# Impact of the COVID-19 pandemic on small and medium-sized enterprise (SME) government suppliers involved in government green procurement (GGP)

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## Abstract

**Purpose** – The objectives of this paper are twofold. First, it aims to investigate the impact of the COVID-19 pandemic on the activities and performance of small and medium-sized enterprises (SMEs) government suppliers involved in government green procurement (GGP). Second, it examines the differences in the impact of COVID-19 between small and medium-sized groups.

**Design/methodology/approach** – The study used a questionnaire survey that was distributed to SMEs listed in the MyHIJAU directory that supply green goods and services to the government. Of the total 394 sample respondents, 126 usable questionnaires were received, representing a usable response rate of 31.98%. Descriptive analysis of mean score, standard deviation and mean score ranking was used to analyse the overall results. A *t*-test analysis was carried out to examine the differences between the small and medium-sized groups of companies.

**Findings** – The study discovers that the SME government suppliers involved in GGP were impacted by the COVID-19 pandemic. The top ranked impacts are that "the COVID-19 pandemic has heightened health and safety practices among the employees", "the COVID-19 pandemic has reduced company's turnover", "the COVID-19 pandemic has forced the company to implement a cost reduction strategy", "the COVID-19 pandemic has had a negative impact on the company's ability to deliver work, supplies or services to the government" and "the COVID-19 pandemic has forced the company to incur higher production costs for green products or services provided". However, there is no significant difference between the impact of the COVID-19 pandemic on the small and medium-sized group of enterprises.

**Originality/value** – The present study is among the fewer studies on the impact of the COVID-19 pandemic, with particular focus on SME government suppliers involved in GGP.

**Keywords** COVID-19, Small and medium-sized enterprises (SMEs), Government green procurement (GGP), Sustainable procurement, MyHIJAU

**Paper type** Research paper

## 1. Introduction

Government green procurement (GGP) refers to 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; Organisation for Economic Co-operation and Development [OECD], 2011). It is one of the government's initiatives in response to the global climate change issue, which has caused temperatures and sea levels to rise as well as extreme weather events that pose a threat to human health, natural ecosystems and the global economy. In other words, GGP serves as a widely accepted strategy for preserving the environment and safeguarding people. Other

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terms that have also been used by studies to refer to GGP include, "green public procurement (GPP)", "environmentally-preferable purchasing (EPP)" and "sustainable public procurement (SPP)" (IGPN, 2010).

In the context of the Malaysian government, under the 12th Malaysia Plan, Malaysia is targeting to reduce greenhouse gases (GHGs) emission intensity in relation to the gross domestic product (GDP) by up to 45% by 2030 (Economic Planning Unit [EPU], 2021). One of the mechanisms to achieve this objective was the introduction of the GGP by the Malaysian government in 2012. In the pilot project of GGP, selected government agencies were required to provide information regarding sustainability activities as well as the current state of the environment (Ministry of Energy, Technology and Water [KeTTHA], 2012).

One of the benefits of GGP, as highlighted in the first edition of the GGP guideline, is that it enhances competitiveness among local manufacturers, especially small and medium-sized enterprises (SMEs) in international markets (KeTTHA, 2012). In Malaysia, SMEs account for over 98% of the total business establishments (SME Corp, 2021) and contribute more than 80% to the country's GDP. Moreover, the services and manufacturing sectors are the main contributors to SMEs' activities (Department of Statistics Malaysia [DOSM], 2021). The significant contribution of SMEs to the economy implies that their engagement with GGP is crucial towards supporting the government's green agenda. On the other hand, it has been reported that the manufacturing activities of SMEs have led to an increase in pollution and waste (Aznin *et al.*, 2017). This further emphasises the need for SMEs to participate in green procurement (Aznin *et al.*, 2017; Haslinda and Muruga, 2015). From year to year, there has been an increasing trend in green initiatives among SMEs, as evinced by the increasing number of green companies seeking recognition through the MyHIJAU mark, as documented in the MyHIJAU directory (MyHIJAU, 2022).

However, the COVID-19 pandemic had badly affected the whole world. In particular, COVID-19 has led to the shutdown of many businesses, with a greater number of them being SMEs (Dua *et al.*, 2020). The COVID-19 pandemic has hindered SMEs' ability to meet the demands of consumers (Lantham, 2021). According to Chan *et al.* (2021), SME GGP suppliers are more vulnerable as environmentally friendly options are often more expensive than their less sustainable counterparts. Furthermore, their reliance on sustainable materials and components during the pandemic forced them to face disruptions in the supply chain, which caused delays in delivery and increased costs (Chan *et al.*, 2021).

Recognising the adverse impact of the COVID-19 pandemic on SMEs, especially GGP suppliers, and the significant role that these SMEs have been playing in supporting the government's green agenda, the present study aims to investigate the impact of the COVID-19 pandemic on the activities and performance of SME government suppliers involved in GGP. In addition, it examines the differences between the impact of COVID-19 on small and medium-sized groups of enterprises. This study is essential, as it provides valuable insights into how SMEs can adapt to changing market conditions and ensure their long-term viability.

The remainder of this paper is structured as follows: Section 2 portrays the development of GGP in Malaysia and the literature review. Section 3 details the research methodology applied in the study. Findings and discussions are presented in Section 4. Implications, limitations of the study, suggestions for future research and a conclusion are presented in Section 5.

## 2. Literature review

### *2.1 Development of government green procurement (GGP)*

Green procurement is a common practice to prevent environmental damage and safeguard human health. Generally, it refers to the items acquired to comply with the main environmental goals, i.e. to minimise resource waste, promote recycling and reusing, source reduction and encourage material substitution (Salam, 2008). In addition, purchasing activity

plays a significant role in assisting an organisation to achieve its sustainable development objectives (Walker and Phillips, 2009; Ruparathna and Hewage, 2015).

According to the United Nations Environment Programme (UNEP) (2008, 2011), green procurement is the most strategic option to achieve targets in relation to achieving the sustainability agenda. Similarly, McMurray *et al.* (2014) claimed that appropriate guidance, awareness and resource availability may enable more green procurement participation, which will improve more than just the organisation's image; it will also boost the working environment and conditions, efficiency and transparency as well as the achievement of organisational goals and objectives.

Governments and several corporations across the globe are dedicated to implementing environmentally friendly products and practices in response to urgent requests for the conservation of resources and the sustainability of the environment (Salam, 2008). Therefore, the implementation of GGP is significant in achieving government objectives of reducing GHG emissions and assisting SMEs, saving money in the long run, encouraging innovation, creating a market for green products and creating jobs (Testa *et al.*, 2012; Adham and Siwar, 2012; Brammer and Walker, 2011; Walker and Phillips, 2009; Da Costa and Da Motta, 2019; Rizzi *et al.*, 2014). More recently, Vejaratnam *et al.* (2023), in their study, reaffirmed that the governments of many countries, both developed and developing, including Malaysia, have seriously embarked on GGP.

### *2.2 GGP in Malaysia and SMEs participation*

In Malaysia, the establishment of the National Green Technology and Climate Change Council by the Ministry of Energy, Green Technology and Water in 2009 marked the initial move towards the GGP agenda of the country. GGP was officially introduced in Malaysia in 2012 as one of the government's transformation agenda initiatives (Adham *et al.*, 2012). It was identified as the enabler that will transform the national environment through innovation while supporting the local economy. It was envisaged that GGP could potentially open up large new markets, improve business performance and stimulate sustainable consumption and production (KeTTHA, 2012; Adham *et al.*, 2012). It was believed that the introduction of the GGP would have a domino effect on the economy. Furthermore, GGP could facilitate long-term savings through the production of higher-quality products, healthier working conditions, a reduction of carbon emissions and increased energy efficiency. The total saving was estimated at RM 295 bn, with the creation of 47,000 jobs in the green industry (PEMANDU, 2010; Adham and Siwar, 2012; Adham *et al.*, 2012; KeTTHA, 2014).

The Malaysian Green Technology and Climate Change Corporation (MGTC) published several GGP guidelines on public green purchasing and procurement policies in 2014, 2018 and 2020. The aim of the guidelines and policies is to enable the government to shape the private sector companies' strategies and behaviour towards cleaner and more sustainable activities, designs, services and products (Bohari *et al.*, 2020; Razali *et al.*, 2021; de Giacomo *et al.*, 2019; Testa *et al.*, 2016). In addition, awareness campaigns, such as the Green Technology and Eco-Products Exhibition (IEGM), were carried out to encourage the use of green technology and eco-products that can contribute to green growth and showcase Malaysia as a green technology hub. Furthermore, the Malaysian Green Directory was developed to track and classify credible green products with the support of the Green Purchasing Network Malaysia (GPNM), the Malaysian Industrial Development Authority (MIDA) and the International Green Purchasing Association (IGPA) towards supporting the GGP agenda (IGPN, 2010).

The MyHIJAU programme was introduced to promote sustainable production and consumption through four thrusts: (1) MyHIJAU Eco-Label scheme; (2) MyHIJAU Green Procurement (which lists the criteria for green products, services and works for GGP); (3) MyHIJAU Green Directory, which provides information on green services and products for stakeholders and (4) MyHIJAU SME, which promotes green awareness and business

matching within industries. Only Malaysian-based companies are eligible to apply for MyHIJAU recognition, as the government's main aim is to assist local industries (Ahmad and Buniamin, 2020).

The SMEs in Malaysia can engage with GGP through various channels, including registration via the Malaysian Government e-Procurement System (GePS) and participation 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.

### *2.3 Impact of the COVID-19 pandemic on Malaysian businesses*

The global COVID-19 pandemic has caused significant loss of life and human suffering, making it the largest public health crisis in recent memory. This crisis has also led to a major economic crisis, with affected countries experiencing a halt in production, decreased consumption and confidence, negative stock exchange responses due to heightened uncertainties as well as a cease in operations (ACCA, 2020; Kamal-Chaoui, 2020; Mace, 2020).

With regards to the COVID-19 pandemic, the Malaysian government has taken efforts towards economic recovery by mobilising a variety of assistance packages for businesses, including the *Pelan Jana Semula Ekonomi Negara* (PENJANA) and *Kita Prihatin*. Both types of assistance were introduced to assist SMEs to survive and to ensure they could reassess their business and work in the "new normal". It is pertinent to note that the COVID-19 pandemic has had a more significant impact on SMEs than the other sectors, which has also affected their involvement in GGP. The DOSM conducted a survey on the effects of the COVID-19 pandemic on the economy and businesses during the movement control order (MCO), which revealed that more than two-thirds of respondents reported no revenue during this period (DOSM, 2020).

The SME Corp. proposed in its 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 a positive change in an organisation's supply chain, while Zhang and Fang (2022) claimed conventional SMEs and large firms have been more affected by the COVID-19 pandemic than eco-friendly SMEs, as elaborated on below.

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

Based on the review, previous research has mostly focused on the entire supplier group, including government-linked companies (GLCs), multinational corporations (MNCs) and SMEs, whereas this study only focuses on SMEs. The perception, specifically of SMEs, has been understudied and thus, this research fills the gap by identifying the impact of the COVID-19 pandemic on SMEs.

## 3. Research methodology

### *3.1 Research instrument*

A questionnaire survey was used to collect data from respondents. Making the questionnaire available online and paperless allows respondents to have flexible times and places 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 was developed based on prior studies, including those by the Scottish Government (2021) and the ACCA (2020). The questionnaire explores the extent of the impact of the COVID-19 pandemic on SME suppliers who are engaged with GGP. There are 14 statements on 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.

In ensuring the reliability of the instrument, the Cronbach's alpha value was calculated, and the value is 0.8, which indicates that the statements are reliable. In addition, the skewness and kurtosis values are below 2 and -2, respectively, which imply that the data is normally distributed.

### *3.2 Respondents and data collection procedures*

A non-probability sampling technique was used to select the sample from the stated population, as the exact number of SMEs that supply green products or services to the government is unknown. This is because the SME GGP suppliers are not required to obtain the MyHIJAU mark recognition, and the exact number of SME suppliers is not specified anywhere.

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 were accessed via email, WhatsApp as well as direct calls. The questionnaire survey was presented in the Google Form link as well as the Word document attached to the email sent. A total of 394 respondents were identified and invited to participate in the study. After two weeks of initial distribution, a reminder was sent. As a result, 145 of the respondents returned the questionnaire. However, 19 questionnaires were excluded as they were responded to by non-GGP suppliers or non-SMEs and a few questionnaires were incomplete. Hence, 126 questionnaires were usable, representing a 31.98% usable response rate.

### *3.3 Data analysis*

Statistical Package for the Social Sciences (SPSS) software was used to analyse the data collected as well as for descriptive analysis and independent sample *t*-test analysis. Descriptive analysis is the most efficient and effective method of summarising the characteristics of large sets of data (McDaniel and Gates, 2010). The mean score ranking identifies the importance of various items rated in the score (Cooper and Schindler, 2014). The *t*-test evaluates whether the mean value of the impact of the COVID-19 pandemic on small enterprises differs significantly from the mean value of the test variable for medium enterprises.

## 4. Findings and discussion

### *4.1 Demographic information of respondents*

The demographic information of the respondents, including the type of industry engaged with, and the type of public procurement activities they have participated in, is presented in Table 1. Other than that, the familiarity of the respondents to the GGP process is also shown in the Table.

The results show that the majority of the respondents are male, accounting for 69% of the total respondents, while the remaining 31% are female. As regards the current work positions, most of the respondents are managers and directors, accounting for 42.9% and

| Category | | Frequency | Percent |
|---|---|---|---|
| Gender | Male | 87 | 69.0 |
| | Female | 39 | 31.0 |
| | *Total* | *126* | *100.0* |
| Position in the company | Director/CEO | 40 | 31.7 |
| | Manager | 54 | 42.9 |
| | Assistant Manager | 6 | 4.8 |
| | Executive | 19 | 15.1 |
| | Other | 7 | 5.6 |
| | *Total* | *126* | *100.0* |
| Working experiences with GGP | None | 60 | 47.6 |
| | Less than 1 year | 8 | 6.3 |
| | 1 to less than 3 years | 20 | 15.9 |
| | 3–5 years | 14 | 11.1 |
| | More than 5 years | 24 | 19.0 |
| | *Total* | *126* | *100.0* |
| Types of industry | Construction | 37 | 29.4 |
| | Consumer | 5 | 4.0 |
| | Industrial | 29 | 23.0 |
| | Properties | 1 | 0.8 |
| | Technology | 41 | 32.5 |
| | Trading services | 13 | 10.3 |
| | *Total* | *126* | *100.0* |
| Types of procurement | Works | 31 | 17 |
| | Supplies | 75 | 42 |
| | Services | 74 | 41 |
| | *Total procurement activity engagement* | *180* | *100.0* |

**Source(s):** Author's own creation/work

**Table 1.** Demographic information of the respondents

31.7%, respectively. The remaining respondents are executives, assistant managers and other related positions.

There are various types of industries among the SME respondents, and the highest are from the technology industry, representing 32.5%. The construction industry is 29.4%, while the trading services industry is 10.3% of the total respondents. The industry with the lowest percentage is the consumer industry with 4.0% and the property industry with 0.8%. About 42% of the respondents are involved in supply-based procurement, 41% in service-based procurement and 17% in work-based procurement activities.

### *4.2 Impact of the COVID-19 pandemic on SME government suppliers involved in GGP*

Table 2 presents the mean scores and mean score ranking for each of the 14 impacts of the COVID-19 pandemic on the participation of SMEs in GGP. The overall mean scores range from 2.97 to 4.02, which indicate a moderate to high impact of the COVID-19 pandemic on GGP suppliers. In sum, the SME GGP suppliers were impacted by the pandemic. Based on the mean score ranking, the top five COVID-19 pandemic impacts on 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 has 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,

| No | COVID-19 pandemic impact | Overall Mean | Overall SD | Overall Rank | Small Mean | Small SD | Small Rank | Medium Mean | Medium SD | Medium 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 |
| 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 |
| 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 |

**Source(s):** Authors' own creation/work

**Table 2.**
The impact of the COVID-19 pandemic in government green procurement participation on SME suppliers

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 minimises infection and legal risks. This action is helpful for any life-threatening infectious disease, not just the coronavirus. Additionally, a survey by the ACCA (2020) found that over 84% of respondents agreed to have stricter health and safety practices in their companies. Having a stable and conducive environment in the workplace would boost employees' confidence in the company. Thus, it is quite natural that the safety of employees has become a priority for every SME supplier who was affected by 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 developed countries, there has been a significant decline in the revenue and sales of SMEs as a result of the pandemic (OECD, 2021). However, Zhang and Fang (2022) found that eco-friendly enterprises functioned better during the COVID-19 pandemic and were less affected than conventional SMEs and large firms. They suggested that eco-friendly SMEs were less vulnerable 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 results may differ from this study due to the different initiatives taken by the Malaysian government to assist SMEs during the pandemic. In a study by Islam *et al.* (2021), which focuses on SMEs in Malaysia, to survive during the unstable economic situation, SMEs were forced to apply for financial assistance, like loans, and this might have affected their profit due to repayments to be made in the future.

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 to prevent unemployment during the COVID-19 pandemic. In a similar study, the ACCA (2020) found that cost reduction is one of the strategies undertaken by businesses in response to the COVID-19 pandemic in order to ensure the viability of the business.

The impact of the COVID-19 pandemic on the company's ability to deliver work, supplies or services to the government is 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 role as GGP suppliers. The result is consistent with research conducted by the ACCA (2020) that the COVID-19 pandemic caused supply chain disruptions, thereby creating challenges to meet customer demands. Additionally, the survey conducted by the DOSM (2020) has shown that companies faced a shortage of supplies, making it difficult for them to deliver products or services to customers during the pandemic. This has strengthened the impact of this challenge on SMEs as GGP suppliers.

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, as the whole world was affected by the pandemic's impact on the value chain. This is also in line with the ACCA (2020) that the pandemic has resulted in organisations facing increased 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. Although there has been an increase in demand for green goods, SMEs cannot be compared to large green companies, as SMEs are not equipped with adequate resources to meet demand. This is supported by a survey conducted by Accenture (a consulting firm) (2020), which found that consumers are increasingly prioritising sustainable or green products, which could lead to increased demand for such products and potentially higher costs for companies producing them.

However, a more comprehensive overview from SMEs is needed to further analyse the impact of the COVID-19 pandemic on the size of the enterprises.

*4.3 Differences between the impact of the COVID-19 pandemic on small and medium-sized groups of enterprises*

Based on the mean scores and mean score ranking for each of the two groups as shown in Table 2, 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 the small-sized companies than on their medium-sized counterparts throughout their participation in GGP. Based on the mean score ranking, the top two impacts of the COVID-19 pandemic are similar for both groups as well as for the overall respondents.

However, ten of the COVID-19 pandemic impacts are perceived differently by the two groups of respondents. These ten 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 minimise the negative impact of the COVID-19 pandemic".

Among these ten 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. Medium-sized enterprises may have had an easier time meeting bonding requirements due to their relatively stronger financial position, as government contracts often require contractors to provide performance and payment bonds. Small businesses may have faced challenges in obtaining such bonds, thereby limiting their eligibility for certain contracts. In other words, medium-sized companies are more bound to government contracts as compared to small enterprises. This might have triggered their answers to this question, in that they were affected more in bidding for government contracts due to the COVID-19 pandemic, thus making this variable to be listed among the top three of the most impacted variables.

Additionally, the impact of "Reduced customers" demands' was ranked sixth by the small-sized group and eighth by the medium-sized group. This result might be due to the small enterprises' dependence on a few key clients for a substantial portion of their revenue. If any of these clients reduced their demands, it could have had a disproportionately larger effect on the small business. However, medium-sized enterprises, with a more diverse clientele, may have been less vulnerable to the impact of a single client's changing demands due to the COVID-19 pandemic.

To statistically test for the differences between the two groups (small and medium-sized enterprises) on the impact of the COVID-19 pandemic on their businesses, an independent *t*-test was carried out, and the results are presented in Table 3.

However, based on the results, there are no significant differences between the impacts of the COVID-19 pandemic on the two groups of enterprises.

## 5. Implications, limitations, suggestions for future research and conclusion

The current study examined the impacts of the COVID-19 pandemic on SMEs during their engagement with GGP activities. Of the 14 impacts of the COVID-19 pandemic presented in the questionnaire, the key impacts are that "the COVID-19 pandemic has heightened health and safety practices among the employees", "the COVID-19 pandemic has reduced company's turnover", "the COVID-19 pandemic has forced the company to implement a cost reduction strategy", "the COVID-19 pandemic has had a negative impact on the company's ability to deliver work, supplies or services to the government" and "the COVID-19 pandemic has forced the company to incur higher production costs for green products or services provided". In addition, there are no significant differences between the impacts of the COVID-19 pandemic on the small and medium groups of enterprises.

| 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 | 0.269 | −0.863 | 124.00 | 0.390 |
| 2 | COVID-19 pandemic had a negative impact on the company's ability to deliver work, supplies or services to the government | 1.141 | 0.288 | 0.292 | 124.00 | 0.771 |
| 3 | COVID-19 pandemic has reduced demand from customers | 0.101 | 0.751 | 0.421 | 124.00 | 0.674 |
| 4 | COVID-19 pandemic has reduced company's turnover | 1.643 | 0.202 | 0.189 | 124.00 | 0.850 |
| 5 | COVID-19 pandemic has forced the company to incur higher production cost for green products/services | 0.232 | 0.631 | 0.406 | 124.00 | 0.685 |
| 6 | COVID-19 pandemic has deterred the company to obtain supplies from green suppliers | 0.079 | 0.779 | −0.108 | 124.00 | 0.914 |
| 7 | COVID-19 pandemic has negatively affected employees' productivity | 1.326 | 0.252 | −0.451 | 124.00 | 0.653 |
| 8 | COVID-19 pandemic has refrained the company from launching new products/services | 0.024 | 0.876 | 0.366 | 124.00 | 0.715 |
| 9 | COVID-19 pandemic has improved the reputation of the company as a supplier of green products/services | 0.956 | 0.330 | 0.681 | 124.00 | 0.497 |
| 10 | The company received support from the government to minimize the negative impact of COVID-19 pandemic | 0.010 | 0.919 | −0.142 | 124.00 | 0.887 |
| 11 | COVID-19 pandemic has provided the employees with flexible working arrangements | 2.023 | 0.157 | −0.245 | 124.00 | 0.807 |
| 12 | COVID-19 pandemic has heightened health and safety practices among the employees | 0.484 | 0.488 | 0.593 | 124.00 | 0.554 |
| 13 | COVID-19 pandemic has forced the company to implement a cost reduction strategy | 0.111 | 0.740 | 0.255 | 124.00 | 0.799 |
| 14 | COVID-19 pandemic has increased company's engagement with the community | 0.262 | 0.610 | 0.146 | 124 | 0.884 |

**Source(s):** Authors' own creation/work

**Table 3.** Summary of independent *t*-test results for the impacts of the COVID-19 pandemic on the GGP SME suppliers

There are several implications of the current study's findings to various stakeholders, including the government, SME GGP suppliers and other relevant authorities. To the government, as the COVID-19 pandemic has negatively affected the SMEs, particularly the financial aspects of the SMEs involved as government green suppliers, the provision of more effectively distributed financial aid to eco-friendly SMEs may help them to recover from the impact and to remain in business. This has been evidenced to be successful as reported by Zhang and Fang's (2022) study on eco-friendly companies in Norway, which were able to survive from the impact of the pandemic with financial aid from their government. Government support and financial aid may to some extent also be extended to large businesses as they were also affected by the pandemic.

For the SME GGP suppliers, the evidence and information from the current findings may make them realise that the impacts of the COVID-19 pandemic are real. Therefore, these negative experiences should make them more prepared to take the necessary precautionary steps and arrive at immediate solutions should any similar unprecedented incidents recur in the future (OECD, 2020). In addition, the current findings may provide insights and guidance to regulatory bodies, such as the MGTC, towards improving and revising the existing GGP guidelines and procedures. For example, the MGTC can enhance the effectiveness of the GGP guidelines by

distributing more general information about the green criteria using physical posters as well as digital platforms, such as social media and relevant government websites, to promote GGP.

Despite the important findings of this study, there are several limitations that can be highlighted for future research. 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. Thus, future researchers can improve the findings by taking a larger sample of all SMEs as the suppliers of GGP, including non-MyHIJAU mark recipients.

In addition, only the quantitative method was used to carry out the present study, which did not allow the respondents to express their opinions. Although both online and physical meeting platforms 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 could be used to ensure more effective engagement and communication with the respondents. A qualitative approach would help the researcher understand the respondents' points of view in depth, as this might have been a constraint in the current survey.

Engagement with 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. 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 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.

Despite the limitations, the present study offers insightful evidence on the impacts of the COVID-19 pandemic, particularly on SME GGP suppliers. This is crucial to effectively formulate strategies to mitigate negative impacts and consequently, to further promote GGP practices towards ensuring the achievement of the sustainability development goals (SDGs) of the government.

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