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Research article

The perspectives of stakeholders on the effectiveness of green financing schemes in Malaysia

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Abstract: Growing concerns of climate crisis mitigation in Malaysia over the decades have created pressure for public listed companies and small and medium enterprises in the country to adopt a different approach in their business operations. Green financing schemes such as the Environmental, Social and Governance (ESG) indicator, the FTSE4Good index by the regulatory body Bursa Malaysia for public listed companies and the Green Technology Financing Scheme stemming from the National Green Technology Policy by the Malaysian Green Technology and Climate Change Centre, address the need to improve operations sustainably through financing. Based on interviews with government agencies and public listed companies, this paper presents the effectiveness of the guidelines and schemes in place from their perspectives. The value drivers, challenges and impact from adhering to the FTSE4Good index were discovered. Findings found that the government is a central player in ensuring the initiatives' effectiveness. Although there have been improvements over the years in the industry since its introduction, barriers are still lingering that may hamper the extent of the initiatives' effectiveness. Suggestions are made as a feedback mechanism for improved green financing towards Malaysia's aspiration on becoming a high-income nation by 2025 and in support of the Sustainable Development Goal 9: Industrial innovation and infrastructure. To realise that aspiration, every player in the industry plays a critical role in greener operations, including the small and medium enterprises.

Keywords: green financing; Environmental Social and Governance; Green Technology Financing Scheme; circular economy; public listed companies; government

JEL Codes: Q56

1. Introduction

The concept of 'green' is linked with 'sustainability', or 'eco'. The World Bank emphasised the importance of raising capital to combat global climate change (Tu et al., 2020). This was discussed during the G20 Resource Efficiency Dialogue in 2019 (European Commission and Government of Japan, 2019) and was referred to as 'green financing'. The United Nations Environment Programme states that its objective is to boost financial flows from the public, private and not-for-profit sectors toward sustainable development initiatives. The term 'sustainable financing' is occasionally used.

In 2016, Malaysia ratified the Paris Climate Agreement with Nationally Determined Contributions of 45 per cent improvement in greenhouse gas (GHG) emission intensity per unit Gross Domestic Product (GDP) by 2030 compared with 2005 levels, with 10 per cent conditional commitment upon receiving financial, technological and capacity support from developed countries. Prior to the Paris Climate Agreement, Malaysia's participation in other United-Nations sanctioned international agreements such as the Montreal Protocol in 1987, the Kyoto Protocol in 2002 and the Sustainable Development Goals in 2015 showed Malaysia's commitment to green growth and climate change mitigation. In fact, in 2009, Malaysia had already voluntarily targeted to reduce its greenhouse gas emission intensity of its Gross Domestic Product by up to 40% compared to 2005 levels by 2020 ahead of the Paris Agreement in 2015 (Prime Minister's Office, 2020).

Malaysia introduced the Green Technology Financing Scheme (GTFS) in 2010 after the launch of the National Green Technology Policy (2009) with an allocation of MYR 1.5 billion to spur green technologies in the energy, manufacturing, water, waste management transportation and building sectors (Ahmad Ludin et al., 2013). The scheme is targeted to the Small and Medium-Sized Enterprises (SME) that identify capital funding as a barrier to going green (Musa and Chinniah, 2016). The Malaysian Green Technology and Climate Change Centre (MGTC), formerly known as Malaysia Energy Centre, was tasked with the responsibility of supervising the scheme. MGTC is currently under the Ministry of Environment and Water's jurisdiction.

The GTFS is treated as a loan with a 60% guarantee on the financing amount and a 2% interest rebate from the country's chosen. The first cohort of the GTFS from 2010 to 2017 amounted to MYR 3.5 billion, while the second cohort from 2019 to 2020 amounted to MYR 2 billion, totalling MYR 5.5 billion (MGTC, 2021). As of 2021, the scheme has utilised its funding of cohorts 1.0 and 2.0 since its inception. Most of the companies that applied and were approved by the scheme came from the energy sector (MGTC, 2021). From 2010 to 2020, the energy sector represented 87% of the overall companies applied and approved under the scheme. This is followed by waste and water at 11% and building and transportation at 1% each. Additional funding was announced in the 2021 National Budget with an allocation of MYR 2 billion. Further to that, tax exemption for the Sustainable and Responsible Investment (SRI) green Sukuk grant is also extended for all types of Sukuk and bonds, until 2025 (Economic Planning Unit, 2021).

Environmental, Social and Governance (ESG) is one of the indicators that investors referred to, to support green financing. The share of ESG is rising, with at least USD 3 trillion worth of investments

being tracked in the world (The Economist, 2019). For the first quarter in 2021, the global flows into ESG related investments were at USD 180 billion, increasing from USD 46 billion in the same quarter in 2020 (The Economist, 2021). In 2014, Bursa Malaysia, the exchange holding company under the purview of the Securities Commission and the Ministry of Finance, adopted the ESG indicator FTSE4Good index to assess public listed companies (PLCs) on their sustainability performance (Bursa Malaysia, n.d.). In 2020, the constituents on the index had grown to seventy-five from twenty-four in 2014.

This shows that more PLCs are adopting green initiatives, bringing positive impact to the company and environment. However, there is no study to support this claim. At the same time, perhaps there are other motivations to incorporating the ESG indicator besides profitability (Kweh et al., 2017; Van Veelen, 2021), the company's own culture or nature of the industry (Abdul Aziz et al. 2018). Despite the efforts and the availability of green funding, many scholars discovered current green financing is still insufficient to promote green growth (Chua and Oh, 2011; Fernando and Wah, 2017; Hafner et al., 2020; Md Nor et al., 2016; Owen et al., 2018; Van Veelen, 2021; Yatim et al., 2017). Scholars evaluated past policies and schemes for their effectiveness from the perspectives of investors, financial institutions and corporations (Amran et al., 2018; Fernando and Wah, 2017; Hafner et al., 2020; Van Veelen, 2021; Yatim et al., 2017). While the literature emphasised the necessity of the government developing clear, long term plans with short, medium and long-term solutions (Hafner et al., 2020; Paramasua et al., 2019), none of the studies examined the efficacy from the government's perspective. As such, this study tries to ascertain the efficiency of present green financing schemes by addressing government agencies' perspectives on them.

Therefore, two main stakeholders, government agencies and PLCs, are at the centre of the study. This study intends to identify the value drivers, challenges, and impact of green financing schemes of ESG indicators such as the FTSE4Good index on PLC in Malaysia. The findings from the study would ascertain the effectiveness of the schemes and provide suggestions for future schemes to encourage other businesses' green financing support. The following questions guide the objectives of the study:

1. What are government agencies' perceptions of current green financing schemes?
2. What are Malaysia's public listed companies' value drivers, challenges and impact from adhering to ESG indicators such as the FTSE4Good index?
3. What are the possible recommendations to enhance existing green financing schemes and policy?

Following this section, two main themes are discussed in the literature review. After that, the research methodology is shared. Then, the results and discussions present the findings from interviews with stakeholders pertinent to the study. That section ends with a proposed conceptual framework that establishes the linkage between the stakeholders. Suggestions are proposed to enhance the current climate of green financing in Malaysia.

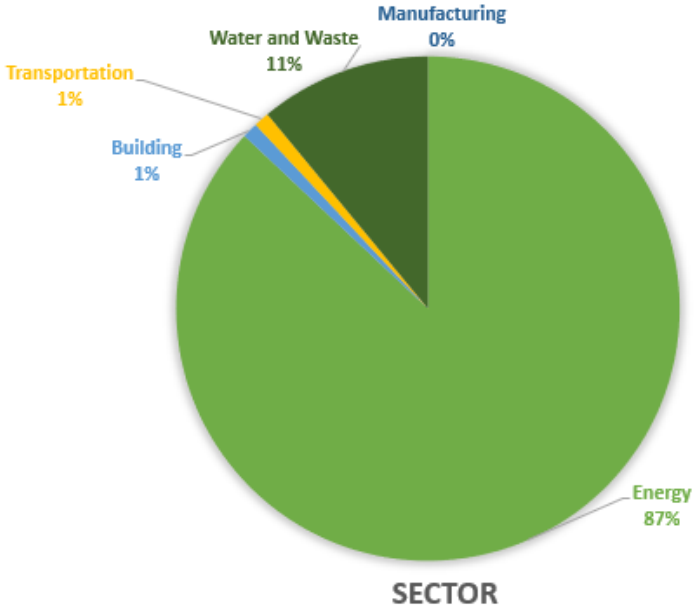

Figure 1. Percentage of sectors applied for the Green Technology Financing Scheme from 2010–2020.

2. Literature review

In 2007, the Intergovernmental Panel for Climate Change (IPCC) published a report that linked human activities to increasing global temperature. The effects of the increase in temperature on the inhabitants of Earth would be catastrophic. Thus, the European Investment Bank offered a green financing mechanism through green bonds worth €600 million to support climate projects. A year later, the World Bank issued USD 300 million of green bonds (OECD, 2015). Since then, green bonds have been gaining traction (Hafner et al., 2020; Liu et al., 2021; Tolliver et al., 2020; Van Veelen, 2021). Past research studied the relationship and impacts of green bonds with investors (Flammer, 2021; Gianfrate and Peri, 2019; Veys, 2010) and found benefits extending beyond environmental performance (Flammer, 2021) to financial capabilities, financial performance and protection against market volatility (Veys, 2010). Green bonds in the long term can lead to a low carbon economy (Liu et al., 2021; Owen et al., 2018) but require a standardised performance measurement (Hafner et al., 2020) and a lot of green growth projects, with divesting fossil energy (Glomsrød and Wei, 2018; Liu et al., 2021). Other green financing instruments include sukuk and equities (Central Bank of Malaysia, 2021).

Most researchers agree on the importance of government's role to push the green growth agenda further (Chua and Oh, 2011; Hafner et al., 2020; Paramasua et al., 2019). This is evident by a company's compliance to governments' policies (Fernando and Wah, 2017; Van Veelen, 2021; X. Zhang et al., 2021). However, governments' initiatives require proper strategy, detailed planning and defined measurements with regulatory framework, which many researchers found to be lacking (Chua and Oh, 2011; Dikau and Volz, 2021; Hafner et al., 2020; Paramasua et al., 2019; Scandurra et al., 2020; X. Zhang et al., 2021). In Malaysia, Paramasua et al. (2019) believed that the National Green

Technology Policy 2009 contained the necessary strategy and action plan for implementation. While many governments provide support in the early stages of a green business (Owen et al., 2018), it is important for policies to encourage upscaling green investments in a holistic and system approach way (Hafner et al., 2020). A green finance ecosystem would assist in the transition of a company as it grows while encouraging long-term horizon of green private investments (Owen et al., 2018). Countries with strong government influence can push a green financing agenda as is evident by the study by X. Zhang et al. (2021) on the improvement of ESG investing in China from 2010 to 2016.

Although many central banks agree that the agenda of climate policy should be pushed by the government, the census expects central banks to becoming a catalyst for greening the financial system in the country by promoting green financing and introducing sustainability measures (Dikau and Volz, 2021). For example, the Monetary Authority of Singapore promotes green financial technology through the Project Greenprint Tech platform, while the People's Bank of China promotes green financing through the Green Finance Information Management System (Fintechnews Singapore, 2021). In Malaysia, The Central Bank of Malaysia together with the Risk Management of Joint Committee on Climate Change (JC3) and World Wide Fund for Nature in Malaysia and Singapore encapsulated the Climate Change and Principle-based Taxonomy to support the transition to a low-carbon economy, support standardised classification and reporting of climate-related exposures at systemic levels and encourage financial institutions in Malaysia to design and structure green financial solutions to further accelerate green growth in the country (Central Bank of Malaysia, 2021).

With insufficient funding provided by governments, the Organisation for Economic Co-operation and Development (OECD, 2016) suggested for institutional and private investors to supplement green financing. However, they face challenges to support, such as restricted access to financial resources (Chua and Oh, 2011), high cost of raw materials, high capital expenditure (Chua and Oh, 2011; Musa and Chinniah, 2016), perceived high risk with expected low return, the inability to scale and late payback period (Amran et al., 2018; Yatim et al., 2017). Financial institutions that joined the Green Technology Financing Scheme established by the Malaysian government faced the risk of 'total exposure' whereby the aggregated exposures by Government Linked Company (GLC) and big corporations placed higher risks, limiting the ability to provide green financing for SMEs. Furthermore, most projects were time consuming, and in the case of default, financial institutions would have to bear the losses (Amran et al., 2018) Most applicants of green financing schemes offered had poor credit rating (Yatim et al., 2017) and limited knowledge related to the project and the environment (Amran et al., 2018; Chua and Oh, 2011; Musa and Chinniah, 2016; Yatim et al., 2017). Ahmad Ludin et al. (2013) suggested co-development partnerships with benefits of the project starting earlier and being financially attractive to investors who would like to minimise risk and cost from the project matching funding. Amran et al. (2018) suggested increasing the fund of green financing, formulating screening criteria, providing education for stakeholders involved and creating market readiness to encourage buyers on buying green products.

Eco-conscious companies have been disclosing their environmental performance in their financial report before the introduction of green financing (Abd. Rahman et al., 2009). It was first declared to control the narrative to the public of the company's environmental performance (Gatti et al., 2021), but over time, the companies embed sustainability values to improve their sustainability performance (Larrinaga-Gonzalez and Bebbington, 2001). Past studies in Singapore, Thailand, China and Malaysia

found the relationship between environmental disclosure and financial performance to be mixed results, including positive (Al-Tuwaijri et al., 2004; Gozali et al., 2002; X. Zhang et al., 2021), negative (Md Nor et al., 2016; Ahmad et al., 2003), or no relationship (Connelly and Limpaphayom, 2004; Cormier and Magnan, 2007; Yusoff et al., 2006). The differences in result are due to the location, the targeted industry, the time period of the studies (X. Zhang et al., 2021), the company's corporate culture or nature of the industry (Abdul Aziz et al., 2018). Despite the differences, the disclosures influenced the corporate culture, power relationships, and communication within the companies (Adams and McNicholas, 2007). Companies may also benefit from green financing through tax incentives such as investment tax allowance, exemption of duty and sales tax, and income tax exemption (Chua and Oh, 2011; Tolliver et al., 2020).

ESG indicators as well as companies' sustainable reporting ensure that companies are honest in their commitment to supporting green financing. For PLCs, competition between companies in Malaysia has grown beyond product quality and prices to companies' stances on social and environmental obligations (Yee et al., 2021), and this is reflected in investors shifting towards ESG investments. The impact of ESG on companies, however, has been lacking with ESG investing by Malaysian GLC found positive association of 'Governance' with the companies' efficiency but found no similar effect to the 'Environment' and 'Social' components (Kweh et al., 2017). Companies are also careful to avoid 'greenwashing' (Gatti et al., 2021).

'Green investors' are driven by their intrinsic behaviour on green financing (Gutsche and Ziegler, 2019; Hafner et al., 2020; Tolliver et al., 2020). Hafner et al. (2020) concluded the complex interaction between rational investors who are driven strongly by their personal attitude and their desire to invest in green investment, instead of price-signals in the market. Most of the investors are aware of environmental concerns and seek balance between perceived risk and return (Gutsche and Ziegler, 2019). However, investors should be wary of 'salience theory' or the added attention drawn to sustainability criteria before making investments, and the expectation that these investments are less risky (Gutsche and Ziegler, 2019). Challenges related to green financing from the perspective of investors include the lack of long-term climate change policy framework, the lack of knowledge on green investment infrastructure, the lack of suitable financial instruments, the lack of liquidity in the market and the lack of climate disclosures (Hafner et al., 2020).

The need for both the public and private resources to realise the climate objective requires an in depth look at each stakeholder (Tolliver et al., 2020). While the literature emphasised the necessity of the government developing clear, long-term plans with short, medium and long-term solutions (Hafner et al., 2020; Liu et al., 2021; Paramasua et al., 2019; Scandurra et al., 2020), none of the studies examined the efficacy from the government's perspective and to what extent is its effectiveness in reaching the climate objective of the country (Scandurra et al., 2020). Further, there is limited literature on the impact and effectiveness of green financing on companies, especially in lower income countries (Owen et al., 2018).

Past literature observed companies' behavioural influences on green financing (Hafner et al., 2020), and this study seeks to ascertain whether the influence holds true in Malaysia. With positive impact on sustainable reporting (Adams and McNicholas, 2007; Md Nor et al., 2016), perhaps there are positive impacts on the FTSE4Good index on PLC. Besides that, challenges on implementing schemes related to green financing were viewed from the perspectives of financial institutions (Amran

et al., 2018) and SME (Musa and Chinniah, 2016). Thus, this study seeks to fill the gap in the literature by addressing the perspectives of government agencies and public listed companies on the value drivers, challenges and impact of adhering to government schemes such as the GTFS and FTSE4Good Index.

3. Methods

This study espouses the stakeholder theory, where individual groups with different interests and motives come together to provide value for common benefits. However, the cooperation to achieve those benefits comes with its own set of challenges. Freeman et al. (2010) suggested each stakeholder comes to a decision not based on theoretical deduction but by their shaped experience in understanding the situation. Crilly (2019) suggests research through formal theory on understanding how stakeholders address the possible conflicting interactions that may arise. In this study, we develop a framework for green financing in Malaysia based on the different perspectives of stakeholders involved.

The qualitative research method utilising an interpretivist research paradigm is subscribed to for this study to have a deeper understanding of the motives behind the informants' ideas and perceptions. The perspective could be multi-faceted and is not restricted to one indicator. Hence, the results are linked between one stakeholder and the other. A semi-structured interview approach was used to elicit the viewpoints of government agencies and public listed companies on green financing schemes in Malaysia. The benefit of the semi-structured interview method allows the informants to provide in-depth information about their perception of the subject matter (Creswell, 2014) while addressing the values, impacts and challenges of the implemented schemes. The informants were selected based on criterion sampling to ensure that the informants' responses were related to the subject matter (Miles and Huberman, 2019). The informants were separated into government agencies directly involved in implementing the GTFS and FTSE4Good index, and the PLC in the FTSE4Good index in December 2020. For the latter, the FTSE4Good index determines that the PLC comply with the government agency, Bursa Malaysia. Of the seventy-five public listed companies in the index in December 2020, six companies were chosen based on the sectors listed in the National Green Technology Policy which are energy, building, water and waste management and transportation. The relationship between the government agencies and the companies is shown in Figure 2.

Over two months, thirty-three informants were invited for the interview. In the invitation for an interview, the study's aim and their expected contribution to the study were shared to encourage data credibility. Five informants agreed to the semi-structured interview session, while others declined or did not return the invitation. Due to country's restrictions of movements at the time of the interview, the sessions were conducted online using Google Meet at the informants' convenience. Different sets of semi-structured interview questions were administered to the two groups of informants regarding their perceptions of the schemes' implementation, their values and their obstacles. The session included an interview protocol and lasted from twenty minutes to an hour. The informants were asked to turn on their video for the validity of identification and as an additional observation method during the session for triangulation.

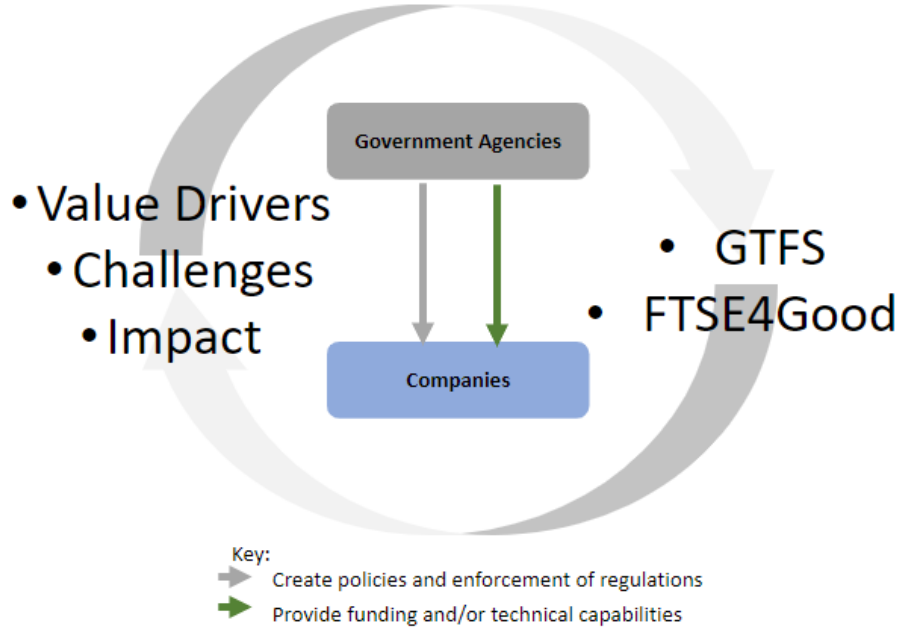

Figure 2. Conceptual Framework for government agencies and companies in Malaysia.

For government agencies, the questions were constructed in response to Musa and Chinniah's (2016) study on Malaysian SMEs' challenges of going green. This is consistent with the study's purpose of determining whether present green finance schemes adequately meet the issues faced by Malaysian businesses. Additionally, there are concerns about their suggestions for improvement and new strategies to increases the effectiveness. For PLC, the guided questions include previous research on companies' alignment with national aspirations (Hafner et al., 2020; Van Veelen, 2021), the importance of financial institutions and the capital market for green growth (Amran et al., 2018; Yatim et al., 2017), investor perception of ESG (Gutsche and Ziegler, 2019; The Economist, 2021), the impact of implementing a green approach in businesses (Fernando and Wah, 2017) and impacts of adhering to regulators (Md Nor et al., 2016). Other questions seek their perception on the FTSE4Good index, suggestions for improvement and vision for the company and country.

The interviews were audio-recorded at the consent of the informants. The informants were also guaranteed full personnel confidentiality, anonymity and given the option to refuse to answer or end the session at any time. A mixture of English and Malay was spoken during the interview and transcribed verbatim. Each of the informants was assigned a code that reflects their role of the government agency or public listed company, their role in their respective organisation, gender and their assigned number. This is to protect the anonymity of the informants. In addition to that, notes were taken during the interviews for additional references and notes comparison, besides providing dependability to the data.

Of the five informants, three were government agencies, and two were from public listed companies in Malaysia. According to Saunders et al. (2016), the sample size for in-depth interviews is suggested to be between five to twenty-five informants, while Charmaz (2006) suggests stopping collecting data when the themes reached a point of saturation. Based on the transcribed interviews,

coding techniques and thematic analysis were applied. The sessions of the interviews were compared to a point of saturation and compared with related past literature for triangulation.

Table 1. Informants' demographic profile.

Code	Gender	Designation	Type
RHF1	Female	Head of Division	Department of Environment
RHF2	Female	Head of Division	Bursa Malaysia
RDM3	Male	Director	Malaysian Green Technology and Climate Change Centre
CHF1	Female	Head of Division	Public listed company
CHM2	Male	Head of Division	Public listed company

4. Results and discussion

The study discovered that problems associated with complying with the FTSE4Good index from the perspective of PLC include additional funding support, knowledge gaps and inconsistent ESG performance. Although government agencies promote green financing through the GTFS and complementary initiatives such as the MyHijau Mark and tax incentives, the funding is limited. To support the limitation, the financial sector offer its own green financing. On the other spectrum, there are still knowledge gaps in the companies that applied which resulted in inconsistent ESG performance. The success for green growth in the company through green financing begins with the leader of the company. Besides providing green financing, the government agencies are expected to fill the knowledge gaps and inconsistent ESG performance by providing support to the companies. This begins with a strong policy objective and clear metrics.

Past literature related to the PLC studied the association of incorporating ESG or sustainable practices with financial performance. This study sought to assess the motivations behind incorporating those practices and whether it lies beyond profitability. Findings found the main reason for PLC to incorporate ESG was in fact compliance with the regulator, Bursa Malaysia. Besides that, adhering to the ESG indicator allows the opportunity to be invested by foreign investments, where the awareness of ESG is greater than in Malaysia. Lastly, the motivation of adhering to the ESG indicator is positive public perception as clients and consumers become eco-conscious, choosing companies that appeal to their principles.

The findings of the value drivers, impact and challenges of public listed companies and government agencies' perspective on current schemes to support green financing are shown as a framework in Figure 3. This could be guiding feedback for government agencies to enhance existing schemes.

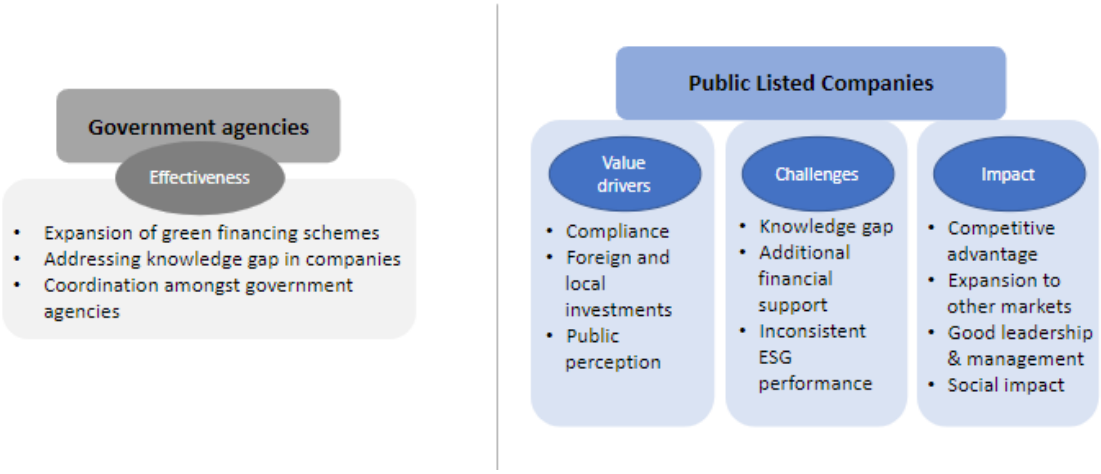

Figure 3. The framework for green financing schemes' effectiveness from stakeholders' perspective.

The results are divided into three sections in this chapter. The first section discusses the perspectives of government agencies on present green financing schemes. Second, the value drivers, challenges and impact of the FTSE4Good index from PLC perspective are described. Finally, a policy enhancement is suggested.

SECTION 1 EFFECTIVENESS OF GREEN FINANCING SCHEMES FROM THE PERSPECTIVE OF GOVERNMENT AGENCIES

Based on interviews with the government agencies, key themes surrounding the level of effectiveness of existing schemes were shared.

4.1. Expansion of green financing schemes

The GTFS was modelled after the success of the Energy Efficiency Projects Lending Scheme (EEPLS). According to the GTFS report from 2010 to 2020, 87 per cent of applications came from the energy sector, while the manufacturing sector filed no application as the GTFS is project-based and does not approve capital expenditures such as new equipment that the manufacturing sector might require. Meanwhile, the transportation sector accounting for 1 per cent is reasoned by the existing infrastructure that the government embarks on.

Since the energy sector was already established in the country in the early 2000s, it was easier for financial institutions to approve the financing of such projects compared to other sectors. The explanation of the higher approved applications of the energy sector is given below:

"*For renewable energy, for example like solar, biomass, biogas, mini hydro, we already have secure payment to the banks. For example, the government introduced the feed-in-tariff so the bank is confident to give their funding to this renewable energy project*." -RDM3

The financial institutions are also sceptical of the project financing returns and risks involved in the project. This supports the findings by Amran et al. (2018) on financial institutions' hesitancy to approve certain projects due to the perceived risk and expected returns. Nevertheless, with more than

a decade of the scheme being introduced, government agencies are confident with the banks' capabilities in managing green projects.

The informant realises that the scheme could not continue indefinitely, as it is not sustainable and should be supported by the industry holistically, likewise to the need for holistic solutions as mentioned in the study by Hafner et al. (2020) for the United Kingdom. The informant mentioned:

"*The bank can introduce their own green financing scheme, because at the moment the Green Technology Financing Scheme we have is subsidised from the government*." -RDM3

Therefore, the government agency implements additional programmes such as the MyHijau Mark in 2012, Government Green Procurement in 2013 and the Green Investment Tax Incentives in 2018 in accordance with the Green Technology Masterplan 2017 to 2030. The Government Green Procurement programme serves as a catalyst for green technology adoption in Malaysia (Yatim et al., 2017) and extends to State Governments and local districts in 2020. This ensures secured demand from the local market, thus providing confidence to the green suppliers in producing more green products and services.

This programme could tie with the MyHijau Mark that supports the supply side of green producers and servicers through certification, providing confidence to the more eco-conscious users. There are two objectives to the programme: first, assisting local companies to produce green products and green services; second, to encourage local industries to implement green practices in their premises.

The Green Investment Tax Incentives could reduce the reliance on government subsidies to encourage green economic growth in support of the scheme. These incentives are separated into three categories. The first is the Green Investment Tax Allowance for purchasing assets, followed by Green Investment Tax Allowance for projects, and lastly the Green Income Tax Exemption for suppliers and service providers with the MyHijau mark.

The informant believed that the support from the government by purchasing green products and services, labelling green certifications and providing tax allowances could further encourage the green financing industry to support green businesses by developing its scheme and without government subsidisation.

"*When they have the secure market, I think it is easy for them to apply financing from the bank. That's why our strategy is to improve the GTFS, so we can promote for both the supply and demand side*." -RDM3

4.2. Addressing the knowledge gap in companies

The government sponsored schemes have seen increase in the number of participating businesses with over 655 projects had applied during the first and second cohorts. For the FTSE4Good index, the number had climbed from nine eligible companies in 2014 to seventy-five in 2020. However, the agencies acknowledged that there are still knowledge gaps in terms of the technology, operations and ESG impacts. Findings by Musa and Chinniah (2016) support the knowledge gap of SMEs about environmental management and its concept. As a result, the companies require consistent guidance for compliance with the index. The government agencies share the ongoing efforts:

"...provide this coaching to the public listed companies. We provide seminars, we do workshops...and we also have to do face-to-face ..." -RHF2

"*That's why after we introduced the GTFS, so we organise a lot of promotion and awareness...We have specific training for the banks, for the green technology project*" -RDM3

One study prioritises the need for public spending on education, research and development. Besides collaborating with universities, good communication between government agencies and the industry is necessary to support green growth (D. Zhang et al. 2021).

4.3 Coordination amongst government agencies

On renewable energy and energy management initiatives, the MGTC collaborates with the Energy Commission and the Sustainable Energy Development Authority, while on tax allowances, MGTC coordinates with the Inland Revenue Board and the Malaysian Investment Development Authority. Despite the coordination, informants expressed dissatisfaction on the degree of coordination, especially on the different definitions of 'green' by each government agency. This results in the mismatch of agencies' objectives and tasks for coordination, and thus hampering the success of the collaboration.

"The definition of green is also diverse in organisation in Malaysia. So how are we going to achieve this when this information is all scattered. It's not aligned, and so that's one of the challenges." -RHF2

"...the coordination between the parties between different ministries must be enhanced...the initiatives must be strengthened so that many people, many companies or industries would be willing to join this kind of initiative by the Government." -RHF1

Past literature discussed the importance of having clear policies with actionable activities (Hafner et al., 2020) but did not raise the issue of coordination, which is necessary in the context of Malaysia's green financing scene. To improve the coordination between the government agencies, the agencies must understand the enacted policy, and that each agency has its own specific goals to achieve the objective. One suggestion is for the policy to be clear and concise that is understandable by everyone impacted.

To improve the coordination effort, insights from industry players encourages other players in to adopt green practices in their businesses.

"...but the coordination between the industries, I think there must be someone from the industry who have a say in the community because they are quite familiar with the industry experience." -RHF1

SECTION 2 VALUE DRIVERS, CHALLENGES AND IMPACT OF THE FTSE4GOOD INDEX FROM THE PERSPECTIVE OF PUBLIC LISTED COMPANIES

4.4. Value drivers of adhering to ESG indicator, FTSE4Good

4.4.1. Compliance

The first driver of adhering to the scheme is complying with the government agency. Although most government agencies adopt the command-and-control approach, environmental disclosure and sustainability reporting are influenced by the company's management team (Adams and McNicholas, 2007; Kweh et al., 2017).

From the perspective of PLC, informants believed that those who implemented some form of sustainability into their operations prior to the regulation of ESG indicators in 2014 and environmental

disclosures in 2016 outperformed their industry peers. Other PLC faced challenges and were unable to maintain constituency in the index.

There was not much resistance when the FTSE4Good index was introduced in 2014. This is because the PLC were already aware of the benefits and the positive impact it brings to the PLC. The informants knew the importance of the scheme to improve green capital flows as shared:

"We're even considering looking at green funding to find sustainable projects." -CHF1

"Green growth investment, I think it's still new in Malaysia…currently in LSS4 when you actually being listed out as one of the companies who will actually get projects the banks would come and hunt for you. So, this is something good that I can see. It's moving forward." -CHM2

4.4.2. Foreign and local investments

One of the driving forces of adherence to the scheme is the opportunity for global interest and investment as shared by one informant:

"When you're in the FTSE4Good, the chances of you being invested by the global funds out there are higher. That will drive your share price up and that would create capital gain...you have access to global funds if you're in the index." -CHF1

"...in order to tap onto global funds, you need to have characteristics of ESG, or sustainability practices adopted in your company because foreign funds are the ones who actually look at these kinds of things." -CHM2

While the PLCs realise the benefit of foreign interest and investment, in most instances, the PLC are subjected to additional measurements from the foreign investors for eligibility, despite being one of the constituents of the FTSE4Good and report of sustainability in their financial disclosures.

"...when I meet up with investors foreign funds, the first thing that they'll ask is whether our company adopt ESG practices... we had to fill out these questionnaires and these are actually ESG questionnaires, basically a declaration that we adopt these practices, companywide." -CHF1

Not only that, local institutional funds such as Malaysia's Retirement Fund (KWAP) and Employee Provident Fund (EPF) are also looking into the ESG index for their investments. In its statement, the local institutional fund, Employee Provident Fund announced its commitment to the United Nation's Principle of Responsible Investment by investing in ESG practising companies (Employees Provident Fund, 2019).

4.4.3. Public perception

Besides gaining additional funding for the company, public listed companies adhere to the scheme to improve public perception as shared:

"...provide sustainability products in any way we can to make our stakeholders happy, make our investors happy, to make our buyers happy." -CHF1

"...the community over there actually made noise.... we don't want to have noise pollution and other pollution related to the business." -CHM2

Improving or maintaining positive public perception is in relation to the Stakeholder theory that the adherence to the FTSE4Good would lead to better performance and continuation (Abdul Aziz et

al., 2018). Besides, Adams and McNicholas (2007) found that stakeholder engagement is a powerful drive towards organisational change and including sustainability plans in their businesses.

4.5. Challenges of adhering to ESG indicator, FTSE4Good

4.5.1. Knowledge gap

PLCs are updated on the regulations required by Bursa Malaysia for compliance, but there is still room for knowledge improvements for the company. For example, the informants were unaware about the Paris Climate Agreement ratified in 2016 and Malaysia's commitment to it. However, they understood the importance of having knowledgeable Board members to improve the company's ESG performance.

"...the Board needs to be diversified in terms of their knowledge, in terms of their experience." -CHM2

"...a number of best practices that public listed companies should adopt, and these best practices are all related to sustainability efforts in terms of creating awareness and sustainability at the board level, at the organisation level." -CHF1

4.5.2. Additional financial support

Although the PLC have shareholders that invest in their company, some companies allow additional funding and apply to financial schemes provided by financial institutions and the government. Amran et al. (2018) studied the challenges and impact from the schemes from the perspective of financial institutions with perceived risks as one of its limitations. One informant shared:

"...previously the banks, the financial institutions are not familiar with this. And when we actually go to them and require financing, they will actually put a high interest rate because they are not comfortable with this." -CHM2

This is also supportive of the findings by Yatim et al. (2017) on how one of the financing gaps and challenges is the real and perceived risks of funding such projects. In some instances, there is a mismatch in the limit allowed for financing under the GTFS, which increases the risk to the financial institution (Amran et al., 2018). Other barriers to success include the lack of knowledge by applicants in green technology, the lack of the applicants' track records and the projects' viability (Amran et al., 2018). Elsewhere in the United Kingdom, the barrier of the financial institutions is similar such as lack of knowledge, perceptions that returns on green investments are too low and requiring high initial capital investment (Hafner et al., 2020).

4.5.3. Inconsistent ESG performance

As the FTSE4Good is reviewed semi-annually, several companies are dropped from the index stemming from several reasons. This provides a drive for the companies to adhere to the standards and act as a 'check-and-balance' as explained by a government agency:

"They have to maintain because there are companies which are excluded through times because there are controversies of the companies. If you want more investors, you have to retain to be in the index." -RHF2

Most of the companies scored low for the environment and highest for governance on the FTSE4Good. This is explained by the Government agency:

"Once you pass a certain threshold, and pass a certain rating, then you are eligible to be in the index. In order to achieve the rating, we go by the basis of an aggregated average" -RHF2

Despite the study conducted from 2006 to 2012, Kweh et al. (2017) found similar accounts of high scores in Governance of ESG reporting by Government-linked companies in Malaysia.

4.6. Positive impact of adhering to ESG indicator, FTSE4Good

4.6.1. Competitive advantage

The overall impact of green financing schemes and programmes for SMEs and PLC is positive. It allows the companies to have a competitive advantage over their peers in the industry. This is supportive of the research by Fernando and Wah (2017) that green technology companies that implement an eco-innovative approach in their companies have a competitive advantage and are more sustainable in the long run. These companies adapt their internal strategy to achieve the FTSE4Good index. The impact of adhering to the FTSE4Good is shared:

"From the business side and from the corporate side we are only looking towards achieving what is being outlined in the ESG model. We have our own policy internally for this. For example, in terms of governance, in terms of operational, in terms of financial. That's where I think it's more strategic for the corporate to actually comply to the ESG internally." -CHM2

The strategies implemented by the PLC include hiring staff with sustainability backgrounds and experience. This is supportive of past research on the positive sustainable impact to the companies from green hiring (Martins et al., 2021). Furthermore, the change required in the organisational approach in embedding sustainability is because of the company's desire to improve sustainability performance (Adams and McNicholas, 2007). The increase in PLC on the FTSE4Good over the years since its introduction in 2014 allows new companies to be part of the index and for those who are already in the index continue to improve their ESG practices.

There are mixed results on the link between environmental disclosures and companies' financial performance (Amran et al., 2018; Md Nor et al., 2016; Othman et al., 2011). The informants did not share the improved financial performance but shared the increase in foreign shares.

"Back then our foreign shareholding percentage was 20 percent which is actually very high. Very high for a local company. So, these companies, they are the ones who place emphasis on ESG drive products or ESG's best practices." -CHF1

4.6.2. Expansion to other markets

The policy and schemes by government agencies act as a catalyst for PLCs to expand their businesses globally. This indicates the indirect positive impact of the existing policy and schemes, and

is a precursor for PLCs to extend their own green financing schemes. Referring to Owen et al. (2018) this is supportive of a green finance ecosystem which could lead to a low-carbon economy.

"We're even considering looking at green funding…if these projects are not, does not fall within the ambit of the sustainability features that we have in our ESG framework, then you will not be able to enjoy the funds under this so-called green funding." -CHF1

"Trying to expand our footprint into the region countries such as Indonesia by actually sharing our expertise and also our knowledge of managing the State water operator." -CHM2

4.6.3. Good leadership and management

The informants emphasise the critical nature of effective leadership and management in attaining the internal strategies. By instilling values in leadership and management, the cause gains legitimacy and fosters trust among other stakeholders, including investors and the general public. As such, improving a company's green performance requires time and effort. This then establishes the schemes' effectiveness. Additionally, it lends credibility to the company if it is recognised for its ESG achievements, such as compliance with international standards. According to local literature reviews on green financing, this critical component of success is missing. The informants disclose the following:

"The Board needs to be diversified in terms of their knowledge, in terms of their experience. We have that in our Board. We have people who has the experience in terms of legal, we have people in terms of energy and people who are experience." -CHM2

"I am lucky in that sense I guess because our Chief Executive Officer is very passionate about ESG and sustainability, and he makes sure that it has to be communicated to all levels, the sustainability and efforts and whatnot are now being channelled through the entire organisation because it has to start from the top." -CHF1

4.6.4. Social impact

PLCs who are constituents of the FTSE4Good bring positive social impact to the public. Including green initiatives in the company brings positive environmental impact, and indirectly better society living.

"It's so that the public can see how important it is to care for the area and not to pollute." -CHM2

SECTION 3 PROPOSED POLICY ENHANCEMENT

4.7. Proposed framework for policy enhancement

4.7.1. Policy gap from government agency and PLC perspectives

Based on the interviews, one significant topic emerged that transcends the scope of the study, which is the disparity in green growth progress between the PLC and the SME. Although the SME were not selected as part of the interview, the informants could not avoid underlining the critical role of SME in promoting green financing. While PLC specific challenges such as knowledge gaps, additional financial assistance and inconsistent ESG performance have been addressed through

existing initiatives and efforts, the disparity in performance between the PLC and the SME has not been addressed to enable green growth by all types of businesses.

All informants were aware of the importance of financing towards a greener approach. Given that the PLCs have access to more funds than the SME to support green growth brings about the stark difference between the two, where the former view a greener approach as part of growth which requires financing, and the SMEs do not have the capabilities to do so (Musa and Chinniah, 2016). Even with various forms of government financial support to support green growth in SME, the underlying problem is the necessary instinct to change operations by the leaders of the SME. As explained:

"When it comes to companies which don't really care, because by the end of the day, it's just dollars and cents" -CHF1

"It has to start from the self and being in the company, it has to start top-down. You cannot get the bottom level to practice, but the top is not so…you have to walk-the-talk." -CHM2

In fact, the PLC takes it upon itself to encourage SMEs to adopt a greener approach in their businesses. This motive allows the PLC to retain its constituency in the FTSE4Good index. It improves supply chain management and supports a circular economy approach. The collaboration assists SMEs in its hindrance of going green such as inflated cost of raw materials, the high initial cost of investment, and shortage of skilled labour (Musa and Chinniah, 2016). It also supports the eco-innovation drivers presented by Fernando and Wah (2017) on supply chain management to support environmental performance. The collaboration indicates the level of regulations the PLC is subjected to, but not for the SME.

"We have control over them in that manner. Those are the contractors that we work with, but what about other private companies or other Limited Liability Partnership? Who governs them? Who ensures that they actually comply?" -CHF1

"We become a central agency by the government to provide and procure for suppliers. It's faster and more trustworthy." -CHM2

4.7.2. Recommendation for policy enhancement

While the PLCs are subjected to comply to Bursa Malaysia for investments and improved public perception, the SMEs are not subjected to the same scrutiny. Seth et al. (2018) suggest that given its scale, the SME's impact on the environment is limited, but collectively they prove significant. With PLCs already taking the helm by governing SMEs in their projects and operations, a definitive authority can apply the same. Therefore, it is suggested that a separate governing body regulates the SME in terms of its ESG performance, like the role of Bursa Malaysia on PLC.

The SME Corporation Malaysia under the Ministry of Entrepreneur Development and Cooperatives is the central coordinating agency that provides infrastructure support, financial assistance, advisory services, market access and other programmes (SME Corp Malaysia, 2020). With the agency having access to all registered corporations in Malaysia, the agency is most suitable for effective ESG tracking performance for SMEs. Enhancing SME Corporation's function as a regulatory body and ability to enforce greener business operations allow for more achievable objectives of the NGTP. Subsequently, companies would source better materials, production, and green financing. While there are schemes targeted to SME such as the National Budget, government subsidies, micro-

lending and peer-to-peer lending, the demand for green financing by all types of businesses will likely result in increased green finance, thereby resolving the limited green financing (Chua and Oh, 2011; Fernando and Wah, 2017; Hafner et al., 2020; Md Nor et al., 2016; Owen et al., 2018; Van Veelen, 2021; Yatim et al., 2017).

Adhering to the regulating body, the companies along the supply chain would lead to a circular economy irrespective of the type of company. Benefits of the circular economy include minimising pollution and waste, optimising operational cost, maximising resource productivity, and enhancing ESG performance (Patil et al., 2021). The latest Twelfth Malaysia Plan included circular economy as its game-changer. To achieve a circular economy, the plan includes involving all stakeholders; integrating ESG principles; enhancing policies, regulations, green financing and financial instruments; encouraging businesses; and increasing partnerships between the government, researchers and companies (Prime Minister's Office, 2021). The introduction of the MyHijau Mark and the tax incentives by MGTC are great steps in encouraging companies toward a circular economy. The programmes would also support the suggested regulation by SME Corporation for the SME's seamless transition.

Following the circular economy concept would then lead to achieving the Sustainable Development Goal (SDG) 9: Industry, innovation and infrastructure. According to the United Nations, the goal is "to build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation." The importance of achieving this goal by 2030 is for economic inclusiveness for every part of the community through accessible infrastructure and forward innovation (United Nation, 2021). Including SMEs in the conversation of ESG principles would intensify reaching SDG by 2030.

Other than that, it is suggested that in creating new policies, schemes or initiatives at the Federal Government level, the language should be simplified and understandable by all levels of the population. The jargon used in the policy must be standardised throughout the Ministries and government agencies to encourage unified coordination amongst them and clearer understanding of the policy, thus reducing the knowledge gap in PLCs and between the PLC and SME. With a clearer definition, policy and subsequent programmes are easier to construct. Clear metrics are given to each relevant government agency, and the Federal Government such as the Prime Minister's Office could be the centre of governance in ensuring the metrics are achieved. Government agencies could coordinate and collaborate to streamline efforts. When relevant, the metrics are cascaded down to regulatory bodies, financing bodies and other government-related agencies including Bursa Malaysia that govern PLC and the suggested SME Corporation for governing ESG on SME.

For the complete effectiveness of the policy, it must start from the Federal Government. The Ministry should embody the change and lead by example. The Government Green Procurement acts as a catalyst to encourage green purchasing. Ministers and government agencies too could apply sustainable actions in their affairs. Mainstreaming the idea would shift the country's sentiments towards sustainable development and green growth. Figure 4 shows the suggestions in this section.

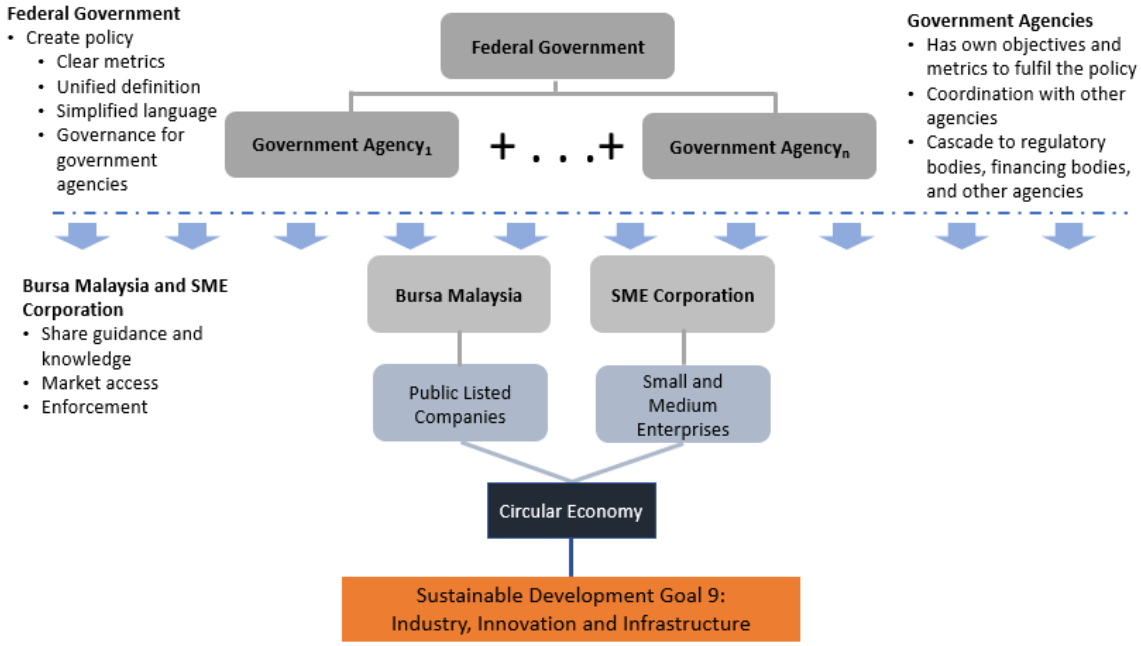

Figure 4. Suggested framework for green financing policy enhancement to achieve circular economy and SDG.

5. Conclusions

This study explores the level of green financing schemes' effectiveness from government agencies such as the Green Technology Financing Scheme and the FTSE4Good index. It also explored the value drivers, challenges and impact of the ESG indicator, FTSE4Good index from the perspective of PLC. Semi-structured interviews with the government agencies and the PLC provided insights on the current progress, motivation to utilise the programme and challenges faced from the schemes' implementation.

It was found that challenges of implementing the FTSE4Good index include knowledge gaps, financial support and inconsistent ESG performance. Meanwhile, the leading value driver to adhere to the FTSE4Good index is the requirement by Bursa Malaysia. PLCs are compelled to improve the manner of operations. This extends to the cooperation with other stakeholders along the supply chain and the communication with investors, government agencies and the general public. In doing so, PLCs are able to compete globally by enticing foreign investors that are more attuned to ESG indicators. Not only that, PLCs are able to attract local institutional funds that adopt the United Nations' Principles of Responsible Investment in their selection of local investments. Besides that, the adherence to the FTSE4Good improved public perception of the PLC.

By taking a more environmentally friendly approach in their business, PLCs gain a competitive advantage in their industry, promote effective leadership and management, expand into regional and global markets, and have a beneficial social impact. This begins with a solid governmental policy and cooperation among the various ministries and agencies. Government agencies could implement the policy enhancement suggestions provided in this study for a complete green growth financing in Malaysia regardless of the size of the company. The GTFS alone is insufficient to sustain green

financing. Other schemes such as green tax incentives and clean development mechanisms are encouraged. Private institutions are also encouraged to support by providing green private equity, green bonds and syndicated project financing. In terms of governance, it is proposed that a self-regulatory organisation for SMEs be established to facilitate green adoption along the supply chain in support of the circular economy and Malaysia's commitment to various international agreements.

The topic of ESG and the FTSE4Good indicator per se is growing in the country. Researchers are encouraged to study the topic further for improvements of green financing in Malaysia. This study did not assess the level of effectiveness from the financial institutions' perspective and from the SME. The findings of this study suggest a prerequisite for continued enhancement of the initiatives implemented by the government agencies such as the regulating body for SMEs. The authors welcome a pilot study using the Confirmatory Factory Analysis to test the indicators and a full pledge questionnaire survey based on that analysis. Future study could study in depth the inconsistent ESG performances by PLC and its effects from the drop of FTSE4Good index.

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Conflict of interest

The authors declare no conflict of interest.

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