GOVERNMENT GREEN PROCUREMENT IN MALAYSIA: BENEFITS, CHALLENGES, AND IMPACT OF COVID-19 ON SMALL AND MEDIUM ENTERPRISES (SMEs) GOVERNMENT SUPPLIERS

BY

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ABSTRACT

Climate change and environmental depletion are issues of grave concern that affect all living beings on earth, especially humans. People are more vulnerable to diseases due to these environmental problems which have led to a decrease in the average lifespan of humans. These adverse effects are primarily caused by human activities, which harm the people and the planet. In response, the government of Malaysia has taken action by prioritizing sustainability, including in procurement activities, to help save the planet. This procurement plays a vital role in promoting the government's message to the public and transitioning to government green procurement (GGP), which demonstrates the government's commitment to protecting the environment. The GGP is being implemented throughout the country in phases and involves local suppliers who provide green products or services that comply with the government's policies and standards. However, little is known about the benefits and challenges that Small and Medium Enterprises (SMEs) as suppliers face when participating in GGP, or when they participated in it, especially during the COVID-19 pandemic. This study therefore aims to; (i) examine the benefits to SMEs suppliers when participating in GGP; (ii) examine the challenges faced by SMEs suppliers when participating in GGP; and (iii) investigate the impact of the COVID-19 on SMEs suppliers who are participated in GGP during the pandemic. The study used a quantitative research method via a questionnaire survey among MyHIJAU mark holders in Malaysia, with 126 Malaysian respondents. MyHIJAU, the national green recognition, is a programme initiated by Malaysian Green Technology and Climate Change Corporation (MGTC) to boost the usage of green products and services throughout the country. An online platform, the MyHIJAU directory website, has been developed to ease the seller and the buyer with particular information on the products or services and also the company details. The analysis was conducted using both Statistical Package for Social Sciences (SPSS) and t-test analysis to conduct the descriptive analysis and to identify differences among SMEs. The findings indicate that SMEs are motivated to participate in GGP because they believe that their action can help alleviate environmental problems. Additionally, there is no difference between the benefits that both small and medium enterprises receive from taking part in GGP. However, medium enterprises face more challenges than small enterprises, especially in organization-related challenges. Finally, the COVID-19 pandemic has had a greater impact on small enterprises than on medium enterprises. This study provides valuable insights into SMEs' perceptions of their participation in GGP as well as during the COVID-19 pandemic.

خلاصة البحث

يعتبر تغير المناخ واستنزاف البيئة من القضايا ذات الاهتمام البالغ التي تؤثر على جميع الكائنات الحية على الأرض، وخاصة البشر. وكان الناس أكثر تعرضا للإصابة بالأمراض بسبب هذه المشاكل البيئية التي أدت إلى انخفاض متوسط عمر الإنسان. هذه الآثار الضارة ناتجة في المقام الأول عن الأنشطة البشرية التي تضر الناس والكوكب. رداً على ذلك، اتخذت حكومة ماليزيا إجراءات من خلال إعطاء الأولوية للاستدامة، بما في ذلك أنشطة المشتريات، للمساعدة في إنقاذ الكوكب. تلعب هذه المشتريات دورًا حيويًا في الترويج لرسالة الحكومة للجمهور والانتقال إلى المشتريات الحكومية الخضراء (GGP)، مما يدل على التزام الحكومة بحماية البيئة. يتم تنفيذ GGP في جميع أنحاء البلاد على مراحل وتشمل الموردين المحليين الذين يقدمون منتجات أو خدمات صديقة للبيئة تتوافق مع سياسات ومعايير الحكومة. ومع ذلك، لا يُعرف سوى القليل عن الفوائد والتحديات التي تواجهها الشركات الصغيرة والمتوسطة (SMEs) كموردين عند المشاركة في GGP، أو عندما شاركوا فيها، خاصة أثناء جائحة كوفيد-19. لذلك تهدف هذه الدراسة إلى: (1) فحص الفوائد التي تعود على موردي الشركات الصغيرة والمتوسطة عند المشاركة في GGP؛ (2) فحص التحديات التي تواجه موردي الشركات الصغيرة والمتوسطة عند المشاركة في GGP؛ و (3) التحقيق في تأثير كوفيد-19 على موردي الشركات الصغيرة والمتوسطة الذين شاركوا في GGP أثناء الوباء. استخدمت الدراسة طريقة البحث الكمي من خلال استبانة بين حاملي علامة MyHIJAU في ماليزيا، مع 126 مشاركًا ماليزيًا. وكان MyHIJAU مع الاعتراف الوطني الأخضر، هو برنامج بدأته شركة التكنولوجيا الخضراء الماليزية وتغير المناخ (MGTC) لتعزيز استخدام المنتجات والخدمات الخضراء في جميع أنحاء البلاد. وتم تطوير منصة على الإنترنت، موقع دليل MyHIJAU، لتيسير البائع والمشتري بمعلومات معينة عن المنتجات أو الخدمات وكذلك تفاصيل الشركة. ثم تم إجراء التحليل باستخدام تحليل الحزمة الإحصائية للعلوم الاجتماعية (SPSS) واختبار-ت لإجراء التحليل الوصفي وتحديد الفروق بين الشركات الصغيرة والمتوسطة. تشير النتائج إلى أن الشركات الصغيرة والمتوسطة لديها الحافز للمشاركة في GGP لأنهم يعتقدون أن عملهم يمكن أن

يساعد في التخفيف من المشاكل البيئية. بالإضافة إلى ذلك، لا يوجد فرق بين الفوائد التي تحصل عليها كل من الشركات الصغيرة والمتوسطة من المشاركة في GGP. ومع ذلك، تواجه الشركات المتوسطة تحديات أكثر من المشروعات الصغيرة ، خاصة في التحديات المتعلقة بالمنظمة. أخيرًا، كان لوباء كوفيد-19 تأثير أكبر على الشركات الصغيرة مقارنة بالمؤسسات المتوسطة. كما تقدم هذه الدراسة رؤى قيمة حول تصورات الشركات الصغيرة والمتوسطة عن مشاركتها في GGP وكذلك أثناء جائحة كوفيد-19.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Science (Accounting).

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In The Name of Allah, the Most Beneficent, the Most Merciful

This dissertation is dedicated

To my Beloved Mother,
Rus Sena binti Udin

My Beloved Father,
Masron bin Muhammad

And

My Dearest Siblings,
Liyana Syazwani
Adilah Awatif
Fatini Nasuha
Muhammad Anas Rahimi

May Allah bless us and keep us together until Jannah
Ameen

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LIST OF ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
CBA	Cost-benefit analysis
CIDB	Construction Industry Development Board
DOSM	Department of Statistics Malaysia
EU	European Union
GP	Green Procurement
GDP	Gross Domestic Product
GGP	Government Green Procurement
GHG	Greenhouse Gas
GITA	Green Investment Tax Allowance
GITE	Green Income Tax Exemption
GLC	Government linked companies
GPNM	Green Purchasing Network Malaysia
IGPN	International Green Purchasing Network
ICT	Information technology and communication
KASA	Kementerian Alam Sekitar dan Air (Ministry of Environment and Water of Malaysia)
KeTTHA	Kementerian Tenaga Teknologi Hijau dan Air (Ministry of Green Technology and Water of Malaysia)
MCO	Movement control order
MGTC	Malaysian Green Technology and Climate Change Corporation
MIDA	Malaysian Industrial Development Authority
MNC	Multinational corporation
MoF	Ministry of Finance of Malaysia
MP	Malaysia Plan
NEAC	National Economic Action Council
NGTCCC	The National Green Technology and Climate Change Council
OECD	Organisation for Economic Co-operation and Development
PKK	Pusat Khidmat Kontraktor (Contractors Service Centre)
SCP	Sustainable consumption and production
SDG	Sustainable Development Goals
SME	Small and Medium Enterprise
SPSS	Statistical Package for the Social Sciences
UNDP	United Nations Development Programme
UNEP	United Nation Environment Programme

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Climate change is one of the greatest challenges currently, with rising temperatures and sea levels, as well as extreme weather events that pose a threat to human health, natural ecosystems, and the global economy. According to the United Nations Environment Programme (UNEP) (2009), there would be an increment of 45 percent in greenhouse gas (GHG) emissions by 2030, resulting in a six percent rise in average temperatures if the existing patterns of production and consumption activities continue.

However, due to the impact of the COVID-19 pandemic, global carbon dioxide emission decreased slightly by 5.4 percent compared to the 2019 levels, but is expected to rebound to pre-COVID levels, which will then lead to a continuous rise in GHG emission into the atmosphere (UNEP, 2021). Hence, the United Nations Secretary-General proposed that the governments to take an opportunity to create more sustainable, adaptable, and comprehensive societies through the COVID-19 recovery plan execution. With regards to alleviating the effects of climate change, reducing GHG emissions and ensuring a more sustainable future, there is a growing need for governments and organizations to shift towards sustainable practices, including green procurement.

In line with this, under the 12th Malaysia Plan, based on GHG emission intensity in 2005, Malaysia is targeting to reduce GHG emission intensity to Gross Domestic Product (GDP) by up to 45 percent by 2030 (Economic Planning Unit [EPU], 2021). GDP is used to measure the monetary value of products and services produced by a country within a specific period of time and GDP has a positive relationship with GHG emission where, the

increment of GDP will also contribute to the increment of GHG emission (Tucker, 1995). One of the initiatives for the Malaysia to reduce the emission is through shifting towards government green procurement (GGP). The government can use its purchasing power to publicize the application of green products and services by engaging in the market as buyers while also regulating business practices since public expenditure plays a significant role in Malaysia's GDP (Vejaratnam et al., 2020).

With regards to green purchasing or procurement, it has been acknowledged in Europe, America, and New Zealand, and is being promoted under various names, such as 'green public procurement (GPP)', 'environmentally-preferable purchasing (EPP)', 'sustainable public procurement (SPP)', and government green procurement (GGP) (International Green Purchasing Network [IGPN], 2010). In Malaysia, while the term, 'GGP' is used in official government documents, for example the 11th Malaysia Plan (EPU, 2015) and 12th Malaysia Plan (EPU, 2021), previous research has also used the other terms mentioned above (McMurray et al., 2009; Islam & Siwar, 2013; Ahmad & Buniamin, 2020). For consistency, this dissertation uses the term, 'GGP' which can be defined as:

> Government Green Procurement (GGP) refers to the acquisition of products, services and work in the public sector that takes into account environmental criteria to conserve natural environment and resources, and minimizes and reduces negative impacts of human activities (Ministry of Energy, Technology and Water Malaysia [KeTTHA], 2010).

The implementation of GGP is contingent upon the availability of products and services which meet the standards set out in the GGP guidelines.

Past research has indicated that green procurement in the country has been monopolized by major foreign corporations (Abidin, 2010), while many local small and medium enterprises (SMEs) still do not common about the practices (Eltayeb & Zailani, 2009). However, in 2022, there has been an increase in green practices among SMEs, as

evidenced by the growing number of green companies applying for MyHIJAU mark recognition, as listed in the MyHIJAU directory (MyHIJAU, 2022a).

The involvement of SMEs in the green procurement area is important as SMEs produce a major portion of the world's output (Hutchinson & Hutchinson, 1995). These enterprises are crucial to the economy, contributing the highest percentage to growth (Confederation of British Industry [CBI], 1996); in fact, their economic importance is undeniable. SMEs are widely regarded as 'an integral and dynamic part of a healthy economy' (CBI, 1996), providing innovation, competition, flexibility in the labor market and serving as a critical source of job creation. Although large, multinational corporations play a significant role, the current fabric of the social and economic systems would collapse without SMEs (Gerstenfeld & Roberts 2000).

The SME Annual Report 2020 evinces that, SMEs are a significant contributor to Malaysia's economic growth.

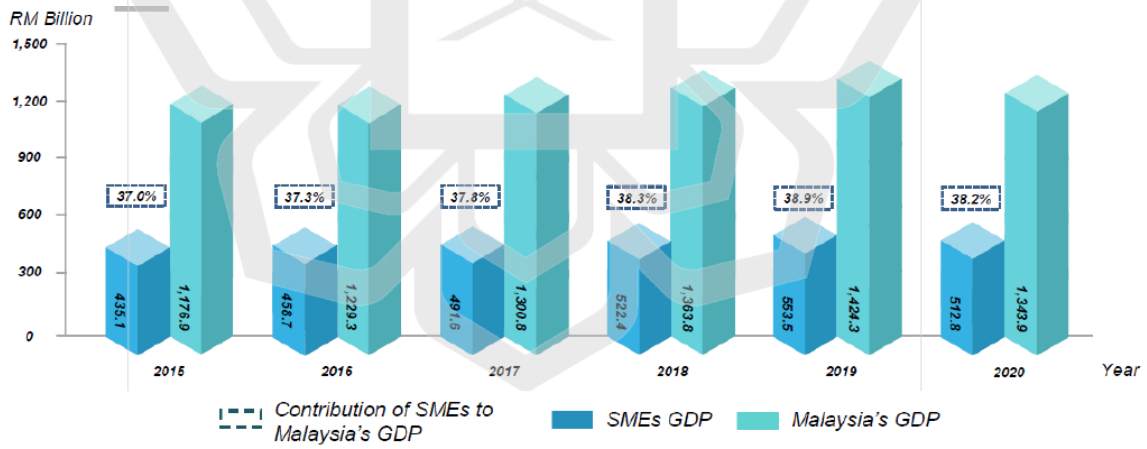


Figure 1.1 Performance of SMEs' GDP 2020
Source: Department of Statistics Malaysia (DOSM), 2021

Figure 1.1 shows that the SMEs' GDP contribution was 38.2 percent of the total GDP in 2020 (SME Corp, 2021). Since 2003, for the first time in 17 years, SMEs' GDP growth was lower than Malaysia's GDP, due to the COVID-19 pandemic (DOSM, 2021).

SMEs account for over 98 percent of the total business establishments in Malaysia (SME Corp, 2021) and contributed more than 80 percent to SMEs' GDP, both the Services and Manufacturing sectors remain the main drivers of SMEs' activities (DOSM, 2021). However, the engagement of SMEs in manufacturing activities has led to an increase in pollution and waste, which is why it is important for SMEs to participate in green procurement as it has a significant impact on the economy, industry, and environment (Aznin et al., 2017; Haslinda & Muruga, 2015).

The MyHIJAU SME & Entrepreneur Development Programme was launched on 23rd October 2012 by the government as a means for SMEs, including those owned by Bumiputera and women, to participate in green procurement. The programme aims to encourage the adoption of green practices and locally produced green goods and services as the large number of SMEs in Malaysia has made them a vital part of the country's industrial growth (MyHIJAU, 2017).

Although SMEs' participation in GGP has been encouraged by the government however, due to their size, they have been less recognized by the public. Other than that, large and foreign companies, with various resources and which are better equipped, have overshadowed SMEs' involvement in GGP (Gerstenfeld & Roberts, 2000). Based on this, the current study explores the benefits and challenges faced by SMEs in participating in GGP. As the research was conducted after the pandemic ended, the researcher also explored the impact of the pandemic on SME suppliers, as SMEs are widely recognized as one of the most affected groups during the pandemic (Dua et al., 2020).

1.2 PROBLEM STATEMENT

Prior research has suggested that green procurement is not common among SMEs and is mainly practiced by foreign and large companies in Malaysia (Abidin, 2010; Eltayeb &

Zailani, 2009, Ghazilla et al., 2015). This is because SMEs lack the resources and expertise to meet the green criteria for their projects (Abidin, 2010). In 2022, although the involvement of SMEs in the green procurement area can be identified from the MyHIJAU mark application, however, the low participation of SMEs in GGP is evidenced by 2021 statistics, in that from the number of registered 1,226,494 SMEs in Malaysia (SME Corp, 2022), only about 5,000 or approximately 0.4 percent SMEs participated in green industry (MyHIJAU, 2022a).

Aldenius and Khan (2017) showed that engagement with GGP can benefit companies in terms of environmental improvement and diffusion of green technologies. Additionally, while increasing resource efficiency, green procurement can minimize costs and waste, which can affect the manufacturing businesses, prices, available services, and company attitude (Masudin et al., 2020; NyachombaMachira & Juma, 2016). Despite the benefits shown, the low participations in GGP have raised concerns with whether or not SMEs can receive the same benefits as larger companies.

This research also focuses on the challenges faced by SMEs as GGP suppliers, with cost being the main barrier to engagement (Aldenius & Khan, 2017). The high cost of designing green technologies, products, or services can discourage SMEs from entering the green market. Additionally, the lack of legislation in the country has reduced the importance of shifting to green procurement and hinders SMEs from growing in this market as the GGP initiative in the country is not mandatory yet (Bidin et al., 2020). This research proves that the biggest challenge faced by the SMEs to participate in GGP is they are not being properly treated, thus leading to poor participation of SMEs in GGP.

The study also considers the impact of the COVID-19 pandemic on SMEs in Malaysia, which led to the shutdown of many businesses, mostly SMEs (Dua et al., 2020). The reduction of environmental impact on the company's activities concludes that SMEs

that engage with GGP can be categorized as eco-friendly SMEs (Chan et al., 2021) and relying on sustainable materials and components during the pandemic, forced them to face disruptions in the supply chain which causes delays in delivery and increased costs. SMEs may be particularly vulnerable to face reducing demand issues as environmentally-friendly options are often more expensive than their less sustainable counterparts. Although Latham (2021) found that the consumers' behavior has shifted towards considering more sustainable products and services, however, the COVID-19 pandemic badly affected the SMEs which reduced their ability to meet the demands of consumers.

Finally, this study examined the challenges that exist among SMEs throughout their involvement in GGP. According to Gerstenfeld and Roberts (2000), the 'one thing that makes SMEs similar is that they are all different'. They have different innovation and ways to solve problems due to the size of their company. Small-sized companies often face higher risks than medium-sized companies as they may have less financial stability, fewer resources to survive during an economic downturn and less diversification of their product or service offerings compared to medium-sized companies. This encouraged the researcher to conduct this study.

1.3 MOTIVATION OF THE STUDY

Several reasons motivated the researcher to undertake this study. First, it was the fact that GGP is one of the key components of Malaysia's Sustainable Development Goal (SDG) and according to Adham and Siwar (2012), government procurement represents about 24 to 33 percent of GDP over the past decade. This shows that GGP has a significant part of the country's procurement activity,

Secondly, although prior research has presented the importance of the procurement activity for a government, however, in academic education and research, it is still being

neglected (Ribeiro et al., 2018; Thai, 2001), with only few studies regarding GGP, especially in Malaysia. According to Thai (2001), it is believed that the limitation in workforce and resources has made procurement research being less prioritized till now.

Lastly, the issue of climate change has prompted the researcher to investigate the government's strategies for curbing this issue through procurement activity. The government has set a target of 25 percent GGP implementation within government procurement by 2025 (EPU, 2021) which shows the government commitment to protect the environment. The green procurement process is ongoing, and while it is not yet prioritized across the country, the government has planned for green activity as part of the country's long-term strategy. Hence, green procurement will have a significant impact on the country's future growth.

Based on the above, the significance of government procurement, the lack of studies on GGP as well as the strategies taken by the government to protect the environment, have motivated the researcher to undertake this area of study. The following section further explains the research objectives and research questions for this study.

1.4 RESEARCH OBJECTIVES (RO) AND RESEARCH QUESTIONS (RQ)

Stated below are the research objectives followed by research questions of the study:

RO1: To examine the benefits to SMEs suppliers when participating in GGP.

RQ1a: How would participation in GGP benefit SMEs suppliers?

RQ1b: Are there any differences in perception of the benefits of GGP between SMEs suppliers?

RO2: To examine the challenges faced by SMEs suppliers when participating in GGP.

RQ2a: What are the challenges faced by SMEs suppliers when participating in GGP?

RQ2b: Are there any differences in the challenges faced by SMEs suppliers when participating in GGP?

RO3: To investigate the impact of the COVID-19 pandemic on SMEs suppliers who participated in GGP.

RQ3a: How did COVID-19 impact the participation of SMEs suppliers in GGP?

RQ3b: Are there any differences in the impact of the COVID-19 pandemic on GGP participation by SMEs suppliers?

1.5 SIGNIFICANCE OF THE STUDY

The purpose of this study is to investigate the benefits, challenges, and impact of the COVID-19 pandemic on SME suppliers during their participation in GGP. The study also fills the gaps in the literature in area of GGP in the Malaysian context.

The main contribution of the current study would be the exposure of SMEs perceptions throughout their engagement in GGP especially after facing the pandemic. This exposure is voicing out both small and medium enterprises classification and any particular differences that exist among the enterprises in the academic area relating to GGP as well as in the public general information. Both small and medium enterprises perceptions gained in the current study portrayed their similar and contradict perceptions as compared to large businesses with medium enterprises mostly capturing the steps taken by large corporations in their business operation. This shows the importance of identifying the differences between both enterprises as from an economic view, both enterprises do group as one party, i.e, SMEs, which makes it difficult to understand the perceptions of each enterprise.

This study is also essential in exploring SMEs' engagement in GGP as they are a significant contributor to the economy and their participation in GGP can lead to the

development of a more sustainable industrial ecosystem. There also a need to move towards sustainability as a result of environmental depletion which has triggered various parties. Secondly, while larger corporations often have the resources to implement green procurement practices, SMEs may face significant challenges due to their limited financial and technical capacity. Therefore, understanding the benefits and challenges of GGP for SMEs can help identify strategies to support their engagement in green practices.

Additionally, the COVID-19 pandemic has highlighted the importance of sustainability and resilience in supply chains, making it even more crucial for SMEs to engage in GGP. This current research on the impact of the pandemic on SMEs as green product and service suppliers can provide valuable insights into how SMEs can adapt to changing market conditions and ensure their long-term viability as the perceptions of the suppliers among SMEs are contra with large businesses. Although the COVID-19 pandemic has shown people tend to be more sustainable (Filho et al., 2022), however green product or service suppliers among the SMEs still battling with the same issues faced by other conventional types of businesses.

Overall, research on GGP for SMEs is important to promote a sustainable industrial ecosystem, support SMEs in adopting green practices and ensure the long-term resilience of supply chains.

1.6 ORGANIZATION OF THE STUDY

This study is organized into five chapters, including this chapter. The first chapter covers the introduction of the dissertation, including background of the study, problem statement, motivation of the study, research objectives and research questions, and the significance of the study, followed by the organization of the study.

The second chapter focuses on prior literature on GGP in Malaysia. Firstly, it discusses government procurement, green procurement, and the latest GGP idea. In addition to discussing GGP practices in Malaysia, this chapter portrays the MyHIJAU initiative, as well as green procurement among SMEs. The chapter concludes by explaining the COVID-19 pandemic and the literature gap.

The third chapter describes the theory and research methodology of the study. This chapter presents the theoretical framework, followed by a description of the population and sampling, research design and method, development of questionnaire, as well as data collection for this study. Data analysis marks the end of this chapter.

Chapter four explains preliminary data analysis together with findings and discussions for all three objectives of the study. Finally, chapter five presents the conclusion, which covers the summary of research findings, implications of the study, as well as limitations and suggestions for future research. A detailed literature review is presented in the next chapter which includes an overview of GGP, MyHIJAU, the COVID-19 pandemic impact, and other particular areas to be focused on.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents the literature review in the context of government procurement, GGP, and the background of SME suppliers participating in GGP. The review also provides information regarding the COVID-19 pandemic and 2022 situation in the country. The chapter consists of nine sections: Section 2.2 is on Government procurement. Green procurement is detailed in Section 2.3. Next, Section 2.4 provides the background of GGP practices. Section 2.5 describes the MyHIJAU programme while Section 2.6 focuses on SMEs in Malaysia. Section 2.7 explains the COVID-19 pandemic in the country. Section 2.8 highlights the gaps of the study and finally, Section 2.9 consists of the summarization of the chapter.

2.2 GOVERNMENT PROCUREMENT

The process taken by the government or public sector entities acquiring goods or services is the definition of government or public procurement (Uyarra & Flanagan, 2010). In Malaysia, government procurement is the acquisition of supplies, services, and works in accordance with the instructions and regulations set by the Ministry of Finance (MOF) (Adham & Siwar, 2011).

Hawkins et al. (2011) emphasized that the government procurement market is the world's largest business sector. As a result, the activity amounting to 12 percent of the global GDP in 2018, making it a significant part of the global economy. In Malaysia, government procurement represents about 24 to 33 percent of GDP over the past decade (Adham & Siwar, 2012) and the 10th Malaysia Plan recognizes the activity as one of the

most important movements in developing innovation and encouraging SMEs to create products of national value.

It has a significant impact on the nation's direction when government procurement involves vast sums of money and the government can benefit from its purchasing capacity to implement the national agenda (Wan Abdullah et al., 2011). The public sectors have 'joint market power' (Lindström et al., 2020), which from the unity of several public sectors can contribute to an adequate large buyer and from this 'joint', it can impact the market more effectively, as compared to ordinary buyers (Ma et al., 2021). In other words, government procurement is a tool used by the government to implement the nation's agenda and make it known to the public.

The procurement process in Malaysia requires all government agencies to comply with government procurement laws and regulations, such as the Financial Procedure Act 1957 (Amendment 1972) (Act 61), Ministerial Functions Act 1969 (Act 2), Government Contracts Act 1949 (Revised 1973) (Act 120), Delegation of Powers Act 1956 (Act 358), Treasury Instructions, Treasury Circular Letters, Federal Central Contract Circulars, Treasury Circulars, Treasury Instruction Letters, Manuals, and Guidelines (Adham & Siwar, 2011). Additionally, any individual, company, or corporation wishing to participate in the government procurement of supplies and services must register with the MOF, and for works, they must register with the Contractors Service Centre (Pusat Khidmat Kontraktor; PKK) and the Construction Industry Development Board Malaysia (CIDB), which are agencies under the Ministry of Works (MOF, 2010, 2007, 1997).

The Malaysian government's plan for 2021-2025, outlined in the 12th Malaysia Plan, highlights the importance of sustainability in government procurement activities. Utilizing the power of large purchasers, the government may control the nation's procurement activity. The demand for green procurement activity can enhance the public

sector to form a market for sustainable products and services (Cheng et al., 2018; Michelsen & de Boer, 2009). This section is discussed in more detail in the following section, with a focus on how green procurement differs from public procurement.

2.3 GREEN PROCUREMENT

According to European Commission, green procurement is,

> a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured (Organisation for Economic Co-operation and Development [OECD], 2011)

In other words, green procurement is a common practice to avoid environmental damage and safeguard human health.

Salam (2008), stressed that green procurement is aimed at the items acquired to comply with the environmental goals, i.e. minimizing resource waste, promoting recycling, reusing, source reduction, and material substitution. In Malaysia and other Southeast Asian countries, green procurement is viewed as a developing concept due to their policies of accepting green procurement in their nation's practices, although the activity has been recognized in developed countries (Bohari et al., 2017). This can be evidenced by previous research indicating the year the green policy was enacted in each country. Other than that, as acknowledged by a collective body of research and publication on sustainable procurement, the purchasing activity plays a significant role in assisting an organization to achieve its sustainable development objectives (Walker & Phillips, 2009). Ruparathna and Hewage (2015), also believed that green procurement is one of the approaches to enhancing a sustainable manner.

UNEP (2008), also agreed that green procurement is the most strategize option to achieve targets in the environment, safety, human rights, and acquiring from small and

local businesses. According to McMurray et al. (2014) as well, appropriate guidance, awareness, and resource availability may enable more green procurement participation, which will improve more than just the improvement of an organization's image; instead, it will boost the working environment and conditions, efficiency, and transparency as well as the achievement of organizational goals and objectives.

The Malaysian private and public sector organizations are focused on performance requirements in the implementation of green procurement practices despite regulations often being based on social rather than environmental sustainability (McMurray et al., 2014). This is also demonstrated by Walker and Brammer (2009), who emphasized that Malaysian organizations' green procurement practices are characterized by a focus on the health and safety of their workers' and purchasing from small and local suppliers, whereas the majority of other nations emphasize green practices with an environmental policy (Simpson & Power, 2005; Srivastava, 2007; Svensson, 2007).

McMurray et al. (2014), in their research on Malaysia, detailed that the greatest barrier to adopting sustainable procurement in Malaysia is a lack of awareness and guidance, followed by a lack of resources, including expertise, which have been demonstrated by the actions taken by various organizations and the government. For example, Norman (2007) disclosed that the government agencies in Malaysia gave consent to obtain tropical wood products from a source deemed unsustainable. According to McMurray et al. (2014), this proves that although existing regulations in the country integrate with green procurement, the regulations however, are not currently linked to the green procurement agenda, and during 2013, there is no green procurement policies published in the country. This highlights the significance of a country's impact on a company's business practices.

Due to these challenges, the Malaysian government took measures to enhance green procurement in the country by introducing the GGP, which is discussed in the next section. As stated in Section 2.2, government procurement is viewed as the largest corporation in the country, hence establishing the green market will encourage more suppliers, particularly SMEs, to offer environmental protection products such as solar panel, bio-degradable plastic, water efficiency tools and others.

2.4 GOVERNMENT GREEN PROCUREMENT (GGP)

Governments and several corporations across the globe are dedicated to implementing environmentally friendly products and practices in response to urgent request for conservation of resources and sustainable environments (Salam, 2008). The public's knowledge and awareness of the current environment state, as well as the availability of green products and services, have contributed to the emergence of a new market in Malaysia. As the largest purchaser, the government may encourage the use of environmentally friendly products and services in both the public and commercial sectors, resulting in the launch of GGP as one of the government's responses to environmental protection.

The European Union (EU) defines GGP as the process by which public authorities aim to purchase goods, services and works with a lower environmental impact throughout their life cycle compared to those with the same primary function (European Commission, 2008). Other terms associated with GGP found in the literature are ‘green public procurement (GPP)’, ‘environmentally-preferable purchasing (EPP)’, ‘sustainable public procurement (SPP)’, and government green procurement (GGP) (IGPN, 2010).

The UNEP (2011) considers government procurement as a cross-cutting problem that can have a positive impact on a wide range of concerns. This is significant in terms of

the implementation of GGP, which utilizes government procurement to solve problems and drive government objectives such as reducing GHG emissions and assisting SMEs. Other than that, GGP has numerous benefits, such as achieving environmental goals, saving money in the long-run, encouraging innovation, creating a market for green products, services, and work, and creating jobs (Testa et al., 2012; Adham & Siwar, 2012; Brammer & Walker, 2011; Walker & Phillips, 2009; Da Costa & Da Motta, 2019; Rizzi et al., 2014). In general, the benefits of implementing GGP extend to economic and social factors as well as the environment (Barr et al., 2005; Chen, 2005; Ho et al., 2010; McCrudden, 2004; Parikka-Alhola, 2008; UNDP, 2008).

GGP can assist in reducing GHG emissions and air pollution, increasing energy and water efficiency, reducing waste, reusing and recycling, the utilization of renewable resources, and the development and deployment of cleaner technologies. Since the GGP also covers the social aspects, it also helps in reducing poverty, increasing fairness in gender and ethnicity, and improving public working conditions. Therefore, GGP is essential for mitigating environmental and social concerns. This is also consistent with McCrudden (2004) and Faith-Ell et al. (2006), who believed that the government, as the country's greatest purchaser, has the ability to regulate the use of purchasing power to achieve social and environmental goals.

In a context of economic implications, according to Ho et al. (2010), GGP is the largest contributor to green procurement in various countries due to the significant volume of public expenditure and the broad range of products purchased by the government, including from stationery, furniture, and vehicles to infrastructure management, such as public schools, hospitals, and public transport. Hence, public procurement rules can influence a wide group of market sectors willing to comply with public standards due to the high volume of this market.

GGP's immense purchasing power, which can greatly improve the green market (Dou et al., 2014), exerts significant market pressure on suppliers (Testa et al., 2012; Xu et al., 2016). The industry and suppliers must conform to standards and procedures to meet consumer demand. This is because public procurement is governed by laws and procedures that specify the requirements for products and services in line with public policy, and the industry and suppliers must adhere to these standards and procedures in order to satisfy public demand. Therefore, government procurement controls the market by listing how companies should design and serve green goods and services and remove those that do not comply with the requirements.

2.4.1 Government Green Procurement (GGP) Practices in Malaysia

In developing countries, many are dealing with scarcity of natural resources, which makes the implementation of GGP even more important (Geng & Doberstein, 2008), with Malaysia being one of them. GGP in Malaysia was first introduced in 2012 where some government agencies participated in the pilot project to overview and give information regarding sustainability activities as well as the current state of the environment. The National Green Technology and Climate Change Council (NGTCCC) was formed by KeTTHA in 2009 which in line with the National Climate Change Policy introduced under the 9th Malaysia Plan (Ministry of Natural Resources and Environment Malaysia [MNRE], 2009). Generally, the establishment of the NGTCCC is significant for GGP and is the basis to how GGP was introduced first in the country.

The government of Malaysia is committed to improving its procurement process and GGP is part of the transformation agenda (Adham et al., 2012). By 2020, Malaysia aimed for GGP to contribute at least 20 percent of government procurement (EPU, 2015) and the government managed to gain 20.7 percent between 2016 and 2019, exceeding the

target derived (EPU, 2021). As proposed in 12th Malaysia Plan, in 2025, Malaysia aimed for GGP to contribute at least 25 percent of government procurement (EPU, 2021).

While supporting the local economy, GGP activity has been acknowledged to be able to transform the national environment through innovation. Instead of catalyzing sustainable consumption and production (SCP), it has been proposed that GGP could form large new markets and improve business performance (KeTTHA, 2012; Adham et al., 2012). It is also believed that GGP could create a domino effect to enable the economy to flourish. The 12th Malaysia Plan has designed for Malaysia to achieve by 2025, MSMEs (Micro, Small, and Medium Enterprises) contribution to Malaysia's GDP is 45 percent of the total GDP, a 3.6 percent increment in labour productivity growth, and reduce the unemployment rate by 4 percent (EPU, 2021). One of the initiatives to reach these targets is to generate 230,000 green jobs by 2030, as proposed by Malaysian Green Technology and Climate Change Corporation (MGTC), (MGTC, 2022).

Malaysia had already established GGP guidelines in 2014, 2018 and 2020 for public green purchasing and procurement policies. The guidelines were introduced for government procurers through the MGTC. Through these policies, the public sector can strongly influence the strategies and behavior of the private sector and organizations towards cleaner and more efficient generation designs (Bohari et al., 2020; Razali et al., 2021; de Giacomo et al., 2019; Testa et al., 2016). Awareness campaigns, like the International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM) can encourage the use of green technology and eco-products, contributing to green growth, and showcasing Malaysia as a green-technology hub.

Compared to non-green procurement, the green procurement process requires companies to ensure their products or services recognized with green recognition or certification from authorized bodies approved by the Malaysian government. As

sustainable procurement and green purchasing practices are facilitated by government policies and regulations, clear formulation of GGP policies is important to avoid confusion among government officials. With regards to the emergence of green activities in the country, the government of Malaysia has established the national green recognition, the MyHIJAU recognition. MyHIJAU recognition is one of the tools that can be used by a company to supply green products or services to the government of Malaysia. The details about MyHIJAU are explained next.

2.5 MyHIJAU

MyHIJAU is an initiative by the MGTC (formerly known as Malaysian Green Technology Corporation or GreenTech Malaysia), to promote the use of environmentally friendly products and services throughout Malaysia. The programme was launched in 2012 to support the implementation of GGP (MGTC, 2017). Ahmad and Buniamin (2020) also agreed that the MyHIJAU programme is an effective platform for promoting GGP. The goal of the programme is to encourage the adoption of sustainable practices in the country, while stimulating the growth of Malaysia's green economy. Initially, MyHIJAU was an action taken by the government of Malaysia to boost green procurement in the country.

MyHIJAU promotes sustainable production and consumption through four thrusts: (a) MyHIJAU Eco Label scheme; (b) MyHIJAU Green Procurement (which lists the criteria of green products, services and works for GGP); (c) MyHIJAU Green Directory, an online platform that assists buyers by providing information on green services and products; and (d) MyHIJAU SME, which promotes green awareness and business matching within industries (Hassan et al., 2019). In line with the establishment of the programme, the government of Malaysia also endorsed the establishment of the MyHIJAU mark, Malaysia’s official green recognition (Ahmad & Buniamin, 2020). The established

recognition grouped together, under one single mark, certified green products and services that comply with local and international environmental standards, indicating compliance with global environmental standards. The acknowledgment received from the MyHIJAU mark gave an opportunity for the products or services to contribute to GGP activity while receiving incentives from the government. The incentives are Green Investment Tax Allowance (GITA) which is eligible for the companies that procure the MyHIJAU mark products, and Green Income Tax Exemption (GITE) which is eligible for the providers of green services (MGTC, 2021).

The MyHIJAU programme is the initiative taken by the government Malaysia to push local industries, especially SMEs, to participate in government programmes, thus benefitting them at the international level (KeTTHA, 2014). MyHIJAU only receives applications from Malaysian-based companies, thus helping local industries gain public recognition. Considering this, the green market in Malaysia is expanding, and local suppliers and purchasers may benefit from these practices.

2.6 SMALL AND MEDIUM ENTERPRISES (SMEs) IN MALAYSIA

The National Entrepreneur and SME Development Council (NESDC), formerly known as the National SME Development Council (NSDC), defines an SME based on its annual sales turnover or number of full-time employees (SME Corp, 2021).

Table 2.1 Definition of SMEs (SME Corp, 2021)

Size	Micro		Small		Medium	
	Sales Turnover	Employees	Sales Turnover	Employees	Sales Turnover	Employees
Manufacturing	< RM 300,000	< 5 employees	RM300,000 to < RM15 million	5 to < 75 employees	RM15 million to ≤ RM50 million	75 to ≤ 200 employees
Services & other sectors			RM300,000 to < RM3 million	5 to < 30 employees	RM3 million to ≤ RM20 million	30 to ≤ 75 employees

SMEs are divided into two sectors: the manufacturing sector and the services and other sectors. Table 2.1 shows that companies in the manufacturing sector are considered as SMEs if their sales turnover is equal to or less than RM 50 million or they have equal to or less than 200 full-time employees. For the services and other sectors, the sales turnover should not exceed RM 20 million or full-time employees should not exceed 75. Under the definition, all SMEs must be registered with the Companies Commission of Malaysia (SSM) or equivalent bodies (SME Corp, 2021).

SMEs play a crucial role in a country's economic growth, and in Malaysia, they are considered the backbone of the economy (Ghazilla et al., 2015). SMEs facilitate the development of the Malaysian economy, which began in the early 1970s (Che-Ha & Mahmood, 2012). They create a significant number of jobs, employing about 7.3 million people, or approximately 65 percent of Malaysia's total workforce, according to the SME Annual Report 2020 (SME Corp, 2021). This demonstrates the government's reliance on the SME sector to maintain economic stability.

In addition, SMEs are known for their agility and ability to adapt quickly to market changes, making them suitable for innovation and technology development. Many Malaysian SMEs engage in research and development, contributing to the development of new products and services. This is essential for the government's goal of adapting GGP throughout the country. Furthermore, SMEs are vital to the growth and development of other industries in Malaysia, providing support services to large companies, thereby contributing to their growth and development.

2.6.1 Small and Medium Enterprises (SMEs) as Government Green Procurement (GGP) Suppliers

Ghazilla et al. (2015) stated that there are differences in the factors that trigger and restrain green practices among SMEs as compared to those in large corporations due to SMEs' lacking in necessary of data, technical expertise, resources, and knowledge to perform green practices. The intention of SME owners primarily influenced the environmental performance of the SMEs and additionally, the criteria of SMEs vary significantly across various geographical regions.

Participation in GGP requires SMEs to produce goods and services with a lower environmental impact, such as energy-efficient, eco-labeled, and sustainable products. According to Salam (2008), GGP can be encouraged if organizations can easily obtain eco-friendly products and services that perform as well as conventional products. In other words, the organizations should establish good relationships with suppliers who are able to provide high-quality and high-performance green products and services to the government. Cooperation between the market and the procuring organization is seen as an essential facilitator for strategic procurement (Lauesen & Vium, 2005). Ma et al. (2021) also emphasized the importance of the government stimulating their suppliers to develop green products and services or make their own business processes more sustainable.

The availability of suppliers, products, and services significantly affects the implementation of green procurement (Brammer & Walker, 2011). A green market cannot exist without the supplier's offer and the buyer's demand. As a government's supplier, it must meet government and public demands by offering green products and services. That is why the government prefers to cooperate with responsible and sustainable suppliers (Wang et al., 2020). By building a relationship bond, the supplier can benefit from being preferred by the government and acknowledged by the public, thus raising their product

and service standards. Firms that provide green products and services to the public sector have the opportunity to develop a profound partnership with the public sector (Ma et al., 2021).

SMEs in Malaysia can engage in GGP through various channels, including registering with the Malaysian Government e-Procurement System (GePS) and participating in procurement tenders that target the SMEs. SMEs can also participate in capacity-building programmes that provide training on green procurement and sustainable business practices. The MGTC is a government agency that provides support and assistance to SMEs in green procurement. The MGTC offers training programmes, workshops and advisory services to help SMEs understand the requirements of green procurement and the opportunities available to them. The MGTC also provides access to financing for SMEs to implement green procurement practices.

Another agency that supports SMEs in green procurement is the MIDA. The MIDA provides information on government procurement policies and programmes, as well as access to funding and capacity building programmes. The MIDA also works with international organizations to promote sustainable procurement practices and to create opportunities for Malaysian SMEs in the global market (MIDA, 2023).

However, the COVID-19 pandemic has had a significant impact on SMEs compared to other sectors, which also affects their involvement in GGP. Further details on how the pandemic has affected the country are discussed below.

2.7 IMPACT OF THE COVID-19 PANDEMIC ON MALAYSIAN BUSINESSES

The global COVID-19 pandemic caused significant loss of life and human suffering, making it the largest public health crisis in recent memory. This crisis also led to a major economic crisis, with affected countries experiencing a halt in production, decreased

consumption and confidence, and negative stock exchange responses due to heightened uncertainties (Kamal-Chaoui, 2020). In an effort to curb the spread of the virus, the Malaysian government implemented the Movement Control Order (MCO) in March 2020 (ACCA, 2020). Despite efforts towards resilient supply chains, many organizations were unprepared for the impacts of COVID-19 (Mace, 2020), and temporarily ceased their operations.

The DOSM conducted a survey on the effects of COVID-19 on the economy and businesses during the MCO, which revealed that more than two-thirds of respondents reported no revenue during this period (DOSM, 2020). Other than that, a study conducted by Monash University Malaysia highlighted that, varying degrees of concern exist depending on the industry, where most of industries were concerned with the fall in consumer confidence, while the manufacturing and food and beverage industries were worried about supply chain shocks. The construction industry was worried about a decline in productivity due to the need to safeguard workers while maintaining productivity (Ahmed & Nair, 2020).

Another survey conducted by the Institute for Supply Chain Management found that 75 percent of companies reported supply chain disruptions due to the impacts of COVID-19 (Caldera et al., 2022). This crisis has created additional complexities for green procurement, with process delays, loss of efficiency, and cost impacts affecting suppliers' ability to meet their contractual obligations with government entities (Loosemore, 2020). Furthermore, suppliers may not be able to fulfil their contracts due to action taken elsewhere in the public sector and restrictions that were in place, or that may be in place in the future (Caldera et al., 2022). The Malaysian government has taken efforts towards economy recovery by mobilising a variety of assistance to businesses, including through the Pelan Jana Semula Ekonomi Negara (PENJANA) and Kita Prihatin. Both aids were

introduced to assist SMEs to survive in their business and to ensure SMEs reassess their businesses in a ‘new normal’ norm.

The SME Corp. proposed in the Annual Report 2020, that the COVID-19 crisis will likely put sustainability issues more in the spotlight as environmental concerns continue to rise, especially with evidence suggesting that the next crisis may emerge from climate change (SME Corp, 2021). Caldera et al. (2022) also mentioned that embedding sustainability in procurement can bring about positive change in an organization's supply chain, while Zhang and Fang (2022) claimed conventional SMEs and large firms were more affected by the COVID-19 pandemic as compared to eco-friendly SMEs.

The European Environmental Agency (EEA) (2020) predicts that the upcoming crisis, in any shape or form, is likely to be recognized as another manifestation of the same core issue that stems from the unsustainable nature of human production and consumption. Therefore, businesses, especially SMEs, must take action to protect the environment by implementing green practices and GGP to adapt to future uncertainties.

2.8 GAPS OF THE STUDY

This study bridges the gap in research on GGP suppliers in Malaysia. Prior studies in Malaysia have focused on customer perspectives (Ramayah et al., 2010; Ramakrishnan et al., 2015; Lasuin & Ng, 2014), and neglected the viewpoint of suppliers (Shaharudin et al., 2018). Supplier is essential to ensure the sustainability of the green industry as Filho et al. (2022) stressed that, the number of green product and services demand had risen especially after the pandemic. Previous research has also centered on the challenges faced by GGP suppliers in general, without differentiating between multinational corporations (MNCs), Government-linked companies (GLCs), and SMEs. In other words, the size of the company can affect the main challenges faced, and there is a lack of research on SMEs' involvement

in GGP activities in Malaysia as Eltayeb & Zailani (2009), Abidin (2010), and Ghazilla (2015) stressed that the green procurement is not common among the SMEs. All the challenges derived from the prior research might not affect the SMEs; therefore, it is essential to identify the challenges that only affect SMEs, as previous research may not be applicable.

Zhang and Fang (2022) noted that the impact of COVID-19 on business performance may vary between eco-friendly and conventional firms, with eco-friendly firms potentially having better financial performance and access to financing. Previous studies have also found that SMEs have different environmental behavior toward pollution prevention measures and environmental disclosure, which further can affect the relationship between environmental and financial performance (Brammer et al., 2012; Masurel, 2007).

With this note, the researcher believes that it is necessary to identify the benefits and challenges of the GGP through SME involvement since the prior study has shown that there is no research that directly focused on SMEs in Malaysia throughout their participation in GGP. Other than that, it is also essential to identify the impact of the COVID-19 pandemic on GGP suppliers among SMEs, as the unprecedented incident like before might happen again in the future, and identifying SMEs' perceptions of the impact can give a warning for the SMEs to avoid the same mistakes they had taken before facing the pandemic.

2.9 CHAPTER SUMMARY

This chapter presented a general overview of government procurement and green procurement practices globally as well as locally, throughout the country. The chapter then focused on the introduction of GGP in the country along with the programme that assists

the GGP practices, the MyHIJAU programme. The programme is discussed on its aim, how it has been conducted, the respected government bodies that generate and controlled the programme, and also the main targeted parties for this programme, SMEs. This chapter then further brings the classification of the SMEs in terms of definition and also the focused on SMEs involved in GGP. Finally, the situation of the COVID-19 pandemic and the general impact received by the SMEs is detailed in the chapter along with the existing gaps that had been identified before conducting the study. In the next chapter, there is the introduction of the proposed theory used in this study, as well as the detailed explanation of the method applied.

CHAPTER THREE

THEORETICAL FRAMEWORK AND RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter explains the theoretical framework and method used in this study. This chapter is divided into nine sections. Section 3.2 explains the theoretical framework and Section 3.3 discusses the research design and methodology adopted. The detailed discussion on the questionnaire survey, population and sampling is presented in Section 3.4 and 3.5, respectively. Section 3.6 portrays the questionnaire development and pilot test conducted. Next, Section 3.7 presents the data collection, and Section 3.8 explains the data analysis. Finally, Section 3.9 provides a summary of the chapter.

3.2 THEORETICAL FRAMEWORK

This section provides an overview of the theoretical framework used in the present study. The study employed cost-benefit analysis (CBA), which is based on the utilitarianism theory. CBA is used in the decision-making process, where it is an analytical technique that compares the costs of a project or technological application to the resulting benefits, both of which are expressed in monetary terms. The relationship between CBA and utilitarianism has been established by scholars, such as Wenz (1986), who argued that CBA is founded on the ethical theory of utilitarianism.

According to Bentham (1948), the founder of the utilitarianism theory, utilitarianism is a general theory concerning the evaluation of human behaviour. Human actions are morally justified if they act for the greatest good of society. According to Boatright (2017) utilitarian theory comprises of four components; consequentialism, which evaluates actions solely based on their outcomes; hedonism, which concerns pleasure and pain avoidance; maximalism, which aims to achieve the greatest amount of good outcomes while also considering negative outcomes; and universalism, which considers the outcomes for all stakeholders. Eid (2012) uses utilitarian theory in examining the ethical reasoning for adopting sustainability development agenda which explained the good outcome derived from environmental sustainability also benefits society. This portrays the importance of a good human being as proposed in the theory to protect society including the environment because there is a strong interrelation between the environment and human being activities.

Prior study has demonstrated the connection between CBA and utilitarianism, particularly in the context of the environment. For example, economic welfare which is based on the utilitarianism view, where it can bring maximum good to the society, is deeply dependent and interlinked with the environment and broader human well-being (Stiglitz et al., 2009; International Panel on Social Progress [IPSP], 2018). Other than that, OECD (2018) also encouraged the use of CBA in the integration of the environment into economic policies' instead of using it in delivering efficiency and improving economic welfare.

In a report published by the OECD in 2018, the framework of environmental CBA is:

> "Environmental cost-benefit analysis (CBA) is the application of CBA to projects or policies that have the deliberate aim of environmental improvement or actions that somehow affect the natural environment as an indirect consequence".

This has proved the consistency between CBA and the environment although CBA was first used to analyze the monetary benefits gained by an organization. CBA

recommends pursuing projects that generate more benefits than their costs and selecting the project with the greatest net benefit if measured in currency rate apart from options that are worth below (Mishan & Quah, 2007). The theory linked with CBA, which is the utilitarianism theory, justifies the usage of CBA to study human behavior.

In the context of green procurement, the utilitarianism theory and CBA can be utilized to assess the environmental and economic impacts of various procurement policies and practices. Using a CBA, for instance, one may evaluate the expense of creating non-environmentally friendly products with the possible savings from lower energy usage or decreased waste. It could help the SMEs to make a right decision in choosing a product or services. Other than that, a utilitarian overview could then be used to weigh the benefits of these savings against any negative impacts on other stakeholders, such as consumers.

As for the current study, both CBA and utilitarianism theory were used to identify the benefits and challenges of GGP as well as the impact of the COVID-19 pandemic among the SMEs as the government suppliers. Despite being grouped as SME, it is essential to identify the differences between both parties; as both small and medium enterprises are different due to unique characteristics that include short track records, heavy reliance on niche markets, lack of specialist skills, low cash flow, small asset base, the need to make changes in structure and ownership at different stages of growth (Gerstenfeld & Roberts, 2000). Lavis (2018) also mentioned that due to being sandwiched between large corporations and small enterprises, medium enterprises experienced more obstacles to surviving in the industry. A more thorough discussion of the research design and research method used is presented in the next section to clear on how both enterprises' perceptions were gained for this study.

3.3 RESEARCH DESIGN AND RESEARCH METHOD

According to Woody (1924), the research process involves identifying a problem, generating a hypothesis, processing data, reasoning to obtain a conclusion, and testing the result to accept or reject the hypotheses. Without a well-planned research process, research cannot be successfully conducted. The research design is an essential component of the research process as it outlines the plan for the method to be used for collecting and analyzing data (Hair et al., 2010). It includes organizing the variables to enable accurate measurement, selecting a suitable sample for the study, collecting data to test the hypotheses, and analyzing the results (Thyer, 2009).

The current research used a quantitative research method, which according to Babbie and Rubin (2010), can be descriptive or experimental. Descriptive research design explains the associations between variables, and experimental design focuses on causality or reasoning and is measured before and after the treatment (Babbie & Rubin, 2010). Meanwhile, Saunders et al., (2007) stated that a research design can be exploratory, explanatory, or descriptive, and the researcher should select the most appropriate one. In the current study, a descriptive research design was used, which required specifying the 5W (who, what, when, where, and why) clearly. Descriptive research is the application of scientific methods and procedures to collect raw data and construct data structures that describe the current features of a specified target population (Shiu et al., 2009).

Using quantitative data enables accurate analysis with statistical software, which tests theories or hypotheses, producing unbiased and reliable results (Bryman & Bell, 2011). The main advantage of using a quantitative research design instead of a qualitative one is the validity, reliability, replication, and generalization of data, which are essential qualities for the research quality (Bell & Bryman, 2007). In the present study, a

questionnaire survey was utilized to meet all the objectives of the research. A further explanation regarding the questionnaire survey is discussed in the following section.

3.4 QUESTIONNAIRE SURVEY

During the present research, a self-developed questionnaire survey based on findings of prior studies was used to collect data from respondents. Questionnaire is a source of information obtained via a well-organized compilation of queries that address the issues related to the study (Saunders, 2007). De Vaus (2002) defined the questionnaire as a technique used by researchers to obtain information from a sample population by having them answer questions as respondents of the study, which matched to the methodology employed in this study.

According to Bell and Bryman (2007), this method is preferred by most researchers because it has high levels of reliability and low variability, and processing the data is relatively easy. Additionally, the questionnaire is a cost-effective method for gathering information from a large geographical area of respondents (Cooper & Schindler, 2014). Making the questionnaire available online and paperless also allows respondents to have flexible time and place to answer the survey questions. Given the varying types of businesses and locations of the respondents, and the COVID-19 pandemic throughout the country, using a questionnaire survey to reach out to respondents was an ideal way to achieve the objectives of the current study.

The questionnaire survey was used to achieve all three research objectives of the study. The questionnaire was developed based on prior studies, including McMurray et al. (2014), Adham and Siwar (2017), Scottish (2021), ACCA (2020), and Vejaratnam et al. (2020). The questions from prior studies were modified to suit the current study's context and objectives which focused on GGP in Malaysia. The survey comprised four sections

namely: Section A, Section B, Section C and Section D. Section A details the demographic information of the respondents as well as the company represented, with 11 questions and an optional question. The objectives of this section were to ensure only credible respondents respond to the questionnaire and to understand the background information of the respondents and the responding companies.

Section B of the questionnaire contains statements related to the first objective of the study, which is on the benefits gained by companies through GGP. The section consists of 15 statements, and a five-point-Likert scale was used to measure the level of agreement on the benefits ranging from '1' to mean strongly disagree, and '5' to mean strongly agree. A higher score indicates higher points given to the benefits gained through the respondents' participation in GGP, while a lower score indicates that they benefited less through their engagement with GGP.

Section C explores the challenges faced by the SME suppliers in engaging with GGP. There are 17 statements in total, divided into five different types of challenges based on Vejaratnam et al. (2020): financial, legal, people, knowledge and organizational challenges. A five-point-Likert scale in which '1' is strongly disagree and '5' is strongly agree was used to indicate respondents' level of agreement with each challenge. A higher score proves a higher level of challenges faced by the supplier, while a lower score means vice versa.

The final section, Section D asks the respondents to indicate the extent of the impact of the COVID-19 pandemic on them. This section is related to the third objective of the study. There are 14 statements of the impact of the COVID-19 pandemic on GGP suppliers, and a five-point-Likert scale in which '1' is strongly disagree and '5' is strongly agree was used to indicate respondents' agreement with each impact. A higher score proves a greater impact of the COVID-19 pandemic, while a lower score means otherwise.

The questionnaire survey used in the study is titled ‘Research on Benefits and Challenges of Government Green Procurement (GGP) Participation by Small and Medium Enterprises (SMEs)’ and is presented in Appendix 1.

3.5 POPULATION AND SAMPLING

The target population of this study comprises the SMEs that provide green products or services to the government. According to Pandey and Pandey (2015), the population is the source from which a sample is selected to represent the whole population. In the GGP guideline 1.0 (KeTTHA, 2014), it is one of the government’s plans to help local manufacturers, particularly SMEs, in becoming more competitive on global markets. Thus, the current study is focused on the SME population which only participates in GGP.

It is impossible to collect data from the entire population, therefore researchers choose a representative sample through a process called sampling (Pandey & Pandey, 2015). The sampling design focuses on the study's target population, sampling procedure, and sample size. The sampling technique can be divided into two categories: probability or random sampling and non-probability or non-random sampling. In this study, a non-probability sampling technique was used because the exact number of SMEs that supply green products or services to the government is unknown. This is because the GGP suppliers among the SME are not required to obtain the MyHIJAU mark recognition, and the exact number of SME suppliers is not specified anywhere. Hence, non-probability technique was chosen to select the sample from the stated population.

The suitable non-probability method for this study is convenience sampling because the researcher selected participants who were easily accessible and readily available (Babbie, 2020). This type of sampling is used when the researcher does not have access to a comprehensive list of the population, or when it is difficult to obtain a representative sample. Under this method, the researcher selected respondents based on

availability or willingness to participate. Respondents with the MyHIJAU mark were asked if they could participate in this study. Since the total population of GGP suppliers among SMEs could not be identified, choosing this sampling method helped the researcher to conduct the study. The questionnaire in the Word document and google form version was distributed to the respondents using non-probability sampling technique by convenience sampling through email after engaged with the respondents through WhatsApp.

The respondents are the suppliers of green goods or services to the government, or in other words, those involved in the government procurement process. The respondents for the questionnaire were identified from the MyHIJAU directory and engaged mostly through email and WhatsApp application while a few numbers of the respondents were contacted through a direct call. Of the 394 businesses approached, only 145 replied, and 19 were deleted due to missing answers in the questionnaire or being non-SME suppliers. The next section discusses the development of the questionnaire and the pilot test conducted.

3.6 QUESTIONNAIRE DEVELOPMENT AND PILOT TEST

The questionnaire was developed based on prior studies, i.e., McMurray et al. (2014), Adham and Siwar (2017), Scottish (2021), ACCA (2020) and Vejaratnam et al. (2020). The GGP items regarding benefits were adapted from McMurray et al. (2014) and Adham and Siwar (2017), while the challenges were adapted from Vejaratnam et al (2020) and Adham and Siwar (2017). The COVID-19 effects were taken from Scottish (2021) and ACCA (2020). Additionally, several statements were added to the relevant sections of the questionnaire based on input from reviews of prior studies. The questionnaire went through three rounds of amendments with the supervisors before being distributed for pilot testing.

Cooper and Schindler (2014) suggested that weaknesses in design and instrumentation can be detected through pilot testing. In this study, the survey questions

were piloted to examine the questionnaire's feasibility before being distributed to the intended respondents. Twenty copies of the questionnaire were distributed to lecturers, practitioner and postgraduate students for the pilot test. Written feedback and suggestions were obtained on the questionnaire layout, question reasonability, sentence structure, grammar, and suitability of answer choices. Thirteen responses were received and taken seriously. The pilot test ran for one month after which the comments received were analyzed. After reviewing all feedback and comments for a week, two discussions with supervisors were held before finalizing the questionnaire. The final version of the questionnaire was drafted two weeks after the pilot testing. Following the pilot testing, the questionnaire was sent to the targeted respondents, and data collected was analyzed as explained below.

3.7 DATA COLLECTION

The questionnaire was distributed to SMEs in two ways: through a Google form and a Word document that required respondents to reply via email. Results from the Google form were identified from the data presented in the Google sheet, while the details of the email used by the respondents were collected to identify the status of the company, whether or not they require a reminder for the follow-up process. Table 3.1 provides the details of the respondents' responses and shows that the questionnaire was sent in several batches, determined randomly based on the MyHIJAU mark listing on the website (MyHIJAU, 2022b).

For the first batch, a different approach was used to contact the respondents, which was through direct calls. However, only 17 respondents were engaged because the method was unsuitable for the respondents. Although the data from this method were collected faster than via email, the researcher found that the respondents had difficulties answering

the calls, and even if they did answer, they were focused on their work, thus ending the conversation in a rush. As a result, the following batches used email and WhatsApp application, which produced more acceptable responses. The respondents from this method were more comfortable responding in their own time, and the conversation on WhatsApp resulted in positive responses.

Table 3.1 Respondents Detail of Responses

Batch of Respondents	Method Used	Number of Respondents Approached	Responses Received
Batch 1	Call	17	2
Batch 2	Email & WhatsApp	88	39
Batch 3	Email & WhatsApp	19	12
Batch 4	Email & WhatsApp	163	55
Batch 5	Email & WhatsApp	107	37
TOTAL		394	145
APPROVED			126

For Batch 2 till Batch 5, the researcher approached all respondents three times, with an average gap of seven days for every session, which contributed to about 10 weeks for the entire data collection process. There were two follow-up sessions and only included those who had not responded or answered the questionnaire. The researcher reached out to mostly two persons from every company, and all the details about the respondents, as well as the company, were gained from the MyHIJAU directory. Currently, MyHIJAU directory has details for at least two representatives from each company to be contacted, and the researcher approached both of them because some representatives were not aware of the researcher's request in their emails. However, only one respondent was selected if both representatives answered the questionnaire provided. The information about the research, the questionnaire survey in Google form link, and the Word document were detailed in the

email sent. WhatsApp application was used to inform the respondents to view their email to participate in the study and also to engage with the respondent for every query raised. The researcher's contact number and Google Meet link were included in the email for respondents to engage with the researcher.

As shown in Table 3.1, the researcher contacted a total of 394 respondents from the MyHIJAU mark recipients, and 145 answered the survey questions. However, only 126 of the questionnaires were usable, as 19 were rejected for missing answers in the questionnaire or for being non-SME suppliers

The following section briefly discusses the data analysis process carried out by the researcher. The data analysis steps are crucial to ensure the results obtained are usable for the current research.

3.8 DATA ANALYSIS

The researcher used the Statistical Package for the Social Sciences (SPSS) software to analyze the data collected. The current study employed two statistical analysis techniques: descriptive analysis and independent sample t-test analysis. Descriptive analysis was used to examine the data and gather information about the respondents' background and demographic profile. Descriptive analysis is the most efficient and effective methods of summarizing the characteristics of large sets of data (McDaniel & Gates, 2010). This technique is also useful for summarizing data by calculating mean scores and standard deviations. The mean results were used by the researcher to further analyze the findings. The descriptive analysis addressed all three questions of this study. The mean score ranking identified the importance of various items rated in the score (Cooper & Schindler, 2014). Descriptive data gives the average value, calculated from the 5-1 Likert Scale.

Independent samples t-test analysis was used to determine if there are any significant mean differences between small and medium enterprises. The current study employed t-test analysis to analyze Research Question 1(b): Are there any differences in perception of the benefits of GGP between SMEs suppliers?, 2(b): Are there any differences in the challenges faced by SMEs suppliers when participating in GGP?, and 3(b): Are there any differences in the impact of the COVID-19 pandemic on GGP participation by SMEs suppliers?. This analysis is used to identify whether the means of two independent groups; small and medium enterprises, are significantly different from each other. The t-test evaluates whether the mean value of the benefits, challenges and the impact of the COVID-19 pandemic for small enterprises differs significantly from the mean value of the test variable for the medium enterprises.

3.9 CHAPTER SUMMARY

This chapter focuses on the relevant theory adopted in this study to answer the research questions. CBA and utilitarianism theory are useful for justifying the reasons behind respondents' perception. This chapter also highlights the methodology used in this study. A questionnaire survey was used to collect the primary data from the respondents. Non-probability sampling was used for two different kinds of data collection from the respondents. The reason for the researcher to choose this method is also explained in this chapter. A detail of the findings from the method used in this chapter is explained in the next chapter along with a discussion of the particular results portrayed.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 INTRODUCTION

This chapter provides the research findings based on the data gathered from the questionnaires. Section 4.2 details the preliminary data analysis conducted, while section 4.3 presents the response rate and demographic information of the respondents. Next, Section 4.4 and Section 4.5 discuss the findings concerning the benefits as well as challenges of the GGP involvement to SME suppliers. Section 4.6 provides the findings and discussion on the impact of the COVID-19 pandemic on GGP involvement by SME suppliers. Lastly, a summary is provided in Section 4.7.

4.2 PRELIMINARY DATA ANALYSIS

Data analyses were conducted using SPSS version 26. This section describes the preliminary data analysis, including reliability and normality tests.

4.2.1 Reliability Test

The freedom of measurement from random error in the analysis performed could be refrained through the reliability test conducted. This test evaluates the consistency and frequency of the results. Internal consistency refers to the extent to which all components measuring a variable are sourced from the same underlying element. Cronbach's Alpha coefficient can be used to measure internal consistency. The reliability coefficient ranges from zero to one, and the higher the value, the more dependable the data is (Pallant, 2020). The significance of conducting a reliability test is that it provides insights into the level of

confidence in the data set, indicating how much the researcher can rely on the results obtained from the data. Hair et al. (2010) stipulated that a Cronbach's Alpha value higher than 0.7 is necessary to establish data reliability.

Table 4.1 Reliability Test using Cronbach's Alpha

Research Objective	No. of Item	Cronbach's Alpha Value
Benefits of GGP	15	0.94
Challenges of GGP	17	0.90
COVID-19 effects to the GGP's supplier	14	0.79

Based on the Cronbach's Alpha values above, all the three variables of the current study have a value of more than 0.7. The results indicate that the statements that measure each of the three aspects of the study are reliable, and thus, no item was deleted.

4.2.2 Normality Test

Normal distribution describes how the data is spread out, often appearing as a smooth bell curve that is not too flattened or too peaked. It is ideal for data to be normally distributed, or distributed evenly. Testing for normality is important because it determines the confidence level of the average points.

In this study, the researcher conducted a normality test by analyzing the skewness and kurtosis values using statistical analysis. For data to be considered normally distributed, the skewness and kurtosis values must fall between -1.96 to +1.96 (Piaw, 2013). The value of skewness and kurtosis between -2 and +2 suggest a normal univariate distribution (George & Mallery, 2019). According to Table 4.2, the main variables of the study are normally distributed based on their skewness and kurtosis values.

Table 4.2 Normality Test using Skewness and Kurtosis

Variable	Skewness	Kurtosis
Benefits of GGP	-.531	1.086
Challenges of GGP	.194	.203
COVID-19 effects to the GGP's supplier	.253	.300

As noted above, the skewness and kurtosis values are below 2 and -2, respectively. Therefore, this indicates that the data is normally distributed.

4.3 RESPONSE RATE AND DEMOGRAPHIC INFORMATION OF RESPONDENTS

The respondents in this study are suppliers of GGP who have received recognition through the MyHIJAU mark. The selected enterprises are among the SMEs that supply the government with their green products or services. A total of 394 questionnaires were distributed to the targeted respondents. However, only 145 were duly received and 126 were usable for analysis. Some of the questionnaires were responded to by non-GGP suppliers or non-SMEs, while others were not completed properly, as identified by the respondents themselves, who admitted to not fully understanding the terms used in the questionnaire. This resulted in an overall response rate of 31.98 percent, which is considered adequate, as suggested by Sekaran (2003), who stated that a response rate of 30 percent is acceptable in most social science research.

As the unit of analysis in this study is the SME, the demographic information of the companies, such as the type of industry they belong to, the type of public procurement activities they have been involved in, and details about the employees, as well as the company's turnover, is presented in Table 4.3. The respondents' tasks related to the GGP

process was also asked to ensure the credibility of the person representing the company as respondent.

The SMEs that responded are from various types of industry. The highest number of SMEs belongs to the technology industry, representing 32.5 percent of the respondents. The second highest industry is construction, accounting for 29.4 percent, followed by the industrial sector, representing 23 percent of the respondents. The trading-services industry accounted for 10.3 percent of the respondents, followed by the consumer industry at 4.0 percent, and the properties industry at 0.8 percent. Most of the respondents answering the questionnaire on behalf of the SMEs are involved in supply-based procurement activities, accounting for 42 percent, followed by services-based procurement activities at 41 percent, as well as work-based procurement activities at 17 percent of the total procurement activities.

Among the 126 SMEs, 39.7 percent have been appointed as government suppliers for one to five years, while 10.3 percent have been appointed for six to 10 years. With respect to the MyHIJAU mark, 37.3 percent of the SMEs received recognition within one to less than three years, while 15.9 percent of the SMEs had been recognized for more than five years.

In terms of the background of the company in relation to SMEs criteria, 44.4 percent of the companies have five to 30 employees, while only 5.6 percent have more than 200 employees. In reviewing the company's turnover, about 32.5 percent of the companies have a turnover of RM 300,000 to less than RM 3 million, while 7.9 percent of them have a turnover of less than RM 300,000.

Table 4.3 Demographic Information of the Company

Category		Frequency	Percent
Types of Industry	Technology	41	32.5
	Construction	37	29.4
	Industrial	29	23.0
	Trading-Services	13	10.3
	Consumer	5	4.0
	Properties	1	0.8
	Total	**126**	**100.0**
Types of Procurement	Supplies	75	42
	Services	74	41
	Works	31	17
	Total of procurement activity engagement	**180**	**100.0**
Appointment as government supplier	1 and 5 years	50	39.7
	Less than 1 year	34	27.0
	Over 10 years	29	23.0
	6 and 10 years	13	10.3
	Total	**126**	**100.0**
Year/s of obtaining MyHIJAU mark	1 to less than 3 years	47	37.3
	3 to 5 years	37	29.4
	Less than 1 year	22	17.5
	More than 5 years	20	15.9
	Total	**126**	**100.0**
Number of Employees*	5 to 30	56	44.4
	31 to 75	27	21.4
	76 to 200	26	20.6
	Below than 5	10	7.9
	More than 200	7	5.6
	Total	**126**	**100.0**

Table 4.3 Demographic Information of the Company

Category		Frequency	Percent
	RM 300,000 to less than RM 3 mil	41	32.5
	RM 3 mil to less than RM 15 mil	32	25.4
	RM 20 mil to less than RM 50 mil	16	12.7
	RM 15 mil to less than RM 20 mil	15	11.9
	More than RM 50 mil	12	9.5
	Less than RM 300,000	10	7.9
	Total	**126**	**100.0**

*The companies that had both, more than 200 employees and gained more than RM 50 million turnover are non-SME companies and they were removed (i.e., not part of the usable responses as in Table 4.3)

Table 4.4 presents the demographic information of the SME representatives who participated in the survey, which includes their gender, educational background, and position in the company. The results show that the majority of the respondents are male, accounting for 69 percent of the total respondents, while the remaining 31 percent are female. Most of the respondents have STPM/Diploma/Bachelor's degree qualifications, representing 76.2 percent. About, 20.6 percent of the respondents have a master's degree or Ph.D., and only 2.4 percent have an SPM qualification. Additionally, only one respondent, representing 0.8 percent of the total respondents, mentioned having a professional certificate as the highest level of education.

Regarding the current work positions of the SME representatives, the majority of the respondents are managers and directors of their respective companies, accounting for 42.9 percent and 31.7 percent, respectively. The remaining respondents are executives, assistant managers and other related positions. A total of 52.4 percent of the respondents

have been involved in government procurement tasks for varying periods of time. Although more than 50 percent of the respondents currently have responsibilities related to GGP and the remaining respondents are tasked otherwise, 79.4 percent of the respondents are among the top management (Director/CEO, Manager, Assistant Manager). Although they claimed that their tasks are not directly related to GGP, as top management they are well aware of the concept. Based on the demographic information of both the SMEs and their representatives, the responses obtained in this study are deemed credible since the questionnaires reached the right target respondents and answered by those who are deemed credible.

Table 4.4 Demographic Information of the Respondents

Category		**Frequency**	**Percent**
Gender	Male	87	69.0
	Female	39	31.0
	Total	**126**	**100.0**
Education	STPM / Diploma / Bachelor's Degree	96	76.2
	Master's Degree / Ph.D. or Doctorate	26	20.6
	SPM	3	2.4
	Professional Certificate	1	0.8
	Total	**126**	**100.0**
Position in the company	Manager	54	42.9
	Director/CEO	40	31.7
	Executive	19	15.1
	Other	7	5.6
	Assistant Manager	6	4.8
	Total	**126**	**100.0**

Table 4.4 Demographic Information of the Respondents

Category	Frequency	Percent	Category
Task related to GGP	Yes	66	52.4
	No	60	47.6
	Total	**126**	**100.0**
Working experiences with GGP	none	60	47.6
	More than 5 years	24	19.0
	1 to less than 3 years	20	15.9
	3 to 5 years	14	11.1
	Less than 1 year	8	6.3
	Total	**126**	**100.0**

4.4 FINDINGS AND DISCUSSION: OBJECTIVE 1 THE BENEFITS OF GOVERNMENT GREEN PROCUREMENT INVOLVEMENT TO SME SUPPLIERS

In this section, the results for Objective 1 of the study, on the benefits to SMEs for participating in GGP, are presented. There are two sections in the results, representing the two research questions for Objective 1. Research question 1 is, 'How would participation in GGP benefit SME suppliers?'; while research question 2 is, 'Are there any differences in perception of the benefits of GGP between SME suppliers?'. Accordingly, the results for the overall respondents are presented first, followed by the results based on small and medium-sized groups. Table 4.5 shows the mean scores, standard deviation, and mean score rankings for each item on the benefits of GGP involvement for the overall respondents and based on group size (i.e., small and medium).

Table 4.5 The Benefits of Government Green Procurement Participation to SME Suppliers

No	Benefit of GGP Participation	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	Engaging with GGP helps in alleviating environmental problems such as global warming and ozone depletion.	4.07	0.80	1	4.05	0.83	1	4.12	0.74	1
2	Engaging with GGP has improved the image of the company.	4.06	0.75	2	4.05	0.76	2	4.09	0.72	2
3	Engaging with GGP has enabled the company to meet the environmental protection goals and targets.	3.98	0.79	3	3.96	0.83	3	4.06	0.66	3
4	Engaging with GGP has improved the compliance of company towards government environmental protection regulations.	3.83	0.86	4	3.78	0.90	4	3.97	0.77	4
5	Engaging with GGP has enabled the company to contribute to the competitiveness of local industry.	3.80	0.87	5	3.77	0.93	5	3.88	0.65	5
6	Participation in GGP has reduced company usage on natural resources.	3.62	0.94	6	3.58	0.97	6	3.73	0.84	6
7	Engaging with GGP has enabled the company to encourage foreign investment.	3.57	0.92	7	3.55	0.93	7	3.64	0.90	7
8	Engaging with GGP has improved the transparency of procurement procedures.	3.57	0.85	8	3.55	0.89	8	3.64	0.74	9
9	Engaging with GGP has improved the efficiency of procurement procedures.	3.53	0.97	9	3.49	1.02	10	3.64	0.82	8
10	Green procurement has improved healthy workplace behaviors within the company.	3.49	0.87	10	3.47	0.93	11	3.55	0.71	10

Table 4.5 The Benefits of Government Green Procurement Participation to SME Suppliers

No	Benfits of GGP Participation	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
11	Green procurement has increased company's productivity.	3.49	0.90	11	3.54	0.93	9	3.36	0.82	14
12	Engaging with GGP has generated employment opportunities.	3.45	0.91	12	3.45	0.92	12	3.45	0.90	11
13	Engaging with GGP has enabled the company to provide community services.	3.42	0.83	13	3.43	0.84	13	3.39	0.83	13
14	Engaging with GGP has enabled the company to assist the disadvantaged groups in the society.	3.35	0.88	14	3.32	0.86	15	3.42	0.94	12
15	Company able to generate saving from GGP participation.	3.33	0.99	15	3.34	1.02	14	3.30	0.92	15

a) Results for all respondents

According to the five-point Likert scale used in this study, a higher mean score indicates a greater impact of the benefits of the GGP on the suppliers, while a lower score indicates a lesser impact of benefits on the suppliers. Table 4.5 shows that mean scores range from 3.33 to 4.07, indicating a moderate to high level of benefits of GGP involvement to the suppliers. This implies that participating in GGP gives benefits to SME suppliers in various ways. Based on the mean score ranking, the top five GGP involvement benefits as perceived by the overall SMEs are 'reduced environmental problem', 'improved supplier's image', 'meeting environmental protection goals and targets', 'improved compliance of government environmental protection regulations' and 'contribute to competitiveness of local industry'.

The top-ranked benefit of GGP engagement is its ability to help curb environmental problems such as global warming and ozone depletion (M=4.07, SD=0.80). This benefit is

aligned with surah Al A'raf, verse 85 in the Al-Qur'an:

'…and do no mischief on the earth after it has been set in order: that will be best for you, if you have Faith'

The dominant religion in the country, Islam, considers that environmental protection is a religious duty and one of the social obligations. The duty is not optional, and the exploitation of natural resources is directly tied to accountability and resource preservation (Zafar, 2021). Therefore, the researcher believes that the respondents engage with GGP not for business purposes per se, but because they believe they can take part in protecting the environment. This is also in line with the government's objective of introducing GGP, which is to protect and sustain the environment for a better future (KeTTHA, 2014). Specifically, as outlined in the 12th Malaysia Plan, the government aims to reduce up to 45 percent GHG emissions intensity to GDP by 2030 with the GGP initiative (EPU, 2021), where the reduction of GHG emissions could reduce harm to the environment. With the current finding that GGP involvement has benefited SME suppliers in terms of reducing environmental problems, the government agenda of sustaining the environment which is in line with SDG 12, to ensure sustainable consumption and production patterns, can be achieved.

The second-ranked benefit of GGP participation is 'improved the image of the company'. This benefit can be achieved because GGP engagement reflects the company's emphasis on environmental protection in its business activities. According to Honey (2002), environmental concern has become part of the corporate culture. This result is consistent with the finding of Ma et al. (2021), that improving the company's image is one of the main motivations for the company to engage with GGP.

The benefit of 'meeting environmental protection goals and targets' ranks third. The result is consistent with the finding of the UNEP (2008), which has revealed that

meeting environmental protection goals is the most important benefit gained through GGP participation. This benefit has been listed in the GGP guideline (KeTTHA, 2014) as being gained by the suppliers due to their engagement with GGP. McMurray et al. (2014) categorized meeting the environmental goal as their top five listed benefits achieved from GGP. This marks the importance of this benefit.

'Improved compliance of government environmental protection regulations' ranks fourth and is aligned with Musa et al.'s (2013) view that policies and regulations must be aligned with the eco-friendly environment, which includes environmental considerations in the awarding of tenders and contracts to the supplier. This indicates the compliance of the GGP suppliers with environmental regulations due to their engagement in sustainability activities. Improving compliance with regulations is one of the results of the first strategic thrust proposed by the MGTC, which is to encourage promotion and public awareness of sustainable preferences that lead people to experience environmental benefits from green solutions (MGTC, 2022).

The fifth ranking is 'engaging with GGP has enabled the company to contribute to the competitiveness of local industry'. This is due to the increasing number of companies participating in GGP since its introduction, which can be verified by the number of companies registered for the MyHIJAU mark. Table 4.6 shows that as of 2022, a total of 580 companies registered for MyHIJAU, up from 51 in 2015 (MyHIJAU, 2022a).

Table 4.6 MyHIJAU Mark Registration

No.	Number of Products/Services	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022
1	Yearly Target	150	250	800	1,000	1,250	1,550	2,000	3,000
2	Yearly Actual	181	215	934	1,812	2,041	2,315	2,149	966
3	Cumulative Target	150	400	1,200	2,200	3,450	5,000	7,000	10,000
4	Cumulative Actual	181	396	1,330	3,142	5,183	7,498	9,647	10,613

No.	Number of Companies	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022
1	Yearly	51	69	106	64	97	83	82	28
2	Cumulative	51	120	226	290	387	470	552	580

Source: MyHIJAU, 2022a

The statistical information shows that the competitiveness within the green local industry, especially in GGP, has improved. Enhancing competitiveness in the local industry is one of GGP's benefits (KeTTHA, 2014) and has been agreed by the respondents. In addition, Korea Environmental Industry and Technology Institute (KEITI) (2017) mentioned that this benefit is consistent with global trade opportunities, as the increasing number of suppliers entering the green market leads to an increasing number of green products and services in the market.

The benefit of GGP engagement that ranks last is ‘company able to generate saving from GGP participation’ (M=3.33, SD=0.99). The possible reason for this result is that SMEs may have incurred costs, such as product materials, research and development expenses, and green recognition application costs when participating in GGP. However, it should be noted that taking a long-term perspective is important, as sustainability leads to lower costs during the product's lifetime in the future due to easy reusability or recyclability, resulting in lower disposal costs. Additionally, Ghazilla et al. (2015) pointed out that SMEs’ engagement in GGP is due to their tendency to draw public attention to their commitment to the environment since their participation in GGP is not well-known by the public due to limited media coverage compared to larger organizations.

b) Differences in the perceptions of the small and medium enterprises

As illustrated in Table 4.5 (please refer to pages 48 and 49), both groups (small and medium-sized enterprises) rated all 15 proposed benefits as either 'neutral' or 'agree' with mean scores ranging from 3.30 to 4.12. For most of the benefits, the medium-sized group has higher mean scores than the small-sized group, indicating that medium-sized companies perceived more benefits from GGP participation than their smaller counterparts. Based on the mean score ranking, the top five ranked benefits are similar for both groups as well as for the overall respondents.

However, over half of the GGP participation benefits (i.e., eight of the benefits) were ranked differently by the two groups of respondents. These eight items are, 'Improve the transparency of procurement procedure', 'Improve the efficiency of procurement procedure', 'Improve healthy workplace behaviors within the company', 'Increased company's productivity', 'Generate employment opportunities', 'Enable the company to provide community services', 'Enable the company to assist the disadvantaged group in the society' and 'Able to generate saving from GGP participation'.

Of these eight items, 'increased company's productivity' was ranked ninth by the small-sized group but 14th by the medium-sized group. Also, the benefit, 'enable the company to assist the disadvantaged group in the society' was ranked 15th by the small-sized group and 12th by the medium-sized group.

To further investigate the differences in perceptions between the small and medium-sized enterprises regarding the ranking of the 15 GGP participation benefits, an independent t-test analysis was conducted. The results are presented in Table 4.7.

Table 4.7 Summary of Independent T-Test Results for the Benefits of GGP Participation to SME Suppliers

No	Benefit of GGP	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
1	Engaging with GGP has improved the efficiency of procurement procedures.	2.391	.125	-.721	124.00	.473
2	Engaging with GGP has improved the transparency of procurement procedures.	1.295	.257	-.508	124.00	.613
3	Engaging with GGP has improved the compliance of company towards government environmental protection regulations.	1.316	.253	-1.055	124.00	.294
4	Company able to generate saving from GGP participation.	.203	.653	.204	124.00	.838
5	Green procurement has improved healthy workplace behaviors within the company.	2.034	.156	-.407	124.00	.685
6	Green procurement has increased company's productivity.	.721	.398	.953	124.00	.343
7	Participation in GGP has reduced company usage on natural resources.	2.261	.135	-.771	124.00	.442
8	Engaging with GGP has enabled the company to assist the disadvantaged groups in the society.	.286	.594	-.569	124.00	.570
9	Engaging with GGP has enabled the company to provide community services.	.208	.649	.214	124.00	.831
10	Engaging with GGP has enabled the company to contribute to the competitiveness of local industry.	7.987	.005	-.702	80.969	.484
11	Engaging with GGP has enabled the company to encourage foreign investment.	.294	.589	-.473	124.00	.637
12	Engaging with GGP has generated employment opportunities.	.055	.815	-.016	124.00	.987
13	Engaging with GGP helps in alleviating environmental problems such as global warming and ozone depletion.	.002	.969	-.414	124.00	.680
14	Engaging with GGP has improved the image of the company.	.260	.611	-.245	124.00	.807

Table 4.7 Summary of Independent T-Test Results for the Benefits of GGP Participation to SME Suppliers

No	Benefit of GGP	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
15	Engaging with GGP has enabled the company to meet the environmental protection goals and targets.	1.347	.248	-.646	124.00	.519

Based on the results presented in Table 4.7, the differences of GGP participation benefit as perceived by the two groups of respondents is not statistically significant for any statement as the result of claimed variances for the two groups (small and medium) is equal at Sig. (2-tailed) > .05.

The first objective of the current study, which is to investigate the benefits of GGP from the SME suppliers' perceptions, reveals that there is no difference from the perceptions of both small and medium enterprises. Further discussions on the second and third objectives of the study are in the next section.

4.5 FINDINGS AND DISCUSSION: OBJECTIVE 2 THE CHALLENGES OF GOVERNMENT GREEN PROCUREMENT INVOLVEMENT TO SME SUPPLIERS

This section discusses the results for Objective 2 of the study, which focuses on the challenges that SMEs face in participating in GGP. The results are presented in two parts, corresponding to the two research questions for this objective. Research question 1 is, 'What are the challenges faced by SMEs suppliers when participating in GGP?'; while research question 2 is, 'Are there any differences in the challenges faced by SMEs suppliers

when participating in GGP?' Accordingly, the overall results are presented first, followed by the results for the small and medium-sized groups. Table 4.8 provides the mean scores and rankings for each item on the challenges of GGP involvement for the overall respondents.

As shown in the table, the average mean score for the challenges of GGP participation among SME suppliers is 3.27. This indicates a moderate level of agreement among the respondents regarding the challenges, which consist of five main areas: financial, legal, people, knowledge, and organization challenges. The findings reveal that the challenge of people (M=3.54) has the highest rank mean score, followed by legal (M=3.42), knowledge (M=3.30), and financial (M=3.28). The final challenge in the study, organization (M=2.83), has the lowest level of agreement among the challenges, and is ranked fifth.

Table 4.8 Overall Results for the Challenges of Government Green Procurement Participation to SME Suppliers

No.	**Challenges of GGP**	**Overall Mean**	**Mean Score Ranking**
1	People	3.54	1
2	Legal	3.42	2
3	Knowledge	3.30	3
4	Financial	3.28	4
5	Organization	2.83	5
Overall Level of Challenges		**3.27**	**-**

Based on the overall mean results of the challenges faced by SMEs in GGP participation, the biggest obstacle is found to be related to people in terms of awareness, motivation, and competence. This is consistent with previous research by Testa et al. (2016) and

Vejaratnam et al. (2020), that lack of awareness about GGP is a more significant barrier than financial aspects.

However, to provide a more comprehensive overview of the results, a detailed discussion of each challenge is presented in the next section, starting with the financial challenges, followed by legal, people, knowledge, and organization challenges.

4.5.1 Financial Challenges

a) Results for all respondents

Table 4.9 presents the mean scores, standard deviation, and mean scores ranking of financial challenges of GGP engagement for overall respondents and based on group size (i.e., small and medium size). The mean scores range from 2.98 to 3.52, imply a low to moderate agreeableness of the GGP participation challenges.

Table 4.9 The Financial Challenges of Government Green Procurement Participation to SME Suppliers

No	Financial Challenge of GGP	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	The company incurred higher production cost in producing green goods/services.	3.52	0.94	1	3.52	0.93	1	3.52	0.97	2
2	The cost of procedures to engage with GGP is expensive.	3.34	0.85	2	3.26	0.78	2	3.58	1.00	1
3	The company faced difficulties in terms of financial resources due to engagement with GGP.	2.98	0.94	3	2.96	0.97	3	3.06	0.86	3

Based on the overall mean scores presented in Table 4.9, the biggest financial challenge for GGP is, ‘the company incurred higher production cost in producing green goods or services’ (M=3.52, SD=0.94). This result is consistent with prior studies that financial constraints are the primary barriers to sustainable procurement worldwide (Khan

et al., 2018). KEITI (2017) also reported that the price of green products and services may increase due to international financial instability and fluctuating oil prices, which make green products less desirable in terms of price.

The second biggest challenge is, 'the cost of procedures to engage with GGP is expensive' (M=3.34, SD=0.85). Ma et al. (2021) suggested that GGP market pressure triggers companies to incur a series of environmental investments to satisfy the requirements of green contracts. Wang et al. (2020) confirmed that the public and government sector prefer to cooperate with responsible and sustainable suppliers. It is undeniable that GGP procedures are costly, as Vejaratnam et al. (2020) found that in China, the expense of operating in an environmentally friendly manner is far more expensive than paying the penalty for destroying the environment. Therefore, it can be confirmed that every GGP supplier is required to bear additional expenses compared to non-GGP suppliers, and this is also faced by SMEs in Malaysia.

The third biggest challenge is 'the company faced difficulties in terms of financial resources due to engagement with GGP' (M=2.98, SD=0.94). Giménez-Pujol et al. (2013) mentioned that lack of financial resources is one of the barriers to GGP activity. This is also consistent with Ma et al. (2021) and Gerstenfeld and Roberts (2000), that the government should facilitate SMEs due to their limited in financial resources to tackle new pressures such as environmental regulations, in order to engage with GGP.

Overall, the findings of this section reveal that SME suppliers agree with the existence of financial challenges throughout their engagement in GGP. A more detailed overview of the perceptions of both small and medium enterprises is disclosed in the next section.

b) Differences in the perceptions of small and medium enterprises

As illustrated in Table 4.9 (please refer to page 57), both groups (small and medium-sized enterprises) rated all three financial challenges as either 'agree' or 'neutral' with mean scores, ranging from 2.96 to 3.58. In general, medium-sized companies have higher mean scores than small-sized companies, indicating that they perceive themselves as more affected by the financial challenges of GGP participation than their smaller counterparts. According to the mean score ranking, medium-sized companies are more concerned with the challenge of 'the cost of procedures to engage with GGP is expensive' which ranks first while small companies ranked it on second. On the other hand, small-sized companies ranked 'the company incurred higher production cost in producing green goods or services' as first, while medium-sized companies ranked it as second.

For a more in-depth overview, the differences in the perceptions between the small and medium-sized enterprises regarding the financial challenges of GGP were analyzed using an independent t-test. The result is presented in Table 4.10 below.

Table 4.10 Summary of Independent T-Test Results for the Financial Challenges of GGP to SME Suppliers

No	Financial Challenge of GGP Participation	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
1	The company incurred higher production cost in producing green goods/services.	.108	.742	.005	124.00	.996
2	financial resources due to engagement with GGP.	.517	.473	-.544	124.00	.588
3	The cost of procedures to engage with GGP is expensive.	3.746	.055	-1.863	124.00	.065

Based on the results as tabulated in Table 4.10, the differences in terms of financial challenges of GGP as perceived by the two groups of respondents is not statistically

significant for any statement as the result of claimed variances for the two groups (small and medium) is equal at Sig. (2-tailed) > .05.

4.5.2 Legal Challenges

a) Results for all respondents

Table 4.11 presents the mean scores, standard deviation and ranking of legal challenges of GGP engagement for overall respondents and based on group size (i.e., small and medium size). The mean scores range from 3.34 to 3.54, which imply a moderate agreeableness to the GGP participation challenges.

Table 4.11 The Legal Challenges of Government Green Procurement Participation to SME Suppliers

No	Legal Challenge of GGP Participation	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	There are inadequate policies and regulations on green procurement activities.	3.54	0.87	1	3.54	0.88	1	3.55	0.87	1
2	There are grey areas in the current GGP policy.	3.39	0.87	2	3.33	0.91	2	3.55	0.71	2
3	There are loopholes in the current GGP policy.	3.34	0.88	3	3.28	0.93	3	3.52	0.71	3

The top-ranked legal challenge is ‘there are inadequate policies and regulations on green procurement activities’ (M=3.54. SD=0.87). This finding is consistent with Giménez-Pujol et al. (2013), where the lack of a legal framework has been identified as a barrier to GGP. Brammer and Walker (2011) also noted that GGP implementation is problematic in unregulated nations. Thus, the respondents' agreement on inadequate GGP policies as the major legal barrier is not surprising.

The second-ranked challenge is, ‘there are grey areas in the current GGP policy’ (M=3.39, SD=0.87). The complex bidding procedures have made it difficult for suppliers to understand the grey areas (IGPN, 2010). Vejaratnam et al. (2020) emphasized on the

insufficient and unclear guidelines, which have caused difficulties for procurers. Brammer and Walker (2011) agreed that excessive information in the regulations could cause confusion among implementers and act as a barrier to GGP. This suggests that grey areas in the regulations, whether due to too much or too little information provided, pose a challenge to GGP.

The final rank is occupied by, 'there are loopholes in the current GGP policy' (M=3.34, SD=0.88). This finding is consistent with Vluggen et al. (2019), that existing loopholes in the GGP system and policy are barriers to GGP. It also confirms the findings of McMurray et al. (2014) and Vejaratnam et al. (2020) that procurement policies in Malaysia emphasize social aspects more than environmental ones. This indicates that the respondents perceive that the loopholes in the GGP policy are related to environmental aspects.

The findings suggest that SME suppliers recognize the existence of legal challenges in their engagement with GGP. The next section provides a detailed discussion on the perceptions of both small and medium enterprises.

b) Differences in the perceptions of the small and medium enterprises

As illustrated in Table 4.11 (please refer to page 60), both groups (small and medium-sized enterprises) rated all three legal challenges as 'agree' with the mean score ranging from 3.28 to 3.55. The medium-sized group scored higher mean scores than the small-sized group for most of the legal challenges, indicating that the medium-sized group perceived that they are more affected by the legal challenge from GGP participation than their small-sized counterparts. However, based on the mean score ranking, all the proposed challenges are similar for both groups, as well as for the overall respondents.

For a more detailed overview of the differences in perceptions between small and medium-sized enterprises regarding the legal challenges of GGP, an independent t-test analysis was conducted, and the results are presented in Table 4.12 below.

Table 4.12 Summary of Independent T-Test Results for the Legal Challenges of GGP to SME Suppliers

No	Legal Challenge of GGP Participation	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
1	There are inadequate policies and regulations on green procurement activities.	.005	.942	-.044	124.00	.965
2	There are loopholes in the current GGP policy.	.609	.437	-1.329	124.00	.186
3	There are grey areas in the current GGP policy.	.832	.364	-1.210	124.00	.229

Based on the results as tabulated in Table 4.12, the differences in terms of legal challenges of GGP as perceived by the two groups of respondents are not statistically significant for any statement as the result of claimed variances for the two groups (small and medium) is equal at Sig. (2-tailed) > .05.

4.5.3 People Challenges

a) Results for all respondents

Table 4.13 represents the mean scores, standard deviation and mean scores ranking of people challenges of GGP engagement for overall respondents and based on group size (i.e., small and medium size). The mean scores range from 3.40 to 3.65, which imply a moderate agreeableness of the GGP participation challenges.

Table 4.13 The People Challenges of Government Green Procurement Participation to SME Suppliers

No	People Challenge of GGP Participation	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	Lack of knowledgeable staff on GGP	3.65	0.97	1	3.62	1.03	1	3.73	0.76	1
2	Lack of competent staff in handling green procurement in the company.	3.56	1.02	2	3.56	1.06	2	3.58	0.90	2
3	Lack of motivated staff to engage in GGP.	3.40	0.96	3	3.40	1.02	3	3.42	0.75	3

The top-ranked challenge in terms of people is, 'lack of knowledgeable staff on GGP' (M=3.65, SD=0.97). Al Nuaimi et al. (2020) and Blomea et al. (2015) mentioned that one of the main issues in implementing GGP is the low supplier knowledge of GGP. Additionally, Bidin et al. (2018) emphasized that the lack of awareness and knowledge regarding GGP and the green concept is a constraint for practitioners or suppliers to engage with the green area. The lack of knowledgeable staff on GGP has been acknowledged by SME suppliers as the main challenge in terms of people challenges.

The second-ranked challenge is 'lack of competent staff in handling green procurement in the company' (M=3.56, SD=1.02). Competence is related to the skills and actions of the SME staff. Apart from being not knowledgeable, the staff of the SMEs could be a barrier in terms of people for the SMEs if the level of competence to deal with GGP is low. From the obtained result, this challenge does affect the SMEs throughout their participation in GGP. A major barrier to engaging in GGP is incompetence, which may result from a lack of guidance and awareness (McMurray et al., 2014). Vejaratnam et al. (2020) also confirmed that know-how skills to execute GGP is an additional sort of knowledge and is essential for surviving in the GGP market. As proposed in the GGP guidelines, suppliers who want to participate in GGP need to provide additional

information regarding their products or services which can affect the environment. McMurray et al. (2014) indicated that lack of competent experts is a hindrance for GGP in Malaysia to accomplish duties requiring technical skill, such as designing and incorporating green criteria.

The final challenge is, 'lack of motivated staff to engage in GGP' (M=3.40, SD=0.96). This statement might trigger the respondents as most of them are in the top management team. Delmonico et al. (2018) proposed that organizational culture or attitude is needed to promote and strengthen the implementation of GGP. Good organizational practices, such as green human resource management, training, and GGP procedures, could motivate GGP implementation in organizations (Al Nuaimi et al., 2020). Staff motivation is related to a company's or management's well-being. With regards to the respondents' backgrounds, where most of them are among the owner and the management team, the challenge of lack of motivated staff, might reflect the respondents' practices and support in the company, through their company engagement with GGP.

The findings of this section reveal that SMEs agree on the existence of people challenges throughout their engagement in GGP. However, a more thorough overview regarding the perceptions of both small and medium-sized enterprise is disclosed in the next section.

b) Differences in the perceptions of the small and medium enterprises

As illustrated in Table 4.13 (please refer to page 63), both groups (small and medium-sized enterprises) rated all three people challenges as 'agree', with the mean scores ranging from 3.40 to 3.73. In most cases, the medium-sized group scored higher mean scores than the small-sized group, suggesting that medium-sized companies are more affected by the people challenges from GGP participation than their smaller counterparts. Based on mean

score ranking, the challenges are similar for both groups as well as for the overall respondents.

However, for a further analysis on the differences of the perceptions between the small and medium enterprises regarding the people challenges of GGP, an independent t-test analysis was conducted, as presented in Table 4.14 below.

Table 4.14 Summary of Independent T-Test Results for the People Challenges of GGP to SME Suppliers

No	People Challenge of GGP Participation	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
1	Lack of knowledgeable staff on GGP	4.620	.034	-.609	76.02	.545
2	Lack of competent staff in handling green procurement in the company.	1.462	.229	-.080	124.00	.936
3	Lack of motivated staff to engage in GGP.	5.136	.025	-.157	76.45	.876

Based on the results presented in Table 4.14, the differences in terms of people challenges of GGP as perceived by the two groups of respondents is not statistically significant for any statement as the result of claimed variances for the two groups (small and medium) is equal at Sig. (2-tailed) > .05.

4.5.4 Knowledge Challenges

a) Results for all respondents

Table 4.15 displays the mean scores, standard deviation and mean scores ranking for the knowledge challenges of GGP engagement for overall respondents and based on group size (i.e., small and medium size). The mean scores range from 3.10 to 3.51, which imply a moderate agreeableness to the GGP participation challenges.

Table 4.15 The Knowledge Challenges of Government Green Procurement Participation to SME Suppliers

No	Knowledge Challenge of GGP Participation	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	There is insufficient information on green criteria in the GGP guidelines.	3.51	1.03	1	3.47	1.09	1	3.61	0.83	1
2	The company is unaware of the GGP policy direction.	3.29	1.15	2	3.25	1.21	2	3.39	0.97	2
3	The company is unaware of the green tax incentives provided by the government.	3.10	1.23	3	3.04	1.24	3	3.24	1.20	3

The top-ranked knowledge challenge is 'there is insufficient information on green criteria in the GGP guidelines' (M=3.51, SD=1.03). Bohari et al. (2017) indicated that the current green procurement guidelines in Malaysia are fragmented, while Giménez-Pujol et al. (2013) confirmed that there are usually insufficient tools, such as databases, to disseminate environmental criteria for products and services. This suggests that the respondents are not well-informed about the information regarding GGP and the accompanying green criteria.

The second-ranked challenge is, 'the company is unaware of the GGP policy direction' (M=3.29, SD=1.15). Giménez-Pujol et al. (2013) also supported this challenge, mentioning that it occurs because the GGP policy and benefits are not well-communicated to public officers, companies, or suppliers. Previous research has found that ineffective communication of financial and environmental benefits is one of the most often cited obstacles by respondents (Giménez-Pujol et al., 2013). This suggests that the lack of communication between the government and suppliers has led suppliers to be less sensitive towards GGP policies.

The least-ranked challenge is, 'the company is unaware of the green tax incentives provided by the government' (M=3.10, SD=1.23). SME awareness on environmental legislation and regulation is often low (Hutchinson & Hutchinson, 1995; Gerstenfeld & Roberts, 2000). SMEs are also unable to integrate the relevant environmental legislation into their business practices (Gerstenfeld & Roberts, 2000). This suggests that SME suppliers still have issues with awareness of environmental legislation despite being engaged in GGP. Geng and Doberstein (2008) and Erridge and Hennigan (2012) found that suppliers are not motivated to participate in GGP due to a lack of incentives received. This reason is also a barrier for SME suppliers to participate in GGP as the respondents in the current study are unaware of the incentives provided by the government.

The findings and discussions of this section reveal that SMEs agree on the existence of knowledge challenges throughout their engagement in GGP. A detailed discussion on the perspectives of both small and medium enterprises is presented in the next section.

b) Differences in the perceptions of the small and medium enterprises

As illustrated in Table 4.15 (please refer to page 66), both groups (small and medium-sized enterprises) rated all three knowledge challenges as 'agree' with the mean scores ranging from 3.04 to 3.61. The medium-sized group gave higher mean scores for most of the challenges compared to the small-sized group, indicating that medium-sized companies perceived that they are more affected by the knowledge challenges in GGP than their smaller counterparts. The mean score ranking shows that the challenges are similar for both groups and the overall respondents.

To analyze the differences in perceptions between small and medium enterprises regarding the knowledge challenges in GGP, an independent t-test analysis was conducted. The results of this analysis are presented in Table 4.16.

Table 4.16 Summary of Independent T-Test Results for the Knowledge Challenges of GGP to SME Suppliers

No	Knowledge Challenge of GGP Participation	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
1	There is insufficient information on green criteria in the GGP guideline.	2.437	.121	-.638	124.00	.525
2	The company is unaware of the GGP policy direction.	4.197	.043	-.698	70.147	.487
3	The company is unaware of the green tax incentives provided by the government.	.283	.596	-.800	124.00	.426

According to the results in Table 4.16, the differences in terms of knowledge challenges of GGP as perceived by the two groups of respondents is not statistically significant for any statement as the result of claimed variances for the two groups (small and medium) is equal at Sig. (2-tailed) > .05.

4.5.5 Organization Challenges

a) Results for all respondents

Table 4.17 represents the mean scores, standard deviation and mean score ranking of organization challenges of GGP engagement for overall respondents and based on group size (i.e., small and medium size). The mean scores range from 3.06 to 2.61, which imply a low agreeableness of the GGP participation challenges.

Table 4.17 The Organization Challenges of Government Green Procurement Participation to SME Suppliers

No	Organization Challenge of GGP	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	The size of the company hinders its innovation for green solutions.	3.06	1.09	1	3.03	1.10	1	3.15	1.09	3

Table 4.17 The Organization Challenges of Government Green Procurement Participation to SME Suppliers

No	Organization Challenge of GGP	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
2	The company has not targeted suppliers that promote environmentally-friendly products/services.	2.90	1.13	2	2.69	1.05	2	3.48	1.15	1
3	The company has not established a clear objective on purchase of green products and services.	2.82	1.09	3	2.66	1.10	3	3.27	0.94	2
4	The company has no specific green practices policy.	2.75	1.07	4	2.65	1.05	4	3.03	1.07	4
5	There is lack of support from company's top management for green procurement practices.	2.61	1.16	5	2.57	1.16	5	2.73	1.15	5

The top-ranked organization challenge is, 'the size of the company hinders its innovation for green solutions' (M=3.06, SD=1.09). This challenge is ranked first and is in tandem with Gerstenfeld and Roberts (2000) that smaller businesses, like SMEs, lack the internal expertise to respond to new demands for green solutions, which proves that the size of a company influences its outcomes. Meehan and Bryde (2011) and de Souza Dutra et al. (2017) also agreed that failure to implement GGP could be the result of insufficient ability, such as technology and management skills, because a company must adapt to a changing, more sustainable environment and develop innovative capabilities. This challenge is more relevant to smaller organizations, like SMEs, because of their limited resources due to their size.

The second-ranked challenge is, ‘the company has not targeted suppliers that promote environmentally-friendly products/services’ (M=2.90, SD=1.13). Since GGP is not mandatory in the country, it is expected that this challenge would be among the top three of the organization challenges. Almost 45 percent of Asia-Pacific Economic Cooperation (APEC) economies have reported that the shortage of product suppliers that meet environmental criteria is one of the barriers to GGP development (Giménez-Pujol et al., 2013).

The third-ranked challenge is, ‘the company has not established a clear objective on purchase of green products and services’ (M=2.82, SD=1.09). The respondents' agreement with this statement shows why SMEs face difficulties in engaging with GGP because engaging with GGP requires the integration of core organizational business values into the life cycle of the organization's products or services over time to succeed (Ochoa et al., 2017). Prior studies have also shown that organizations have an important role in implementing and engaging with GGP through gaining organizational commitment to this change (Prasad et al., 2018; Meehan & Bryde, 2015; Bhatty, 2012). In addition, linking sustainability values with organizational values has been found to have a favourable correlation with GGP engagement (Pedersen et al., 2018).

The findings of this section reveal that SMEs agree with the existence of organization challenges in their engagement with GGP. However, a more thorough overview regarding the perceptions of both small and medium enterprises is disclosed in the next section.

b) Differences in the perceptions of the small and medium enterprises

As illustrated in Table 4.17 (please refer to pages 68 and 69), both groups (small and medium-sized enterprises) rated all five organization challenges as ‘moderately agree’ with

the mean scores ranging from 2.57 to 3.03. The medium-sized group generally scored higher than the small-sized group for most of the organization challenges, indicating that medium-sized companies perceived they are more affected by the challenges of GGP participation than their smaller counterparts. In terms of mean score ranking, all proposed challenges are similar for both groups, as well as for the overall respondents.

However, among the five items, 'the size of the company hinders its innovation for green solutions', is ranked first by the small-sized group but third by the medium-sized group. Additionally, 'the company has not targeted suppliers that promote environmentally-friendly products or services', is ranked second by the small-sized enterprises and first by the medium-sized group.

To further investigate the differences in the perceptions between the small and medium enterprises regarding the ranking of the five GGP participation organization challenges, an independent t-test analysis was conducted, the results of which are presented in Table 4.18.

Table 4.18 Summary of Independent T-Test Results for the Organization Challenges of GGP to SME Suppliers

No	Organization Challenge of GGP Participation	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
1	The size of the company hinders its innovation for green solutions.	.132	.717	-.537	124.00	.592
2	The company has not targeted suppliers that promote environmentally-friendly products/services.	.428	.514	-3.646	124.00	.000
3	The company has not established a clear objective on purchase of green products and services.	1.900	.171	-2.870	124.00	.005

Table 4.18 Summary of Independent T-Test Results for the Organization Challenges of GGP to SME Suppliers

No	Organization Challenge of GGP Participation	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
4	The company has no specific green practices policy.	.231	.632	-1.800	124.00	.074
5	There is lack of support from company's top management for green procurement practices.	.139	.710	-.669	124.00	.505

According to the results in Table 4.18, two statements of GGP organization challenges are significantly differently by the small and medium groups, where t (126) = -3.646 and p-value = .000 and t (126) = -2.870 and p-value = .005, which the recognized items have been highlighted in Tables 4.17 and 4.18 respectively. Specifically, the result of the organization challenge, 'the company has not targeted suppliers that promote environmentally-friendly products/services' is significantly different between small enterprises (M = 2.69, SD = 1.05) and medium enterprises (M = 3.48, SD = 1.15). Also, 'the company has not established a clear objective on purchase of green products and services', which is significantly different between small enterprises (M = 2.66, SD = 1.10) and medium enterprises (M = 3.27, SD = 0.94). The 'not targeted supplier that promote environmentally-friendly product/services' and 'not established a clear objective on purchase of green products and services' are significantly more prevalent in medium enterprises than in small enterprises.

The possible explanation for this is the size of medium enterprises is bigger than small enterprises which caused them to consume high costs due to their larger operations and higher production volume. Targeting suppliers that promote environmentally-friendly products or services for their operational businesses might be challenging due to the high

cost to bear and the lack of availability of the supplier to support their production size as compared to small enterprises. Other than that, medium enterprises have a larger team, which means that each person has fewer responsibilities and there are more people to do the jobs compared to small enterprises. This brought a challenge to medium enterprises to focus on a specific area and to establish a clear objective towards the purchase of green products and services. On the other hand, small enterprises have fewer workers, making it easier for them to communicate and ensure the establishment of the objective to purchase the green product to be implemented in the organization. As for medium enterprises, it is difficult to ensure that all workers have the same information and knowledge (Lighthouse, 2022), especially regarding the company's objective to purchase green products or services.

The second objective of this study, which is to explore the challenges of GGP from the perception of SMEs, has identified two items that differ between small and medium-sized enterprises related to organization challenges. The discussion of the third objective is in the next section.

4.6 FINDINGS AND DISCUSSION: OBJECTIVE 3 THE IMPACT OF COVID-19 PANDEMIC ON GOVERNMENT GREEN PROCUREMENT INVOLVEMENT BY SME SUPPLIERS

This section presents the results for the third objective of the study, which is to investigate the impact of the COVID-19 pandemic on the participation of SMEs in GGP. The results are presented in two sections corresponding to the two research questions for objective three. Research question 1 is, 'How did COVID-19 impact the participation of SMEs suppliers in GGP?'; while research question 2 is, 'Are there any differences in the impact of the COVID-19 pandemic on GGP participation by SMEs suppliers?'. The results are

presented for the overall respondents first, followed by the results based on small and medium-sized groups. Table 4.19 displays the mean scores, standard deviation, and mean score rankings for each item on the impact of the COVID-19 pandemic on GGP involvement for both overall respondents and group size (i.e., small and medium size).

Table 4.19 The Impact of COVID-19 Pandemic in Government Green Procurement Participation on SME Suppliers

No	COVID-19 Pandemic Impact	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
1	COVID-19 pandemic has heightened health and safety practices among the employees.	4.00	0.68	1	4.02	0.68	1	3.94	0.70	1
2	COVID-19 pandemic has reduced company's turnover.	3.90	0.92	2	3.91	0.96	2	3.88	0.78	2
3	COVID-19 pandemic has forced the company to implement a cost reduction strategy.	3.82	0.77	3	3.83	0.80	3	3.79	0.70	4
4	Covid-19 pandemic had a negative impact on the company's ability to deliver work, supplies or services to the government.	3.79	0.82	4	3.81	0.86	4	3.76	0.71	5
5	Covid-19 pandemic has forced the company to incur higher production cost for green products/services.	3.78	0.83	5	3.80	0.85	5	3.73	0.76	6
6	Covid-19 pandemic has reduced demand from customers.	3.70	0.98	6	3.72	0.99	6	3.64	0.96	8

Table 4.19 The Impact of COVID-19 Pandemic in Government Green Procurement Participation on SME Suppliers

No	COVID-19 Pandemic Impact	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
7	Covid-19 pandemic had a negative impact on the company's ability to bid for government contracts.	3.67	0.94	7	3.62	0.98	7	3.79	0.82	3
8	Covid-19 pandemic has provided the employees with flexible working arrangements.	3.63	0.86	8	3.62	0.91	8	3.67	0.74	7
9	Covid-19 pandemic has negatively affected employees' productivity.	3.51	1.00	9	3.48	1.05	10	3.58	0.87	9
10	Covid-19 pandemic has deterred the company to obtain supplies from green suppliers.	3.50	0.94	10	3.49	0.95	9	3.52	0.91	10
11	Covid-19 pandemic has refrained the company from launching new products/services.	3.42	1.04	11	3.44	1.03	11	3.36	1.08	11
12	Covid-19 pandemic has increased company's engagement with the community.	3.29	0.96	12	3.30	0.96	12	3.27	0.94	12
13	Covid-19 pandemic has improved the reputation of the company as a supplier of green products/services.	3.07	1.00	13	3.11	1.02	13	2.97	0.95	14

Table 4.19 The Impact of COVID-19 Pandemic in Government Green Procurement Participation on SME Suppliers

No	COVID-19 Pandemic Impact	Overall			Small			Medium		
		Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank
14	The company received support from the government to minimize the negative impact of Covid-19 pandemic.	3.01	1.05	14	3.00	1.04	14	3.03	1.07	13

a) Results for all respondents

Based on the five-point Likert scale used in this study, higher mean scores indicate a greater impact of the COVID-19 pandemic on GGP participation by SME suppliers, while lower scores indicate a lesser impact. As shown in Table 4.19, mean scores range from 2.97 to 4.02, indicating a low to moderate impact of the COVID-19 pandemic on GGP suppliers. This demonstrates that all GGP SME suppliers were impacted by the pandemic. Based on the mean score ranking, the top five COVID-19 pandemic impact on the suppliers are, 'COVID-19 pandemic has heightened health and safety practices among the employees', 'COVID-19 pandemic has reduced company's turnover', 'COVID-19 pandemic has forced the company to implement a cost reduction strategy', 'COVID-19 pandemic had a negative impact on the company's ability to deliver work, supplies or services to the government' and 'COVID-19 pandemic has forced the company to incur higher production costs for green products or services provided'.

The first-ranked impact of the COVID-19 pandemic on the GGP suppliers is 'COVID-19 pandemic has heightened health and safety practices among the employees' (M=4.00, SD=0.68). This is consistent with Susser and Tyson's (2020) suggestion that companies focus first on the safety of their employees, as it minimizes infection and legal risks. This action is helpful in any life-threatening infectious disease, not just the coronavirus. Additionally, a survey by ACCA (2020) has found that over 84 percent of

respondents agreed to have stricter health and safety practices in their companies. Thus, it is expected that the safety of employees has become a priority for every SME supplier facing the COVID-19 pandemic.

The second-ranked impact of the COVID-19 pandemic is, 'the COVID-19 pandemic has reduced company turnover' (M=3.90, SD=0.92). According to studies conducted in various advanced countries of the world, there has been a significant decline in the revenue and sales of SMEs since the beginning of the pandemic (OECD, 2021). However, Zhang and Fang (2022) found that eco-friendly enterprises function better during the COVID-19 pandemic and were less affected than conventional SMEs and large firms. The results may differ from this study due to different cultures and awareness. Zhang and Fang (2022) suggested that the reason why eco-friendly SMEs are less vulnerable might be due to the efficacy of government initiatives targeted at eco-friendly SMEs and/or the healthy financial status of these firms prior to the pandemic.

The third-ranked impact is, 'the COVID-19 pandemic has forced the company to implement a cost reduction strategy' (M=3.82, SD=0.77). This result is in line with Tarki et al.'s (2020) suggestion that companies should apply cost reduction strategies in various ways to avoid unemployment. This impact has led the companies to apply the CBA to identify decisions that could reduce costs, such as enhancing remote working and reducing highly paid working employees. Additionally, ACCA (2020) found that one of the company's responses to the COVID-19 pandemic was to take actions, such as reducing costs, to ensure the business stays viable.

The impact of the COVID-19 pandemic on the company's ability to deliver work, supplies or services to the government was ranked fourth (M=3.79, SD=0.82). This statement is one of the top five concerns of SMEs, as it could have a significant impact on them due to their background as GGP suppliers. The results are consistent with research

conducted by ACCA (2020), that COVID-19 has caused supply chain disruptions, thereby creating challenges to meeting customer demands. Additionally, the survey conducted by the DOSM (2020) has shown that companies faced a shortage of supplies, making it difficult to deliver products or services to customers during the pandemic. This has strengthened the impact of this challenge on SMEs as GGP supplier.

The fifth rank is, 'the COVID-19 pandemic has forced the company to incur higher production cost for green products/services' (M=3.78, SD=0.83). It is expected that this statement would be in the top five preferences, as the whole world was affected by the pandemic's impact on the value chain. This is also in line with ACCA (2020), that the pandemic has caused organizations to increase material prices. The International Energy Agency (IEA) (2020) has published a report that highlights the pandemic's disruption of renewable energy supply chains, leading to delays and increased costs for projects. Additionally, a survey conducted by the consulting firm Accenture (2020), has found that consumers are increasingly prioritizing sustainable or green products, which could lead to increased demand for such products and potentially higher costs for companies producing them. However, the extent to which these factors have affected the increased costs of producing green products or services would depend on the specific industry and company and would require a more detailed analysis.

The findings of this section reveal that GGP SME suppliers agree on the impact of the COVID-19 pandemic, as evidenced by their participation in GGP. However, the world is still battling with the coronavirus, and businesses are still struggling to bounce back to survive in this 'new norm' phase.

In the next section, a more comprehensive overview of the perceptions of both, small and medium enterprises, regarding the impact of the COVID-19 pandemic on their businesses is provided.

b) Differences in the perceptions of small and medium enterprises

As illustrated in Table 4.19 (please refer to page 74 - 76), both groups (small and medium-sized enterprises) rated all 14 proposed impacts of the COVID-19 pandemic as either 'neutral' or 'agree', with the mean scores ranging from 3.01 to 4.00. For most of the impacts, the small-sized group scored higher than the medium-sized group, indicating that the pandemic had a greater impact on small companies than on their medium-sized counterparts throughout their participation in GGP. Based on the mean score ranking, the top two items of COVID-19 pandemic impact were ranked similar for both groups as well as for the overall respondents.

However, 10 of the COVID-19 pandemic impacts are perceived differently by the two groups of respondents. These 10 impacts are: 'Forced the company to implement a cost reduction strategy.', 'Had negative impact on the company's ability to deliver work, supplies or services to the government', 'Forced the company to incur higher production cost, 'Reduced customers' demands', 'Had negative impact on the company's ability to bid for government contracts, 'Provided employees with flexible working arrangements', Negatively affected employees' productivity', 'Deterred the company from obtaining supplies from green suppliers', 'Improved the reputation of the company as a supplier of green product or services' and 'Received support from the government to minimize the negative impact of the COVID-19 pandemic'.

Among these 10 items, the small-sized group ranked 'had a negative impact on the company's ability to bid for government contracts' as seventh, while the medium-sized group ranked it third. Additionally, the impact of 'reduced customers' demands' was ranked sixth by the small-sized group and eighth by the medium-sized group. To further investigate the differences in the perceptions of small and medium enterprises regarding

the ranking of the 14 impacts of the COVID-19 pandemic on SMEs' participation in GGP, an independent t-test analysis was conducted, and the results are presented in Table 4.20.

Table 4.20 Summary of Independent T-Test Results for the Impacts of the COVID-19 Pandemic on the GGP SME Suppliers

No	COVID-19 Pandemic Impact	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
1	COVID-19 pandemic had a negative impact on the company's ability to bid for government contracts.	1.235	.269	-.863	124.00	.390
2	COVID-19 pandemic had a negative impact on the company's ability to deliver work, supplies or services to the government.	1.141	.288	.292	124.00	.771
3	COVID-19 pandemic has reduced demand from customers.	.101	.751	.421	124.00	.674
4	COVID-19 pandemic has reduced company's turnover.	1.643	.202	.189	124.00	.850
5	COVID-19 pandemic has forced the company to incur higher production cost for green products/services.	.232	.631	.406	124.00	.685
6	COVID-19 pandemic has deterred the company to obtain supplies from green suppliers.	.079	.779	-.108	124.00	.914
7	COVID-19 pandemic has negatively affected employees' productivity.	1.326	.252	-.451	124.00	.653
8	Covid-19 pandemic has refrained the company from launching new products/services.	.024	.876	.366	124.00	.715
9	Covid-19 pandemic has improved the reputation of the company as a supplier of green products/services.	.956	.330	.681	124.00	.497
10	The company received support from the government to minimize the negative impact of Covid-19 pandemic.	.010	.919	-.142	124.00	.887
11	Covid-19 pandemic has provided the employees with flexible working arrangements.	2.023	.157	-.245	124.00	.807
12	Covid-19 pandemic has heightened health and safety practices among the employees.	.484	.488	.593	124.00	.554
13	Covid-19 pandemic has forced the company to implement a cost reduction strategy.	.111	.740	.255	124.00	.799

Table 4.20 Summary of Independent T-Test Results for the Impacts of the COVID-19 Pandemic on the GGP SME Suppliers

No	Covid-19 Pandemic Impact	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
14	COVID-19 pandemic has increased company's engagement with the community.	.262	.610	.146	124.00	.884

Based on the results as tabulated in Table 4.20, the differences in terms of the COVID-19 impact as perceived by the two groups of respondents are not statistically significant for any statement as the result of claimed variances for the two groups (small and medium) is equal at Sig. > .05.

4.7 CHAPTER SUMMARY

This chapter presents the results of the study with respect to the three research objectives. To summarize, the study ranked the benefits, challenges, and impact of the COVID-19 pandemic on the GGP SME suppliers. In terms of differences between the two groups (small and medium-sized enterprises) regarding their perceptions and preferences for the benefits, challenges, and the COVID-19 pandemic impact, there are no difference in the GGP benefits, two items in the challenges of GGP, and no differences detected in the COVID-19 pandemic impact. A summary of the results and the study conducted further explained in the next chapter.

CHAPTER FIVE

CONCLUSION

5.1 INTRODUCTION

Chapter 5 concludes the study. Section 5.2 highlights the summary of the results and section 5.3 discusses its implications. Limitations and suggestions for future research are explained in section 5.4, while section 5.5 provides a conclusion.

5.2 SUMMARY OF THE RESEARCH FINDINGS

The emergence of green markets in the country specifically in GGP, requires a few aspects which need to be focused on to ensure the effectiveness of the activities. For the current research, the focus is on the perceptions of SME suppliers since they are the major players in business operations in the country. The researcher selected SMEs as the sole respondents for the current study. The study derived three objectives that highlight the benefits, challenges, and impact of the COVID-19 pandemic on SMEs during their engagement in GGP activities. A total response rate of 31.98 percent was achieved in this study, which is a satisfactory response rate.

The results of the descriptive statistical analysis were used to rank the perceived benefits, challenges, and the COVID-19 pandemic impacts for SMEs as government suppliers. Based on the summary of the research findings in Table 5.1 below, the benefit of ‘alleviating environmental problems, such as global warming and ozone depletion’, is ranked first, and it is the most agreeable benefit among SMEs. In terms of differences in perceptions among the medium and small enterprises, there is no significant differences exist among the both enterprises regarding the benefit gained from the GGP engagement.

Regarding the results for the second objective, among the financial, legal, people, knowledge, and organization challenges, the challenge of people is ranked first by the SMEs, which marks it as the most agreeable major obstacle faced by them in GGP engagement. For financial challenges, the first rank is, 'the company incurred higher production cost in producing green goods or services', while for the legal challenges, the first rank is, 'there are inadequate policies and regulations on green procurement activities.' People and knowledge challenges both have 'lack of knowledgeable staff on GGP', and 'there is insufficient information on green criteria in the GGP guidelines' as the first rank. Organization challenges have 'the size of the company hinders its innovation for green solutions' in first place.

In terms of differences in perceptions between the medium and small groups, medium enterprises are more affected by two items under the organization challenges, i.e., 'the company has not targeted suppliers that promote environmentally-friendly products/services', and 'the company has not established a clear objective on purchase of green products and services'.

The third objective of this study is to investigate the effects of the COVID-19 pandemic on SMEs as GGP suppliers. Of the 14 items presented in the questionnaire, the highest effect due to the COVID-19 pandemic on SME suppliers is that health and safety practices among employees had improved. There are no differences in agreeableness for this by both small and medium enterprises. For a further overview of the summarized result, the next section discusses the implications of the current study.

Table 5.1 Summary of the Research Findings

Objectives Of the Study	Items Most Agreed to Respondents	Differences Between Small and Medium Enterprises
Objective 1: Benefits of the GGP	Alleviating environmental problems.	Can contribute to the competitiveness of the local industry.

Table 5.1 Summary of the Research Findings

Objective 2: Challenges of GGP 1. Financial challenges	Higher production cost.	NA
2. Legal challenges	Inadequate policies and regulations.	NA
3. People challenges	Lack of knowledgeable staff.	NA
4. Knowledge challenges	Insufficient information on green criteria in the GGP guidelines.	NA
5. Organization challenges	Size of the company hinders its innovation for green solutions.	The company has not targeted suppliers that promote environmentally-friendly products/services
		The company has not established a clear objective on purchase of green products and services
Objective 3: Impact of the COVID-19 pandemic	Heightened health and safety practices among the employees.	NA

5.3 IMPLICATIONS OF THE STUDY

The study's findings contribute in several ways. Firstly, the current study could contribute to the field of public sector accounting where GGP falls under one of the sustainability agendas applied in the country as proposed under the 12th Malaysia Plan. The study's results could assist the government's initiative in enhancing GGP practices among SMEs by taking into consideration the SMEs' point of view in generating GGP practices. On reviewing the challenges that mostly impact SMEs, it is shown that they are having difficulties in terms of costs to produce green goods and services. The government could reconsider this by providing more financial assistance to eco-friendly SMEs by adding more subsidies or engaging with banks to reduce loan conditions for them. This is supported by Zhang and

Fang (2022), where it has been proven that eco-friendly companies in Norway were able to sustain themselves during the COVID-19 pandemic due to stable finances as companies with low environmental risks can have access to bank loans more easily compared to conventional SMEs. This shows that with government assistance, SMEs could survive in the current unprecedented situation.

The current study may provide useful information to various parties, including academicians, practitioners, and regulatory bodies, on the benefits and challenges of GGP, as well as the impact of the COVID-19 pandemic on GGP suppliers among SMEs. In particular, the findings may provide insights and guidance to regulatory bodies, such as the MGTC regarding how to improve and revise GGP guidelines and procedures. For example, the MGTC can strengthen the GGP guidelines by distributing general information about the green criteria in posters or any digital platform to facilitate the SMEs, and also provide various government websites to promote GGP.

Other than that, the differences found between small and medium enterprises' preferences could help the government to plan a good programme on green procurement enhancement, which can suit both parties. A segregation for both parties is essential to help both small and medium enterprises grow further in their business. Since SMEs acknowledge their size as one of the challenges for them to engage with GGP, a clear understanding of this particular criterion will be helpful.

The findings can also trigger suppliers of the SME to better understand the GGP market pressure, especially during crises. Research has shown that not just a country, but an organization, such as a company, should prepare for any unprecedented incidents, like the COVID-19 pandemic from happening, and taking precautionary steps can prevent any unwarranted situation (OECD, 2020). The government should take action here, as securing the suppliers of the SME also means securing the SMEs that have been engaging with GGP.

Assistance to large firms that might be listed as the supplier to the SMEs is also needed, especially for the companies that produce eco-friendly products or services to SMEs.

It is also hoped that this study could reach the procurement officers and the government agencies, especially concerning the challenges faced by SMEs during their participation in GGP. This is because most of the SMEs find difficulties understanding the information provided in the GGP guidelines. It will be very helpful if the procurement officers clearly understand the GGP guidelines. The procurement officer, as the operational-level officer, should be able to derive all types of procurements and also help the government by promoting GGP opportunities to SMEs that meet the green criteria.

Last but not least, with regards to the differences in perception between small and medium companies, it is important to gain insights into the background and difficulties faced by each enterprise to ensure mutual benefits. SME Corp, as the body that understands better the enterprises should clarify the differences between both parties and disseminate this information to the public. Furthermore, it is hoped the government can address possible issues that may arise from the engagement in GGP by the suppliers as the government could trigger more detailed solutions instead of the suggestions above.

This study provides empirical evidence on several aspects of the GGP initiative in Malaysia. It explores the perceptions of SMEs as GGP suppliers in terms of the benefits and challenges of their participation in green practices. Chapter 2 of the literature review highlights that previous research has mostly focused on the benefits and challenges faced by the entire supplier group, including GLCs, MNCs, and SMEs, whereas this study only focused on SMEs. The perception of SMEs per se has been neglected, and thus, this research fills the gap by identifying SMEs' preferences on the proposed benefits and challenges of GGP, as well as the impact of the COVID-19 pandemic. This study contributes to research on GGP, especially with regards to SMEs.

5.4 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Despite the important implications of the current study for various parties, just like other studies, it encountered a few limitations which should be addressed.

Firstly, due to data collection and time limitations, the researcher was unable to collect a larger sample that would have given a better representation of the total population. The samples were only focused on MyHIJAU mark recipients, which did not cover all SMEs as the suppliers of GGP activities. Thus, future research can improve the findings by taking a larger sample of all SMEs as the suppliers of GGP, including non-MyHIJAU mark recipients. This is because current respondents do not represent the whole population of SMEs involved in GGP, and a larger sample would help analyze the benefits of gaining national green recognition, the MyHIJAU mark, as it is not compulsory for the companies to engage in GGP to apply for the national mark.

Secondly. this research could not differentiate between the perception of SMEs and non-SME respondents, as the data of non-SMEs is only referred to from prior research to compare and identify the gap between both parties. Moreover, the study's main objective is to identify the differences between small and medium enterprises. Thus, for future research, it is suggested to consider all sizes of companies that engage with GGP in Malaysia, not just SMEs. This is because GGP is introduced in the country to ensure participation in green practices, targeting the private sector, without specifying the size of the company. Large companies are also engaging with GGP, and taking their views would help in better understanding challenges from their perception.

Thirdly, regarding the current study's method, only a quantitative method was used, which did not allow the respondents to express their opinions. Although both online and physical meeting media were proposed to the respondents, most were reluctant to take the opportunity to meet the researcher due to their workload. Therefore, a proper interview

session through a qualitative method should be reviewed to ensure proper engagement and communication with the respondents. A qualitative approach would help the researcher to understand the respondents' points of view in-depth, as it might have been restrained in the current survey.

Despite the limitations mentioned above, this study provides relevant information to trigger interest in the area of GGP research. The emergence of sustainable agenda in the country could enhance more future research to fill the research gaps concerning GGP.

5.5 CONCLUSION

This chapter is a summary of the research. The engagement in green practices has the potential to positively influence the relationship between humans and nature, and this study is a preliminary step towards exploring this topic. It could be used as a basis to understand the current state of GGP activities in the country, thus triggering in-depth research in the future. Focusing on SMEs as the sole respondents in this current study has increased the researcher's knowledge of their struggles. Instead of understanding them from the size of their company, the SMEs appear to have the potential to steer the economy due to their large numbers. Other than that, the larger companies were once SMEs and focusing on the SMEs today can ensure they can grow further to spread their ideas and innovations. As Gerstenfeld and Roberts (2000) noted, SMEs are all unique, and this highlights the importance of protecting them. Protecting SMEs is not only beneficial for the economy, but also for the environment and future generations. This study provides a basis for future research to further explore the topic of GGP and its impact on SMEs as GGP suppliers in Malaysia.

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APPENDIX I: QUESTIONNAIRE
RESEARCH ON BENEFITS AND CHALLENGES OF GOVERNMENT GREEN PROCUREMENT (GGP) PARTICIPATION ON SMALL AND MEDIUM ENTERPRISES (SMEs)

I am Nurin Athilah Binti Masron, a Master of Science (Accounting) student from International Islamic University Malaysia (IIUM) under supervision of Dr. Zaini Zainol and Prof. Dr. Suhaiza Ismail. I am currently undertaking a study on **Government Green Procurement (GGP) in Malaysia*.**

In particular, this study aims to explore the benefits and challenges of GGP participation among SME suppliers. This survey also aims to identify the effects of COVID-19 pandemic towards SME suppliers. The questionnaire consists of four sections. Section A is on general information about the company and the respondent. Section B is on the benefits of GGP participation to the company. Section C covers the GGP challenges while Section D is on the effect of COVID-19 pandemic towards the company.

This survey is conducted for educational purposes only and your response will be treated as **highly confidential**. Please be assured that all responses will be aggregated and reported in such a way that anonymity of the respondents is preserved. This questionnaire will take approximately 10-15 minutes to complete. It is important to answer all questions to the best of your knowledge and experience. Your participation is vital for the development of knowledge in the GGP area. Therefore, I would be extremely grateful if you would be able to spare your precious time to answer all the questions in this questionnaire.

Once again, I would like to truly express my heartfelt appreciation for your contribution and participation in this research.

Thank You.

Yours sincerely,
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KEY TERMS
***Procurement** refers to the process of purchasing works, supplies and services.
***Government Green Procurement (GGP)** is about the purchase of environmentally friendly products and services by the government.

SECTION A: This section seeks information about your background and your company. Please answer ALL questions by placing a TICK (/) in the relevant box

1. Gender

   ☐ Male ☐ Female

2. What is your highest level of education?

   ☐ SPM
   ☐ STPM / Diploma / Bachelor's Degree
   ☐ Master's Degree / PhD or Doctorate

3. What is your current position in your company?

   ☐ Director/CEO
   ☐ Manager
   ☐ Assistant Manager
   ☐ Executive
   ☐ Other, please specify _____

4. Is your current task related to government procurement (i.e., supplying works, supplies or services to the government)?

   ☐ Yes
   ☐ No (proceed to Question 6)

5. If YES, how long have you been assigned to the current task?

   ☐ Less than 1 year
   ☐ 1 to less than 3 years
   ☐ 3 to 5 years
   ☐ More than 5 years

6. What type of industry does your company belongs to?

- ☐ Construction
- ☐ Consumer
- ☐ Industrial
- ☐ Finance
- ☐ Hotels
- ☐ Plantation
- ☐ Properties
- ☐ Real Estate Investment Trust
- ☐ Technology
- ☐ Trading-Services
- ☐ Others, please specify _____

7. What type(s) of government procurement activity is your company involved in? *(You may tick more than 1)*

- ☐ Works
- ☐ Supplies
- ☐ Services

8. How many years has your company being appointed as government supplier?

- ☐ Less than 1 year
- ☐ 1 to 5 years
- ☐ 6 to 10 years
- ☐ Over 10 years

9. How long has your company obtained the MyHIJAU* mark recognition?

*(MyHIJAU Mark is Malaysia's official green recognition for green products and services that comply with local and international environmental and ecological standards)

- ☐ Less than 1 year
- ☐ 1 to less than 3 years
- ☐ 3 to 5 years
- ☐ More than 5 years

10. What is the approximate number of employees in your company? *(Full time employees only)*

- ☐ Below than 5
- ☐ 5 to 30
- ☐ 31 to 75
- ☐ 76 to 200
- ☐ More than 200

11. Which of these ranges did your company's turnover fall into, in the last financial year?

- ☐ Less than RM 300,000
- ☐ RM 300,000 to less than RM 3 mil
- ☐ RM 3 mil to less than RM 15 mil
- ☐ RM 15 mil to less than RM 20 mil
- ☐ RM 20 mil to less than RM 50 mil
- ☐ More than RM 50 mil

SECTION B: This section covers the benefits for participating in GGP. Please answer ALL questions by placing a TICK (/) in the relevant box based on the scales below.

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1	2	3	4	5

No	Benefits of GGP Participation	1	2	3	4	5
1.	Engaging with GGP has improved the efficiency of procurement procedures.					
2.	Engaging with GGP has improved the transparency of procurement procedures.					
3.	Engaging with GGP has improved the compliance of company towards government environmental protection regulations.					
4.	Company able to generate saving from GGP participation.					
5.	Green procurement has improved healthy workplace behaviors within the company.					
6.	Green procurement has increased company's productivity.					
7.	Participation in GGP has reduced company usage on natural resources.					
8.	Engaging with GGP has enabled the company to assist the disadvantaged groups in the society.					
9.	Engaging with GGP has enabled the company to provide community services.					
10.	Engaging with GGP has enabled the company to contribute to the competitiveness of local industry.					
11.	Engaging with GGP has enabled the company to encourage foreign investment.					
12.	Engaging with GGP has generated employment opportunities.					
13.	Engaging with GGP helps in alleviating environmental problems such as global warming and ozone depletion.					

14.	Engaging with GGP has improved the image of the company.					
15.	Engaging with GGP has enabled the company to meet the environmental protection goals and targets.					

SECTION C: This section covers the GGP challenges faced by your company. Please answer ALL questions by placing a TICK (/) in the relevant box based on the scales below.

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1	2	3	4	5

No	Challenges of GGP Participation	1	2	3	4	5
FINANCIAL CHALLENGE						
1.	The company incurred higher production cost in producing green goods/services.					
2.	The company faced difficulties in terms of financial resources due to engagement with GGP.					
3.	The cost of procedures to engage with GGP is expensive.					
LEGAL CHALLENGE						
4.	There are inadequate policies and regulations on green procurement activities.					
5.	There are loopholes in the current GGP policy.					
6.	There are grey areas in the current GGP policy.					
PEOPLE CHALLENGE						
7.	Lack of competent staff in handling green procurement in the company.					
8.	Lack of motivated staff to engage in GGP.					
9.	Lack of knowledgeable staff on GGP					

KNOWLEDGE CHALLENGE						
10.	There is insufficient information on green criteria in the GGP guidelines.					
11.	The company is unaware of the green tax incentives provided by the government.					
12.	The company is unaware of the GGP policy direction.					
ORGANISATION CHALLENGE						
13.	The company has no specific green practices policy.					
14.	The company has not established a clear objective on purchase of green products and services.					
15.	The company has not targeted suppliers that promote environmentally-friendly products/services.					
16.	The size of the company hinders its innovation for green solutions.					
17.	There is lack of support from company's top management for green procurement practices.					

SECTION D: This section covers the effect of COVID-19 pandemic on your company. Please answer ALL questions by placing a TICK (/) in the relevant box based on the scales below.

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1	2	3	4	5

No	Covid-19 Pandemic Effects	1	2	3	4	5
1.	COVID-19 pandemic had a negative impact on the company's ability to bid for government contracts.					
2.	COVID-19 pandemic had a negative impact on the company's ability to deliver work, supplies or services to the government.					
3.	COVID-19 pandemic has reduced demand from customers.					
4.	COVID-19 pandemic has reduced company's turnover.					
5.	COVID-19 pandemic has forced the company to incur higher production cost for green products/services.					
6.	COVID-19 pandemic has deterred the company to obtain supplies from green suppliers.					
7.	COVID-19 pandemic has negatively affected employees' productivity.					
8.	COVID-19 pandemic has refrained the company from launching new products/services.					
9.	COVID-19 pandemic has improved the reputation of the company as a supplier of green products/services.					
10.	The company received support from the government to minimize the negative impact of COVID-19 pandemic.					
11.	COVID-19 pandemic has provided the employees with flexible working arrangements.					
12.	COVID-19 pandemic has heightened health and safety practices among the employees.					
13.	COVID-19 pandemic has forced the company to implement a cost reduction strategy.					

14.	COVID-19 pandemic has increased company's engagement with the community.					

Thank you for your contribution and participation.