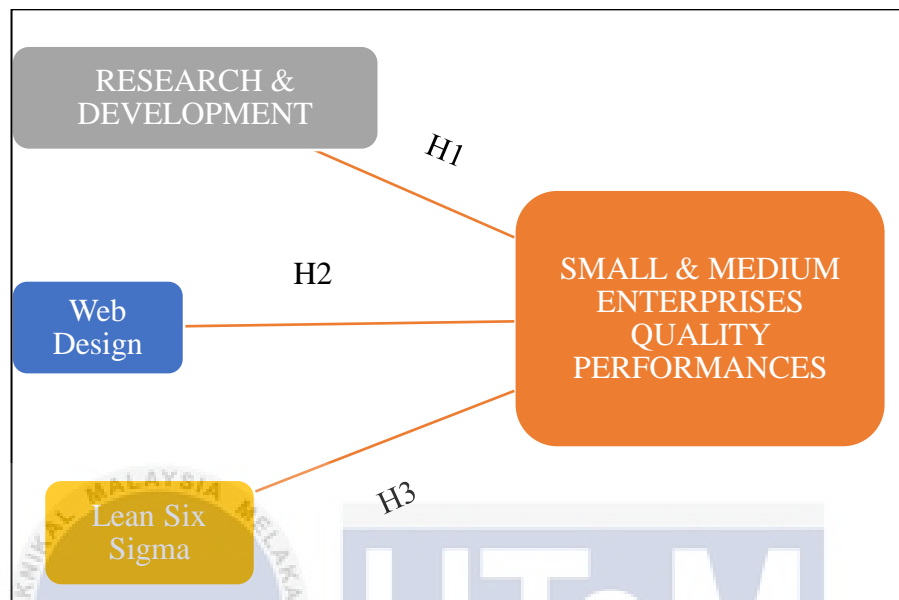
Figure 1: Research Framework

2.5   Research Hypothesis

2.5.1   Research & Development

H0:   There is no significant relationship between Research & Development and Small Medium Enterprises quality performances.

H1:   There is a significant relationship between Research & Development and Small Medium Enterprises quality performances.

2.5.2   Web Design

H0:   There is no significant relationship between Web design and Small medium enterprises quality performances.

H1:   There is a significant relationship between Web design and Small medium enterprises quality performances.

2.5.3 Lean Six Sigma

H0:   There is no significant relationship between Lean Six Sigma and Small Medium Enterprises quality performances.

H1:   There is a significant relationship between Lean Six Sigma and Small Medium Enterprises quality performances.

CHAPTER 3

RESEARCH METHODOLOGY

3.1   Introduction

The research's methodology will be described in this chapter. For a quantitative study, there are steps to be followed. The procedures and methods used also need to be explained. Some components involved in conducting the research may include research design, location of research, research strategy, time horizon, and data analysis method and more. Hence, research methodology refers to a specific technique or methods that involves research methods in the study, this approaches and research design. It is a sequential process of the method which should be followed to conduct a research.

3.2   Research Design

A descriptive study design is a form of research that describes the features of the population under investigation. This strategy was used to collect data from respondents all at once. This design is always more concerned with the study topic than with the reason for the study topic (Babbie, 1990). According to Kerlinger (1978) defined as "the approach, framework, and plan of investigation designed to address research objectives and manage variable." The "glue" that keeps a research effort together is the descriptive research. The design is used to plan the research and to explain how all of the study's primary components, such as the sample or group, measurement, treatment or programme, and assignment technique, work together to answer the centre's research questions.

The study's design also included gathering and analysing fresh data in order to reinterpret previously known facts. The research design preparation procedure includes making proper preparations for systematic research work. When planning various tasks, researchers evaluate the theoretical backdrop as well as the availability of crucial resources. According to Jospal Singh (2001), A framework for gathering and interpreting data is a research design. Before choosing statistical instruments and tests, hypotheses are produced, theories are enhanced, key terms are formed, measures are chosen, accuracy and validity are evaluated. The optimal way for achieving a specific goal with the least amount of time, money, and people is determined when creating a study design.

3.2.1 Descriptive Research

The interaction of variables, the examination of hypotheses, and the formulation of generally recognised generalisations, principles, or theories are all topics covered by descriptive study. In explanatory inquiry, a framework of comparison is obviously necessary. De Vaus, D.A. (2003), Contrary to a study design, researchers do not alter characteristics or producing useful. Data collection and tabulation are only one of the study process. It is only a fact-finding technique that focuses on the present and draws generalisations from a merge analysis of the existing state of affairs. Characterization is used with comparative or difference, which includes measurement, categorization, evaluation, and judgement, to indicate the link between the things being described. In contrast to conceptual research, descriptive investigations require extensive prior knowledge of the problem under investigation. Empirical investigations concentrate on the interactions between uncompromised features in actual rather than simulated circumstances. Because the occurrence or circumstance has happened or is real, the researcher chooses pertinent variables for correlation analysis. They entail hypothesis generation and testing, as well as the application of logical inductive and deductive reasoning to reach generalisations. They frequently use randomization techniques.

3.3 Methodological Choices

This strategy is widely employed when trying to grasp a person's underlying reason or viewpoint regarding a particular event or scenario. There's nothing to do with figures. It gives a high-level perspective of the study problem and, as a result, assist in reaching the study's goals. Discussions, surveys, unlocked surveys, and discussion groups are a few of the methods that might be used.

Quantitative research requires the gathering of raw values from secondary or primary sources. This method enables researchers to get secondary sources, polls, surveys, and questionnaires. The key requirements of this technique are the when, when, what, and how frequently specific events occur.

3.4 Data Collection

Data collection is the act of gathering information from all available sources in order to address the research issue, verify the hypothesis (if employing a deductive reasoning), and assess the findings. There are two types of data gathering methods: secondary data collection methods and primary data collection methods. Quantitative approach is chosen and will be used in this study of research for collecting the data needed. The quantitative research has a lead as the study technique to make sense and new knowledge to understand the tools of technology innovation towards small and medium enterprises quality performances. As this study is conducting in quantitative method, then a questionnaire that blasted in management section of Google Form will be utilized in this research. Selected participants will receive the prepared assessment in the format of URL/links through WhatsApp, Telegram, Instagram, Facebook, and others social media platform. The questionnaires need to be confidential for protecting and respecting the humanity of respondents.

3.4.1 Primary Data

Source of data having the intention of directly gathering information for the goal of determining the research by looking at the relevant variables. According to Form plus Blog websites (2021), primary data is the type of data that is direct acquired

from the data source without undergo any existing sources. By distribute the questionnaire to respondents can ensure that the reliability of data, while at the same time the findings will not be damaged. The outcome of results would be either vital for study or not.

3.4.2 Secondary Data

Secondary data is also utilized in this study as an approach for collecting information needed. The secondary data is consists of a broad range of information that can obtain from the reading materials like journals, books, articles, newspaper, and other internet-based sources. According to Sekaran (2003), the researcher can attain the necessary information and knowledge from past research that had been conducted and done by other researchers. As a result, key and helpful materials will be chosen and gathered for this literature review from the ScienceDirect, Google Scholar, and Emerald Insight databases.

3.5 Research Location

The study was carried out in Malaysia. The rationale behind this choice is because the Small and Medium Enterprises is one of the backbone economy towards Malaysia. It is also embracing the digitalization and contribute to the Malaysia economy. Hence, there is a possibility of obtaining all necessary and relevant data from these country.

3.6 Time Horizon

Cross-sectional research. Study can be done if data is only acquired once, maybe over a time period of weeks, or months, to address the research question. This kind of research is known as a one-off or cross-sectional research.

Long-term research. To address the study question, the researcher may occasionally need to look into individuals or events at various moments in time. For instance, to determine the effects of a change in upper executives, a researcher could attempt to compare employee behaviour prior to and after the change. This is the case

because the study took place longitudinally throughout time rather than cross-sectionals at two different times in time. A prospective study is one in which information on a regression model is gathered over the course of two or more time points in order to address a specific research issue.

3.7   Sampling Design

Sampling is a technique of choosing the suitable component for target population in case to achieve the purpose of research (Sharma, 2017). Frequency or indicative population and non-probability sampling are the two different categories of sampling procedures. Simple random, standardised random, divided random, clusters, and multistage techniques are all types of probability sampling. While quota, volunteer, purposeful, and random sampling are all considered non-probabilistic. The probability sampling can also know as random sampling which each individual has the equal chance and probability to be chosen then answers the questionnaire that disseminate by the researcher. The used of probability sampling allows the researcher to have a general view and make inference of whole target population. For the non-probability sampling, Instead of using select group, it is focused on the researcher's subjective assessment. It is a sampling technique where not every person has an equal chance to respond to the survey.

Probability sampling has been chosen to use in this study of research. The questionnaires were designed using Google Form which is enable the researcher easier to complete and collect the data from final respondents. The questionnaires will be dedicated to a connection like URL which it can access easily to the target respondents via email, social media or internet-based applications like WhatsApp, Telegram, Facebook and so on. The sample size is selected among the small and medium enterprises to know their quality performances.

3.7.1   Sampling Size

To make generalisations from a random sample while avoiding sampling errors or bias, the sample size must be large enough. A variety of elements that frequently

perplex persons doing questionnaires for the first time determine what is appropriate. This is due to the fact that, rather than the percentage of the study sample that is included in the analysis, what is important is the absolute size of the sample chosen in regards to the uncertainty of the workforce, the researcher's objectives, and the sort of statistical deception to be used. based on the data (Taherdoost, 2016). Although it is less probable that the outcomes will be biased with a bigger sample, when the sample size exceeds a particular level that must be matched with the researcher's resources, a declining return can be readily found (Gill et al., 2010). To be honest, a bigger sample size does minimise sampling error, but only at a slower rate. Numerous statistical formulas can be used to determine sample size. To compute sample sizes for categorical data, there are a variety of methods that combine multiple different formulas. It will aid researchers in determining sample size in Krejcie and Morgan's table. So, the researcher does not need to make the study on each of the sample. In this research, the population is 1900 person so by referring to the figure, researcher just need to get a feedback from 320 person.

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size   Source: Krejcie & Morgan, 1970

Figure 2: Krejcie & Morgan table

3.8   Pilot Test

A pilot test is one of the essential parts of research where it is conducted by using questionnaire form for data collection. This is due to the fact that the pilot test represents the response rate in this study and helps assure a good response rate. It is preferred to small-scale investigations where the usability of the questionnaire is improved before the performance of the research study as a whole is enhanced. According to Browne (1995), "Use at least 30 or more participants to estimate parameters," is the typical rule of thumb. This helps researcher to refine the questions constructed in questionnaire whereas there will be no problems occur for actual respondents in answering survey (Saunders et al., 2016). In addition, It enables the researcher to strengthen the relevance of the research question and the dependability of the data that will be gathered, which will ultimately help the study succeed (Thabane et al., 2010). In order to gauge the questionnaire among chosen respondents who were in middle management, a pilot study was done.

3.9   Questionnaire Design

This research used quantitative method for collecting the primary data by using survey form. An identical set of questions from questionnaire survey will be distribute to a large group of target respondents for quantitative analysis. The data collection is easy to make comparison as the questionnaire will be distribute to different respondents (Saunders et al., 2016). The questionnaire is designed through Google Form whereas distributing it in URL or link format to your target audience is simple and cost-free. In addition, Google Forms can effectively administer surveys. By doing so, researcher can distribute the survey form through social media, e-mail, or others online-based application which correspond to the contactless during this crisis. The target respondents can easily access to the questionnaire through computer, mobile phone, pad, tab, or other devices which it can connect to network. Besides, it also helps to save time on data collection where the needed information can be easier transmitted into Excel spreadsheet.

There are 3 parts in the questionnaire, namely Part A, Part B, and Part C. Part A will emphasize the general information of the respondents. In Part B, the questions

will be related to the independent variable such as Research and Development, Web Design and Lean Six Sigma which are the tools of technology innovation towards small and medium enterprises quality performances. While Section C will focus on the dependent variable which is the small and medium enterprises quality performances. To answer and accomplish all study questions and research objectives, this survey form was developed. The respondent that can answer this questionnaire is in the middle of management.

Table 1: Sections in Questionnaire

Section A	Respondents' Background
Section B	The tools of technology innovation towards small and medium enterprises quality performances
Section C	Small and medium enterprises quality performances

Respondents will provide their responses using a Likert scale with a maximum of five points, as per the questionnaire's design toward the tools of technology innovation towards small and medium enterprises quality performances. For each question, respondents must select the most pertinent and appropriate response scale. On a scale of 1 to 5, strongly disagree is represented by a score of 1, followed by disagree, neutral, agree, and strongly agree.

3.10 Data Analysis

After collected all the data from respondents, these data need to be analysed so that it can provide a result for this research and each of the hypotheses. Due to the technology nowadays, there is a system called SPSS (Statistical Package for Social Sciences). This computer software can give a hand for this research to analyse and interpret the result based on data collected in this report. Hence, SPSS is utilized in this report as this research is conducting in quantitative method. SPSS is effective in managing a large volume of data and can accelerate the evaluation processes of the data collection and tabulation.

According to Pallant (2010), SPSS uses standard multiple regression where to obtain the reliability, accuracy, validity of the data gathered. When the questionnaire is conducting, SPSS can also use to test the hypotheses proposed. Besides, normal

multiple regression analysis will help to make evaluation on the collected data where to improve and strengthen the validity of the variables. SPSS can also help the researcher to carry out the hypothesis testing with the connection of all variables included. Then, there are 4 data analysis techniques which is descriptive, reliability, validity, Pearson correlation, Multiple Regression Analysis that will need to do for this research. (Hoque et al., 2018).

3.10.1 Descriptive Analysis

Descriptive statistics is an important part as it will assists the researcher to understand the data dissemination and examines the relationship between the variables. It is a technique that use to explain the basic characteristic of a research where it will give a summary for a particular data. According to Vetter (2017), the descriptive analysis can assist the researcher to summarize data collected in an effective and logical way. The frequency distributions, tables, histograms, charts, and central trends like mean, median, and mode will all be measured using this technique. Personal information about the respondent is contained in the demographic respondent segment such as age, experiences, industry, position, business entity, company did training and join any company programme will be presented using the descriptive study. Moreover, the frequency distributions will be used in this study and the findings can be explained in percentage terms where to describe the tools of technology innovation towards small and medium enterprises quality performances. The results are explained based on the mean and standard deviation values. The level of mean score can be classified into low, medium and high, based on the mean range as below of Table 2:

Table 2: Mean Score

Range of Mean	Level
0.00 – 1.67	Low
1.68 – 3.33	Medium
3.34 – 5.00	High

3.10.2 Reliability and Validity Analysis

The reliability and validity analysis are one of the important parts for researcher to conduct quantitative study in order to ensure the optimal of research quality. In this analysis, reliability test is used to ensure that there is internal consistency of reliability in the dependent variable and all of the independent variables. Besides, all the variables should have the same underlying structure whereas to be correlated in this study of research. While the validity test is referring to the accuracy and precisely of the measure. Researcher can obtain a credible output data through the consistency and accurate of measurements.

Cronbach's Alpha was utilised in this study to determine the average correlation between each item/measure and all other factors. Normally, it is employed to assess the consistency of data. The alpha coefficient has a value between 0 and 1. According to Hoque & Awang (2016), identifies alpha coefficient values of 0.5 and above as a valid metric to demonstrate the dependability of all variables. Table 3 displays the internal consistency and range of the Cronbach's Alpha Coefficient. More than 0.7 Cronbach's alpha is regarded as acceptable, more than 0.8 is outstanding, and 0.9 and beyond is great. Both the dependent and independent variables in this study will be examined for validity and reliability.

Table 3: Cronbach's Alpha Coefficient Range and Strength of Association

Cronbach's Alpha Coefficient	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Source: George and Mallery (2003)

3.10.3 Pearson Correlation Analysis

The existence and strength of the association between the dependent variable and the independent variable were examined using Pearson's Correlation Analysis. Because it can indicate whether there might be a relationship between the two variables, this analysis is thought to be a very helpful technique. The conclusion of this analysis will be a square that ranges from 0 (random outcome) to 1 (perfect linear relationship) or -1 (perfect negative relationship). The variance in the data from the line of best fit increases as the correlation coefficient, or r, approaches zero (zero). The variance in the data from the line of best fit is smaller the closer the correlation coefficient, or r, is to 1 /-1. The Pearson Correlation Coefficient Range is displayed in Table 4. In order to assess the strength of the correlation between three factors and technological innovation tools on the quality performance of small and medium-sized firms in this study, the researcher will apply Pearson's Correlation Analysis.

Table 4: Pearson Correlation Coefficient Range

Coefficient Range	Strength of Correlation
± 0.00 to ± 0.30	Weak
± 0.40 to ± 0.60	Moderate
More than ± 0.70	Strong

3.10.4 Linear Regression Analysis

The process of determining the link between the dependent variable and the independent variable across the levels of the moderator variable is known as multiple regression analysis. The trajectory of the relationship, the depth of the research, and the strength of the relationship may also be studied with the aid of this analysis. Guilford's rule of thumb is used to determine if a relationship is high or low in intensity. Additionally, more than one independent variable will be used in multiple regression analysis to construct multiple determination correlations and predict regression equations (Saunders et al., 2013). One of the best tools for assessing quantitative research data will be this one. On the basis of a number of independent

factors on the dependent variable, outcome findings will be examined and estimated. The multiple regression equation's general form is as follows: -

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3$$

Where:

Table 5: Equation of Multiple Linear Regression Analysis

Y	Dependent variable (Small and Medium Enterprises Quality Performances)
a	Constant
b_1	Influence of X_1 (Research and Development)
b_2	Influence of X_2 (Web Design)
b_3	Influence of X_3 (Lean Six Sigma)
X_1, X_2, X_3	Independent variables

3.11 Summary

In conclusion, research design and strategy are important since they can ensure the success of this study. Quantitative data is also used in this study. The researchers choosing survey methods and secondary data to collect data or resources for their studies. Furthermore, one of the distinctive characteristics of descriptive research is the ability to analyse both quantitative and qualitative research methodologies. As a result, while performing descriptive research, researchers might employ a range of strategies to improve the study process. To collect data, researchers also obtained samples from SMEs and the collected data will be examined and interpreted using descriptive, reliability, Pearson correlation, and linear regression approaches.

Table 6: Summary of Research Questions, Research Objectives, Research
Hypothesis and Data Analysis

Research Question	Research Objective	Research Hypothesis	Data Analysis
RQ1: 1. Is there any significance relationship between the influence of technology innovation and small medium enterprises performances?	RO1: 1. To test the significance relationship between the influence of technology innovation and small medium enterprises performances.		Descriptive Analysis, Mean, Standard Deviation, Cross tabulation, Cronbach's alpha
RQ2: 2. Is there any significance correlation between the influence of technology innovation and small medium enterprises performances?	RO2: 2. To examine the significance correlation between the influence of technology innovation and small medium enterprises performances.		Correlation Coefficient

		H1: There is a significant relationship between Research & Development and Small medium enterprises quality performances.	Multiple Regression
RQ3: 3. In which variable is most dominant in the technology innovation and small medium enterprises performances?	RO3: 3. To verify the most dominant in the technology innovation and small medium enterprises performances.	H2: There is a significant relationship between Web Design and Small medium enterprises quality performances. H3: There is a significant relationship between Lean Six Sigma and Small medium enterprises quality performances.	

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1   Introduction

In this chapter, the analysis of quantitative research regarding The Tools of Technology Innovation towards Small and Medium Quality Performances was discussed. The data was collected in order to make analysis as to meet with the objectives that have been set. The data analysis was conducted using statistical package for social sciences (SPSS) version 26. There were five main sections that will be discussed in this chapter. It included pilot test analysis result, analysis of respondent's demographic information, descriptive analysis, Pearson's correlation between independent variables and dependent variable, multiple linear regression analysis.

4.2   Results and Discussion of Descriptive Analysis

In related to the descriptive analysis, a number of 182 respondents were being analysed. The demographic profile for respondents is based on their age, experiences, industry, position, business entity, company did training? Did you join any company programmed?

4.2.1   Age

Figure 3 showed the age range of 20-29 years old with 142 or 78% is the most of the respondents participate in this research. The least respondents were in the age

range of 50-59 years old with 5 or 3% only. Furthermore, there are 22 (12%) respondents who age between 30 to 39 years old and 13 (7%) respondents are 40 to 49 years old had completed answered the questionnaire in this research.
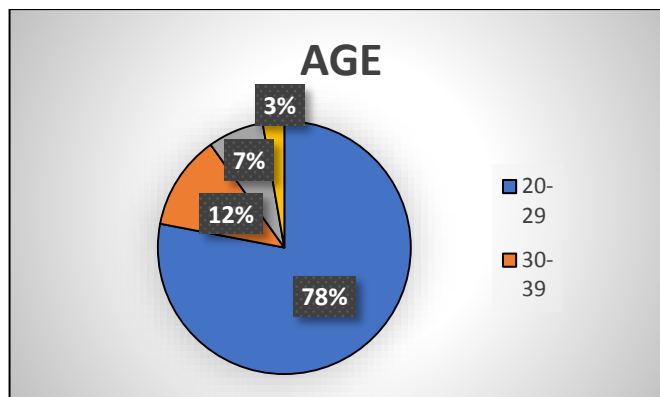
Figure 3: Age

4.2.2 Experiences

Figure 4 showed that from 182 respondents that participate in this research, there are 129 respondents were experiences below than 5 years which is 71%. The least experiences are more than 10 years which is only 9% (17 respondents only). Between 5-10 years, the percentage is 20% which is 36 respondents that have been experiences between those years.
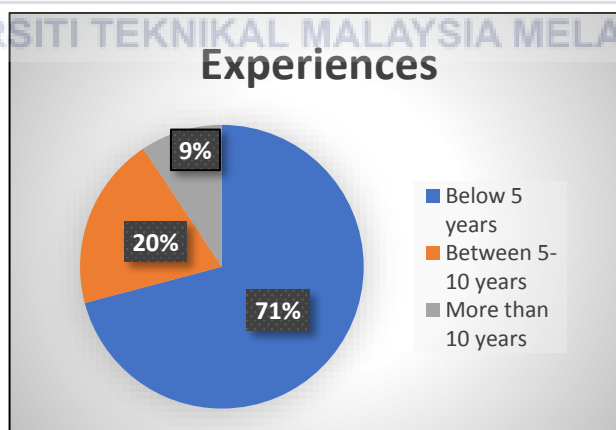
Figure 4: Experiences

4.2.3 Industry

From Figure 5 showed 93 respondents and 51% who was in manufacturing industry. For the food industry, 89 respondents and 49% had answered the research survey. The data analysis showed that the number or percentage of manufacturing industry was participated more than the number of food industry.
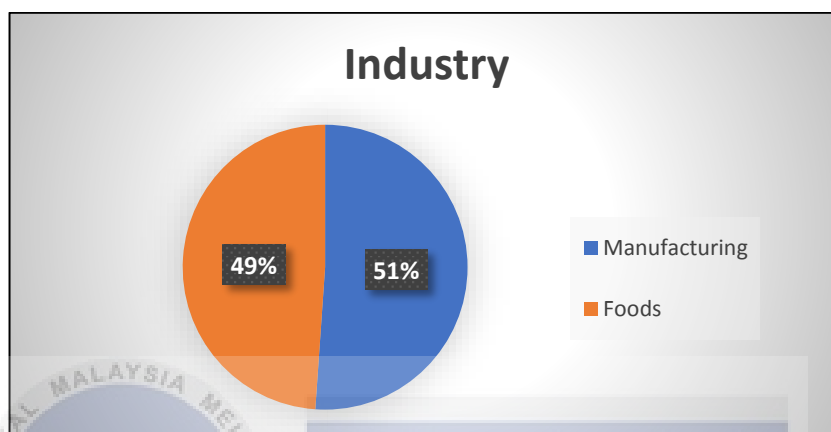
Figure 5: Industry

4.2.4 Positions

From Figure 6 showed 57 respondents from position of leader which is 31% is the mostly respondents in this research survey. The second mostly respondents are from position QC/QA which was 37 (20%) rather than those from positions technician around 29 (16%), position supervisor which the percentage is 12% (21). Otherwise, those from position manager and engineer were the least two group which was 20 (11%) and 18 (10%).
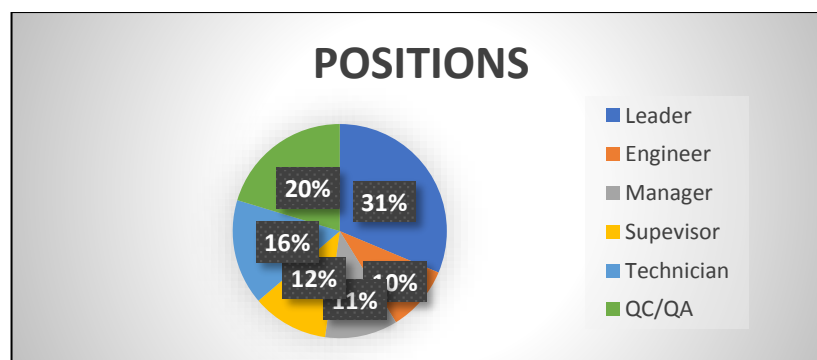
Figure 6: Positions

4.2.5   Business Entity

From Figure 7, it is obviously showed that all the respondent which 182 respondent which is 100% were into a company in this business entity.
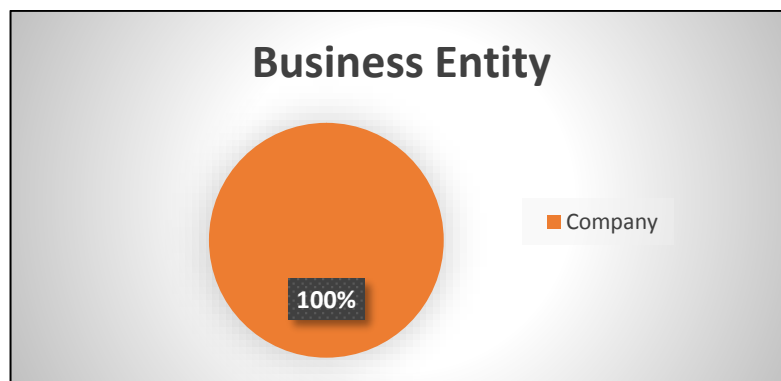
Figure 7: Business Entity

4.2.6.   Company did training?

The company did training distribution of the respondents who answered the questionnaire had showed in the Figure 8. It revealed that there are 182 or 100% of respondent agree on that statement.
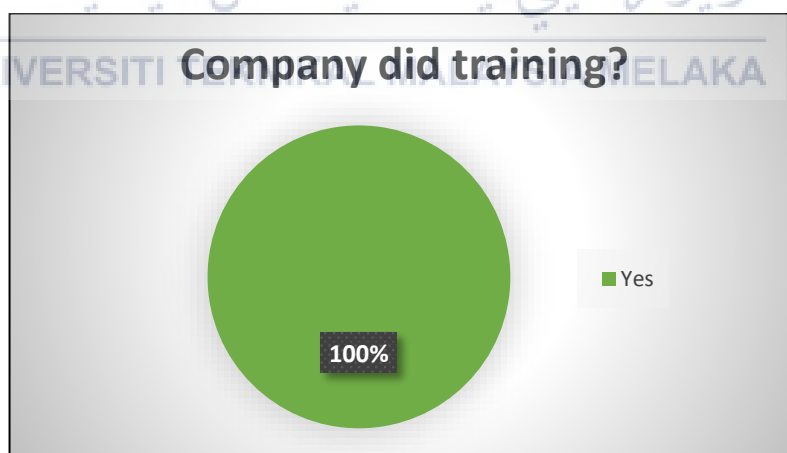
Figure 8: Company did training?

4.2.7 Did you join any company programme?

The question of "did you join any company programme?" distribution of the respondents who answered the questionnaire had showed in the Figure 9. It revealed that there are 111 or 61 percent of respondents answer yes, and 71 or 39 percent of respondents answer no. From the data analysis of this research, we can say that a lot of respondents join the company programme.
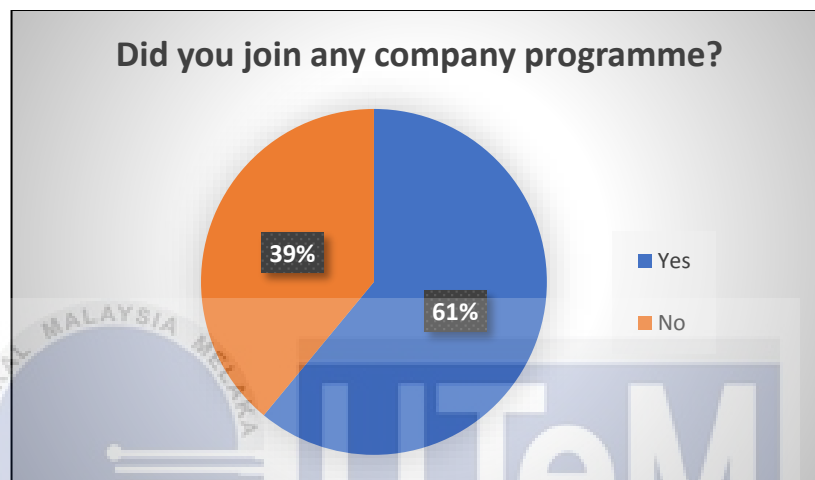
Figure 9: Did you join any company programme?

4.3 Results and Discussion of Data Analysis

4.3.1 Normality Test: Skewness

The Table 7 showed that Research & Development is one of the tools of technology innovation towards SMEs Quality Performances. It showed from the table that the mean values of each tool are as similar as possible and that the standard deviations are also the same condition. The respondent answers the ranking questions from 1 (strongly disagree) to 5 (strongly agree).

Table 7: Descriptive Statistics

	Mean	Standard deviation	Statistics (Skewness)	Std. Error (Skewness)
Research & Development	-	-	-	-
Iv1-Unique Products	4.59	.576	-1.050	.180
Iv2-Unique Services	4.52	.592	-.813	.180
Iv3-Competitive Advantage	4.55	.635	-1.103	.180
Web Design	-	-	-	-
Iv21- Design thinking	4.58	.597	-1.090	.180
Iv22- Information design	4.59	.575	-1.076	.180
Iv23- Feedback	4.73	.506	-1.647	.180
Lean Six Sigma	-	-	-	-
Iv31-Teamwork	4.75	.503	-1.936	.180
Iv32- Training	4.62	.590	-1.273	.180
Iv33- Non-value added	4.38	.739	-.738	.180
Quality Performances	-	-	-	-
Dv1-Customer focus	4.55	.590	-.927	.180
Dv2-Leadership	4.69	.530	-1.498	.180
Dv3-Involvement of employee	4.75	.448	-1.332	.180
Dv4-Decision Making	4.73	.516	-1.722	.180
Dv5-Plan Do Check Action (PDCA)	4.70	.504	-1.410	.180

Question 1 scored the highest mean with the value 4.59 because most of the respondents think that Research & Development is related with unique products. Then the question 3 follows with the second highest value 4.55 due to respondents agree that Research & Development can give a competitive advantage. The lowest mean value in Research & Development is question 2 with the value 4.52. This is because the respondents confuse either Research & Development can create unique services or not.

The highest value of standard deviation was the question 3 which is 0.635. The lowest standard deviation was the question 1 which is 0.576 which means the data is more reliable. However, the average standard deviation of these three questions was about 0.57 to 0.63.

The Table 7 above showed the Web Design in the tools of technology innovation that been used in quality performances. Through the table above, it showed the highest mean value is the question 3 with 4.73. This is because the respondents agree that feedback will lead better in quality performances. Then the second highest mean value is the question 2 which is 4.59 due to the respondents think that information design is useful and it will enhance the quality performances. The respondent think that information design offers straightforward directions so that the employee knows exactly what is the information about that can lead in term of quality performances. The lowest mean value is question 1 which is design thinking. This is because design thinking is crucial tools in web design.

Question 1 showed the highest standard deviation was 0.597 and Question 2 with 0.575 was the next highest standard deviation value. Question 1 had the highest standard deviation value which meant that the findings were less reliable. The lowest standard deviation was question 3 with 0.506 which is it will be more reliable compare than others.

The Table 7 above indicated the Lean Six Sigma that also one of the tools in technology innovation towards SMEs Quality Performances. It revealed through the table above showed the highest mean value is question 1 with 4.75 due to respondents agree with that teamwork is important in Lean Six Sigma towards the quality performances. This is because without teamwork, the Lean Six Sigma will not be achieved successfully. The second highest mean value is question 2 with 4.62. This question showed that respondents are agree with training that can enhance Lean Six

Sigma towards the quality performances and it can let employees to know and understanding more in Lean Six Sigma. The lowest value of mean is the question 3 with 4.38 as the respondents was disagree that Lean Six Sigma can reduce non-value added. This is because the respondents think that non-value added is difficult for them to reduce it.

Question 3 had the highest value of standard deviation as 0.739. The second highest value of standard deviation was question 2 with 0.590. Question 1 is the lowest value of standard deviation with the value of 0.503. It seen that question 1 was more reliable however the question 3 and 2 was less reliable.

The Table 7 above showed that the dependent variable which is the quality performances item. The table above showed that question 3 with 4.74 was the highest mean value. Respondents agree that involvement of employee is one of the important things in quality performances. The second highest mean value was the question 4 with the 4.73 due to decision making. This is because decision making can let the quality performances be better in the future. Then, the third highest mean value was the question 5 with 4.70. It showed that respondents agree that Plan Do Check Action (PDCA) can perform and better understand of the quality performances.

The fourth highest mean value was the question 2 with 4.69. It showed that respondents agree that leadership can enhance the quality performances. Leadership is an important in an organization. Lastly, the lowest mean value was the question 1 with 4.55. The question mentioned that customer focus is important in quality performances

Questions 1 with the value 0.590, were the highest standard deviation. The data is less trustworthy because the question has the biggest standard deviation. Question 2 was the second highest standard deviation with a value of 0.530 and question 4 was the next highest with a value of 0.516. Question 5 is the second lowest value of standard deviation which 0.504 while question 3 was the lowest standard deviation value and more reliable since the value is 0.448.

Following data collection, the data's normal distribution is assessed. For statistical analysis and structural equation modelling, the normal distribution is a key premise (Hair Jr et al, 2010). According to Hair Jr et al (2010), the term "normality" describes how a data distribution for a specific metric variable looks and how closely

it resembles the benchmark normal distribution used in statistical procedures. The statistical method of skewness is applied to check the normality.

Additionally, following an argument of Kline (2011) that an issue and value may be indicated by an absolute value of Skewness more than 3 and less than -3. As a result, it is advised that Skewness' absolute value be between -3 and 3. Based on this suggestion, the absolute value of the Deviation for each item in this research falls between (-3, 3), which is considered to be a reasonable range.

4.3.2 Reliability

In this study, reliability and validity of the measurement were tested in this research. Reliability is conducted in order to calculate all the variables which are related to each other. It is also to check the trustworthy of the questions. According to Heffner (2014), a reliability test is used to assess the accuracy of the data that was gathered. The survey or questionnaire might classify the sample's accuracy as reliability. Cronbach's Alpha values are used in reliability testing to determine the degree to which the questionnaire's components are positively correlated with one another. An array of Cronbach's Alpha Coefficient values serves as a gauge for reliability. According to Hulin et al. (2001), reliability levels between 0.6 and 0.7 are considered acceptable and levels of 0.8 or higher are considered excellent. However, a value greater than 0.95 may indicate an excess, so it's not always a good thing.

Table 8: Cronbach's Alpha Coefficient Range Value

Cronbach's Alpha Coefficient Range	Strength of Association
$\alpha \geq 0.9$	Excellent
$0.7 \leq \alpha < 0.8$	Good
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

(Source: Mohammad, Sulaiman & Salleh, 2015)

4.3.2.1 Pilot Test Reliability

Normally, pilot test is the first step to take before distribute the questionnaires to respondents. The purpose of conducting is to verify the accuracy and dependability of the questionnaires. Google form and questionnaires were distributed to 30 respondents in order to have their feedback regarding on the Tools of Technology Innovation towards Small and Medium Quality Performances. Before distribute the questionnaire, the researcher already asks an expert either they understand or not the question and after that only the researcher distribute the questionnaire to collect data for pilot test first. The result of the reliability for pilot test is listed below.

Table 9: Reliability Statistics (Pilot Test)

Variables	Cronbach's Alpha	N of Items
Research & Development (IV1)	.676	3
Web Design (IV2)	.723	3
Lean Six Sigma (IV3)	.648	3
Quality Performances (DV)	.791	5

According to Table 9 for this research, the independent variables 1 that been tested was Research and Development, independent variable 2 is Web Design and independent variable 3 is Lean Six Sigma. Furthermore, the dependent variable that has been tested was quality performances. The number of items for the independent variable was 3 questions per each variable while for the dependent variables have 5 questions. The Cronbach's alpha that has been tested using SPSS for Iv1 is α = 0.676, Iv2 α = 0.723 and Iv3 is α = 0.648. For dependent variable, the Cronbach's alpha is α

= 0.791. In this case, the reliability levels for all independent variable and dependent variables are considered good and acceptable.

4.3.2.2 Data Collection Reliability Analysis

Based on the Table 10 showing that there are three independent variables which are Research & Development (R&D), Web Design and Lean Six Sigma. In contrast with one dependent variable which is Quality Performances. All of these variables have been tested with 210 respondents in the research but only 182 questionnaire (87%) that had been tested and use in the data collection. This is because another 28 questionnaire (13%) has been rejected due to have some issues such as the respondent do not answer all the question that had been listed. A survey response rate of 50% or greater should be regarded as excellent (Lindsay, 2019). All of the data is calculate by using SPSS.

Table 10: Reliability Statistics (Data Collection)

Variables	Cronbach's Alpha	N of Items
Research & Development (IV1)	.738	3
Web design (IV2)	.661	3
Lean Six Sigma (IV3)	.640	3
Quality Performances (DV)	.777	5

In Research & Development, the Cronbach's alpha is α = .738 while for Web design, the Cronbach's alpha is α = .661 and the Cronbach's alpha for Lean Six Sigma is α = .640. As we can see here, the Cronbach's alpha for Web design and Lean Six Sigma is nearly 0.7. In term of the independent variables, the highest one is R&D then Web design and Lean Six Sigma was the least once. For Web Design and Lean Six Sigma, the levels of reliability are considered acceptable while the Research and

Development also considered as acceptable and good for the level of reliability. For all the independent variables, the items per each variable are 3 questions.

The dependent variable which is the quality performances, the Cronbach's alpha is α = .777 and the items are 5 questions. The dependent variable also been accepted and good in term of range in levels of reliability. The researcher can say that the question that given to respondent is trustworthy.

4.3.3 Correlation Test

Table 11: Correlation (Significant at 0.01 level, 2-tailed)

	MEANIV1	MEANIV2	MEANIV3
MEANIV1	1	.680**	.591**
MEANIV2	.689**	1	.617**
MEANIV3	.591**	.617**	1

Pearson Correlation Coefficient Analysis is a technique that measure the relationship between two or more independent variables. Technically, the reason of this analysis is used in this research because it is suitable in measuring quantitative data. Researcher analyzed the independent variables such as Research and Development, Web Design, Lean Six Sigma.

The result of correlation between R&D and Web design is significant, r (180) = .68, p=.000 while R&D and Lean Six Sigma is significant, r (180) = .591, p=.000. Table 11 shown that the correlation between Research and Development (R&D) with

Web Design is .680** and the correlation between R&D with Lean Six Sigma is .591**.

The significant between Web Design and Research and Development, r (180) = .69, p = .000 while the significant between Web Design and Lean Six Sigma is r (180) = .62, p = .000. As shown in the Table 11, the correlation between Web design and R&D is .689** while the correlation between Web design and Lean Six Sigma is .617**.

Next, the significant between Lean Six Sigma and Research and Development is r (180) = .60, p = .000 while between Lean Six Sigma and web design is r (180) = .62, p = .000. As shown in the Table 11, the result that shows for the correlation between Lean Six Sigma and R&D is .591** while the correlation between Lean Six Sigma and Web design is .617**.

The Asterisks are a means to draw your attention to correlations that are stronger than the typical alpha level in psychology, which is.05 or.01. Two asterisks (**) explain that the correlation is significant at the 0.01 level (2-tailed).

4.3.3.1 Value of Pearson Coefficient and the Strength of Relationship

Table 12: Pearson Coefficient Value

Pearson Coefficient ®	Strength of Relationship
0.70-1.00	Very strong relationship
0.50-0.69	Strong relationship
0.30-0.49	Moderate relationship
0.1-0.29	Weak relationship
0.01-0.09	No relationship

4.3.4 Regression Test

Multiple linear regression is a statistical technique tool that is used in this research in order to explain the relationship between two or more independent variables to one continuous variable. Consequently, three independent variables such as Research and Development, Web Design and Lean Six Sigma with Quality Performances as a dependent variable. The following tables showed the result of data analysis.

Table 13: Model Summary

Model	R-Square	F	Sig
Value	.342	30.786	.000

The overall regression model was significant, $F(3,178) = 30.79$, $p = <.001$, $R^2 = .34$. According to Table 13, the value in R-Square is .342 which is if the researcher converts in percentage (%), it is 34.2%. It is means that the data in the tools of technology innovation (IV) can explain the variance in quality performances (DV). The value of F is 30.786 and the value of significance is $< .001$.

Table 14: Coefficients

Constant	B unstandardized	t-value	Sig
MEANIV1	.088	1.305	.194
MEANIV2	.205	2.633	.009
MEANIV3	.256	3.950	.000

Table 14 shown that the B unstandardized for MEANIV1 (R&D) is .088 while for MEANIV2 (Web design) is .205 and the MEANIV3 which is Lean Six Sigma is .256. B unstandardized for Lean Six Sigma is the higher one among the others.

The result of significant t-value for Research and development is $t(181) = 1.31$, $p = .19$, Web Design is, $t(181) = 2.63$, $p = .009$ and Lean Six Sigma is, $t(181) = 1.31$, $p < .001$. As shown in Table 14, the t-value of MEANIV1 which is Research and Development is 1.305 while for MEANIV2 which is Web Design is 2.633. Furthermore, the highest t-value is MEANIV3 which is Lean Six Sigma and the value is 3.950. In this research, the higher of t-value will be good. This is because the confidence in the coefficient as a predictor increases with the t-value. Low reliability of the coefficient's predictive capacity is shown by a low t-value (Adam, 2022)

Next, the significance level for MEANIV1 which is Research and Development is $p = .194$ while MEANIV2 is $p = .009$ and the last one is for MEANIV3 is $p < .001$.
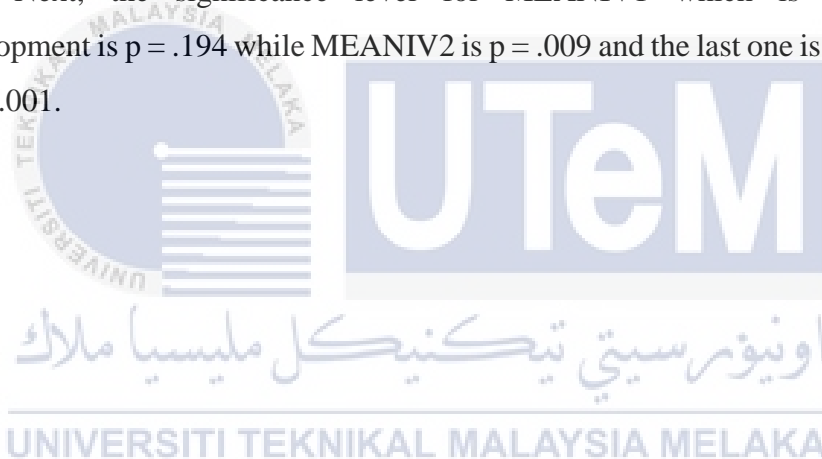
CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1   Introduction

In this chapter, the researcher will be discussed on the summary of findings in related with the research objectives achievement, research hypothesis achievement, implication of research by the researcher in this chapter. Besides, recommendation for the future research will be suggested and draw a conclusion from the data analysed.

5.2   Research Objectives Achievement

5.2.1   Research Objective Achievement 1

R01:   To test the significance relationship between the tools of technology innovation and small medium enterprises quality performances.

In the first research objective, researcher had found out the tools of technology innovation from chapter two. The researcher also had explained the relationship between dependent variable which is quality performances and the independent variable is the tools of technology innovation. The variables such as Research and Development, Web Design and Lean Six Sigma was the most determinants from previous research. The researcher examines the different tools of technology innovation mentioned with quality performances. All of the variable has related with the manufacturing and food industry since both of this industry is one of the data collections in questionnaire.

According to Table 13, as we can see the value in R-Square is .342 while the value of F is 30.786 and the value of significance is $p < .001$. Which means that Research & Development + Web Design + Lean Six Sigma can explain the data in quality performances. The significant is < 0.05 so the research objective 1 had been achieved.

5.2.2   Research Objective Achievement 2

RO2:   To examine the significance correlation between the tools of technology innovation and small and medium enterprises quality performances.

The second objective is using correlate in SPSS software. The data will be analysed as shown in the Table 11 which each variable had been tested to know either each independent variable have a strength towards each other or not.

As the researcher can see in the Table 11, the variables such as Research & Development with Web Design & Lean Six Sigma both are .680** and .591**. Next that had been analysed is among Web Design with Research & Development and also with Lean Six sigma whereby the value of correlation is .689** and .617**. The last correlation that had been tested is between Lean Six Sigma which is independent variable 3 with Research & Development and Web Design. The value for both of them are .591** and .617**. From this result, the researcher can see that all of the variables have related and strength towards each other since the questionnaire is answered by the middle management.

The researcher can conclude that all of the variable has a significance strong positive correlation since all of them have 2 asterisks while the value of correlation is between 0.5-0.7 and the $p < .01$.

5.2.3   Research Objectives Achievement 3

RO3:   To verify the most dominant in the tools of technology innovation and small and medium enterprises quality performances.

In research objective 3, the independent variable that the researcher can see is through Table 14 whereby MEANIV1 (The Research & Development) is .088 while MEANIV2 (Web Design) .205 and MEANIV3 (Lean Six Sigma) is .256.

In this research objective, to know which variable is dominant, the researcher will look into the higher value in B unstandardized which MEANIV3 (Lean Six Sigma) had the higher value .256 among the other variable. The slope of the line connecting the predictor variable and the dependent variable is represented by this value. This is because the majority of respondents choose agree (4 scale) and strongly agree (5 scale) for the questions that under Lean Six Sigma. Objective 3 also had been achieved.

5.3 Research Hypothesis Achievement

5.3.1   Research & Development

H_0:   There is no significant relationship between Research & Development and Quality Performances.

H_1:   There is a significant relationship between Research & Development with Quality Performances.

From the Table 14 in chapter 4, the result of regression for Research & Development against the quality performances was showed. The t-value is 1.305 and was the lowest one. According to Nakagawa et al (2007), the confidence in the coefficient as a predictor increases with the t-value. The significant value for Research & Development was $0.194 > 0.05$. The reason why the significance level and t-value of Research and Development is higher (p-value) and lowest one (t-value) is because the majority that answered this questionnaire are between 20-29 years old and below 5 years experiences. So, they are not known much about R&D because it is tough for someone to expert in R&D (Steve, 2017). The more support there is for adopting the null hypothesis, the larger the p-value and the smaller the absolute value of the t-value.Therefore, the multiple regression analysis can be assumed that Research & Development had no significant relationship with the quality performances since the t-value is the lowest one which is 1.305 and p value is $p > 0.05$ which is $p = .194$. As conclusion, the researcher accepted the null hypothesis (H0) and rejected the alternative hypothesis (H1).

5.3.2 Web Design

H_0:   There is no significant relationship between Web Design and Quality Performances.

H_1:   There is a significant relationship between Web Design and Quality Performances.

From the Table 14 above, the result of regression for Web Design against the quality performances was showed. The t-value is 2.633 and according to the Table 14, the t-value is the second higher. The confidence in the coefficient as a predictor increases with the t-value (Nakagawa et al, 2007). The significant value for Web Design was $0.009 < 0.05$. The reason why the significance level (p-value) and t-value of Web Design is good and excellent is because the majority that answered this questionnaire are from manufacturing industry and most of the manufacturing industries have their own web design and the respondent agree that web design is important for them to have design thinking, information design and also the feedback. This is because majority of the respondent choose agree and strongly agree in the questionnaire. The greater the absolute value of the t-value, the smallest the p-value, and the greater the evidence to accept the alternative hypothesis. So, that the multiple regression analysis can be assumed Web Design had significant relationship with the quality performances since the t-value is 2.633 (second higher), p value is $p < 0.05$ which is $p = .009$. As conclusion, the researcher accepted the alternative hypothesis (H2) and rejected the null hypothesis (H0).

5.3.3 Lean Six Sigma

H_0:   There is no significant relationship between Lean Six Sigma and Quality Performances.

H_1:   There is a significant relationship between Lean Six Sigma and Quality Performances.

From the Table 14 above, the result of regression for Lean Six Sigma against the quality performances was showed. The t-value is 3.950 and according to the Table 14, the t-value is the highest one. According to Nakagawa (2007), the confidence in

the coefficient as a predictor increases with the t-value. The significant value for support for employees was $0.000 < 0.05$. The reason why the significance level (p-value) and t-value of Lean Six Sigma is achieved because all of the respondents that answered this questionnaire are from middle management such leader, engineer, QC/QA, supervisor and others that stated in Figure 6 in chapter 4 and also the industry that the researcher give the questionnaire is manufacturing and food industries. So, from the Table 14 in chapter 4, the researcher can assume that Lean Six Sigma is used by both of the industry and the respondents understand very well regarding this Lean Six Sigma. This is because majority of the respondent choose agree and strongly agree in the questionnaire. The largest the absolute value of the t-value, the smaller the p-value, and the greater the evidence to accept the alternative hypothesis. So, that the multiple regression analysis can be assumed Lean Six Sigma had significant relationship with quality performances since the t-value is 3.950, p value is $p < 0.05$ which is $p < .001$. As conclusion, the researcher accepted the alternative hypothesis (H3) and rejected the null hypothesis (H0).

5.3.4 Summary for Hypothesis

Table 15: Summary Hypothesis

Hypothesis	Results
H_0: There is no significant relationship between Research & Development and Quality Performances.	**Rejected**
H_1: There is a significant relationship between Web Design and Quality Performances.	**Accepted**
H_1: There is a significant relationship between Lean Six Sigma and Quality Performances.	**Accepted**

5.4   Significant Contribution (implication) of the study

To fulfil the study's goal of identifying the link between technological innovation tools and high performance, the study's findings are analysed. In order to evaluate the link between independent variables and dependent variables, the researcher used the SPSS software. This included performing a pilot test, calculating Cronbach's alpha, descriptive statistics, correlating data, and performing multiple regression analysis (MRA). In conclusion, the respondents were perceived the tools of technology innovation which are Research & Development, Web Design and Lean Six Sigma will affect the quality performances but Research & Development are not significant relationship with Quality Performances.

From the industry implications, in order to examine which are the best that fit the tools of technology innovation towards SMEs Quality Performances, this study come to a view in providing an in-depth understanding and measurement of the antecedents which the tools of technology innovation.

Firstly, Lean Six Sigma which is the dominant variable is in the tools of technology innovation that had been agreed by the respondent in term of the quality performances based on the correlation and also in term of the regression whereby the significant of Lean Six Sigma is 0.000. As people believe that Lean Six Sigma had been adopted by many industries. Several industries have adopted Lean Manufacturing or Six Sigma as part of their management strategy to grow their market share and enhance revenues. Six Sigma is a process improvement and problem-solving methodology. (Arnheiter & Maleyeff, 2005). This finding outline is the importance in tools of technology innovation.

The contribution of this research towards the knowledge is among the respondents. The respondents will know about the tools of technology innovation especially towards the quality performances. The respondent also can gain a knowledge by develop what is already stated in the research such as Lean Six Sigma, Web Design and more. From this research also the respondents will know that there is a lot of tools that use in technology innovation towards the quality performances. In term of the technological innovation, most of people agree that it is a key driver of economic growth and human well-being (James & Adam, 2019).

5.5   Recommendation and Future Direction

For potential studies, there are a few of suggestions which can be made. The variances (R square) found in this study was 34.2%, suggesting that there could be a possibility where other tools of technology innovation be affected in quality performances. Therefore, it is proposed that extension of this research will be investigated in identifying possible tools of technology innovation. Additionally, in further research is to make improvement in the research framework whereby to identifying additional independent variables in construct with the original. In this research, brainstorming tools and collaboration software were new found added in independent variables. In the future, other antecedents should be encouraged to explore more.

Next, qualitative research method such as interview or face to face are recommended in obtaining details opinions from the public in the future. By using semi structured interviews or even Delphi method to gather data from the respondents as to seek their opinions on the tools of technology innovation towards SMEs Quality Performances. This study was carried out using quantitative method which is survey so it is quite difficult to achieve the exact number of respondents as stated in chapter 3.

5.6   Conclusions

The three research objectives had achieved by the researcher which are to test the significance relationship, to examine the significance correlation and to verify the most dominant between the tools of technology innovation and small medium enterprises quality performances. The contribution (implication) and recommendation of the research to guide future researcher about the similar research had been done in this chapter. The overall result of the study had been discussed in the last part of chapter 5.

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APPENDICES

APPENDIX A: GANTT CHART FOR FINAL YEAR PROJECT 1

Activities	Week														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Journal or Article Reading	�	▬													
Identify Research Title			▬												
Information Processing (Chapter 1)				▬											
Construct Chapter 1					▬										
Information Processing (Chapter 2)															
Construct Chapter 2					▬	▬	▬								
Information Processing (Chapter 3)								▬							
Construct Chapter 3									▬	▬	▬				
Prepare slide presentation												▬			
Submission for Report and Slide Presentation													▬	▬	
Presentation For FYP 1															▬

APPENDICES

APPENDIX B: GANTT CHART FINAL YEAR PROJECT 2

BIL	ACTIVITY	WEEK														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Questionnaire Development & Distribute Questionnaire	�|	▧	▧												
2	Data Collection				▧											
3	SPSS software Analysis					▧										
4	Chapter 4 & 5- Data Analysis, Conclusions and Recommendations						▧	▧	▧	▧						
5	Submission Final Draft C4&5										▧					
6	Development slide Viva											▧	▧			
6	Proposal Presentation													▧		
7	FYP Report Submission														▧	▧

APPENDIX C: QUESTIONNAIRE

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

THE TOOLS OF TECHNOLOGY INNOVATION TOWARDS SMALL AND MEDIUM ENTERPRISES QUALITY PERFORMANCES

INSTRUCTIONS:

Purpose of Survey:

The main purpose of this study is to examine the tools of technology innovation towards small and medium enterprises quality performances. Result from this study will be used for the research purpose.

Notes:

You had been carefully considered and selected to represent on behalf of respondent for this study. Your response is vital as it will contribute the tools of technology innovation towards middle management quality performances.

For further clarification and/ or instruction, please contact:

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STATEMENT OF CONFIDENTIALITY

Your provided information will be kept private. We won't reveal, publish, or divulge any information that could be used to identify, contact, or contact an individual, an organisation, or a company.

THE TOOLS OF TECHNOLOGY INNOVATION TOWARDS SMALL AND MEDIUM ENTERPRISES QUALITY PERFORMANCES

SECTION A: DEMOGRAPHIC PROFILE

* The following is a questionnaire prepared by the researcher to collect data regarding the title of the researcher's study, namely the tools of technology innovation towards small and medium enterprises quality performances. Respondents to answer this questionnaire is among the small and medium enterprises. Respondents will also be asked regarding personal information such as age, experiences, industry, position, business entity, company did training and join any company programme. Therefore, this section will analyse and further summarize the demographic details of the respondents.

This section lists some questions about your personal information. Please choose on the space given.

1. Age:

	20-29
	30-39
	40-49
	50-59
	Above 60

2. Experiences

	Below 5 years
	Between 5 to 10 years
	More than 10 years

3. Industry

	Service/Trading
	Manufacturing
	Foods
	Agriculture

4. Position:

	Leader
	Engineers
	Manager
	Supervisor
	Technician
	QC/QA

5. Business Entity:

	Sole Proprietorship
	Partnership
	Company
	Non-Profit Organization
	Cooperative

6. Company did training:

	Yes
	No

7. Join any company programme:

	Yes
	No

SECTION B: THE TOOLS OF TECHNOLOGY INNOVATION

Here are the statements that reflect the tools of technology innovation towards middle management quality performances. Please choose the proper scale to organise your statement. To choose your response, please click.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Iv 1	Research and Development	1	2	3	4	5
Item 1	**Unique product** can be developed with the aids of R&D.					
Item 2	**Unique services** can be developed in R&D.					
Item 3	R&D can be a source of **competitive advantage.**					

Iv 2	Digital Media	1	2	3	4	5
Item 1	**Design thinking** can ensure a clear output to user satisfaction.					
Item 2	**Information design** can become an user friendly.					
Item 3	**Feedback** can be used to make an improvement.					

Iv 3	Lean Six Sigma	1	2	3	4	5
Item 1	**Teamwork** is a key to make it work.					
Item 2	Continuous **training** can give benefits to the company.					
Item 3	**Non value-added** activity can be reduced within the process.					

SECTION C: SMALL AND MEDIUM ENTERPRISES QUALITY PERFORMANCES

This section provides statements that reflect the middle management quality performances. Please choose the proper scale to organise your statement. To choose your response, please click.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Dv	Small and Medium Enterprises Quality Performances	1	2	3	4	5
Item 1	**Customer focus** is a critical strategy.					
Item 2	**Leadership** is an important characteristics required.					
Item 3	The **involvement of employee** is an important things.					
Item 4	**Decisions making** is important in business.					
Item 5	**Plan Do Check Action (PDCA)** can be used to improve the product.					

We sincerely appreciate you taking the time to fill out this survey. We guarantee that all of your information will be kept fully private.

- END OF QUESTION -