

Challenges Faced by Malaysian MSMEs to Adopt ESG Standards

Ong Joo Hock^{1*}, Ali Khatibi², and Zunirah Binti Mohd Talib³
^{1*} Malaysian Association of Public Advocacy for Nature (MAPAN)
47500 Bandar Sunway, Selangor
^{2,3} Management and Science University
40100 Shah Alam, Selangor
Emails: ben.ong123@gmail.com, esg.mapan@gmail.com^{1*}

ARTICLE INFO	ABSTRACT
Received: 15 Nov 2024 Revised: 24 Dec 2024 Accepted: 15 Jan 2025	<p>This research dissected the eleven challenges faced by Malaysian micro, small and medium enterprises (MSMEs) to adopt environmental, social and governance (ESG) standards. Highlighting the economic prominence of Malaysian MSMEs that constituted 39.1% of the gross domestic product of Malaysia in 2023, the research pursued the gap on the absence of a cost effective and time efficient ESG pathway. Enabling MSMEs to continue advancing global competitiveness of large corporations while boosting Malaysia’s low carbon transition is the research objective. The research deployed a qualitative online structured interview approach supplemented with document review and triangulation to unveil the three dominant challenges of regulations and policies, finance, and supply chain. Totally, the research selected 29 ESG knowledgeable interviewees. In the order of relative importance, the challenges exploited encompassed regulations and policies, green finance, green supply chain, access to ESG information and technology, availability of ESG facilitators, government aids and grants, resources within MSMEs, education and awareness, ethical products market demand, mindset of MSMEs, and public-private partnership. Using institutional theory to elucidate how coercive, mimetic, and normative pressures influenced ESG standards adoption, the research discovered the Regulations, Finance and Supply Chains (RFSC) novelty pathway. Pivoting on the National Sustainability Reporting Framework and leveraging on Greening Value Chain and Low Carbon Transition Facility, the research proposed the navigation of the RFSC novelty pathway to overcome the dominant ESG challenges faced by Malaysian MSMEs, emphasizing the bridging roles of non-governmental organizations and decarbonization potential of Bursa Carbon Exchange, along the way.</p> <p>Keywords: Bursa Carbon Exchange (BCX), Environmental, social and governance (ESG), Greening Value Chain (GVC), Low Carbon Transition Facility (LCTF), Micro,</p>

1.0 INTRODUCTION

The objective of this research is to critically analyse the dominant challenges faced by Malaysian micro, small and medium enterprises (MSMEs) to adopt environmental, social and governance (ESG) standards and propose cost effective and time efficient measures to overcome them so that smaller businesses can participate in the just transition promoted by the government in its transition into low carbon economy. The research is a national priority because vibrant growth of MSMEs will benefit Malaysia both in achieving its climate agenda and improving the competitiveness of local conglomerates operating in the international scene. Attracting foreign direct investment is increasingly ESG driven and being an export nation, Malaysia must nurture a sizeable population of resilient MSMEs.

Extensive research with explicit MSMEs ESG pathway was indeed understudied. Established strategy to address the multifarious challenges faced by Malaysian MSMEs overwhelmed by the technicalities of ESG was incoherent. Complying with global sustainability principles (Ahmadi et al., 2024), a prerequisite for all major international trading (Markopoulos et al., 2021) was exacerbated with the problems in low visibility of cheap and convenient green finance facilities (Akomea et al., 2022), and inadequate understanding of the supply chains complexity in transparent accounting of carbon emissions (Truant et al., 2024).

1.1 Background of ESG

ESG is a business survival issue for Malaysian MSMEs that Malaysian businesses required urgent government intervention not to lose the RM292 billion SMEs revenue and a potential loss of US\$12 trillion worth of future market opportunities projected by the Sustainable Finance Institute Asia 2022 (Kamaruddin, 2024). However, since there was no law that compel Malaysian MSMEs to comply with global ESG standards, ESG adoption remained voluntary (Ratnasingam et al., 2023).

SME Corporation Malaysia defines the three pillars of ESG as (i) environmental pillar: conservation, stewardship, climate commitment and community; (ii) social pillar: workforce and consumer relations; (iii) governance pillar of integrity, compliance, and strategic oversight (SME Corporation Malaysia, 2023). Global ESG standards require accounting of scopes 1 and 2 direct carbon emission, and scope 3 indirect emissions in respect of yearly sustainability disclosure (Bose, 2020).

Originally, ESG was a generic term used in capital markets by investors to assess corporate behaviours regarding future financial performance (Gholami et al., 2022). Increasingly, employees, customers, suppliers, and governments expect businesses to take mitigation measures and report their social responsibility and governance performance due to green consciousness (Boffo, et al., 2020). Although most scholars agreed that social equality and corporate governance enhance economic performance, the consensus was incoherent as to relationship between environment quality and economic development in consistent with the triple bottom line of planet, people, and profit (Hassani & Bahini, 2022).

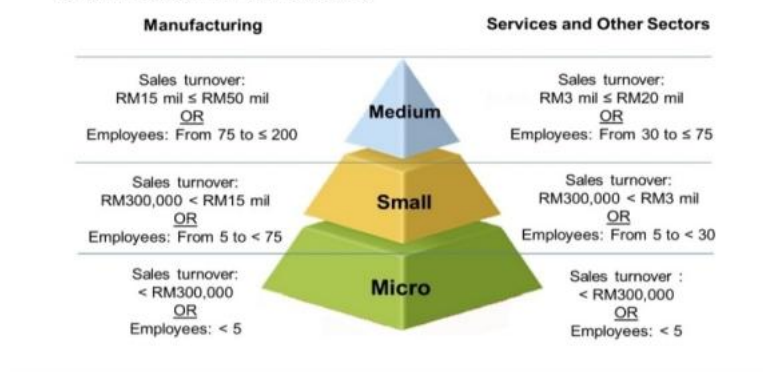
1.2 Malaysian MSMEs

Malaysia is a developing country with MSMEs contributing substantively to its economic growth and employment (Khalid, 2023). Malaysian government expects MSMEs to continue becoming the growth engine and drive the country's economy (Ministry of Economy, 2023b). For 2023, MSMEs comprised 39.1% of gross domestic product (RM613.1 billion) and 48.5% (7.86 million workers) of total workforce in Malaysia that export RM152.2 billion of goods and services (DOSM, 2024). In 2023, there were 1,101,725 MSMEs firms (96.9% of total establishments in Malaysia), 83.9% of them (924,170 firms) in services sector, with 69.7% (767,421 firms) classified as micro-enterprises (Department of Statistics, 2023).

Figure 1 detailed the definition of MSMEs as categorized by the National Entrepreneur Development and MSME Council, basing on sales turnover and employees' numbers, distinguishing between manufacturing, and services and other sectors. For manufacturing, all the three categories of medium, small, and micro enterprises have higher amount of sales turnover and employees compared to services and other sectors. But, for micro enterprises, both manufacturing and services and other sectors are the same with sales turnover at below RM300,000 and employees at below 5 (DOSM, 2024).

Figure 1

Detailed definition of category, namely micro, small and medium is as follows:



1.3 ESG Landscape in Malaysia

Bursa Malaysia (stock exchange of Malaysia) is the regulator of public listed companies (PLCs) in Malaysia that promotes the adoption of ESG standards to protect the investing public. Bursa's measurement of non-financial disclosure of ESG is based on 120 environmental, social and governance parameters set by Bloomberg to relate sustainability practices with financial performance (FTSE Russell, 2024). FTSE4Good Index by Bursa Malaysia for listed companies aside, government encourages MSMEs to effectuate greener operations (Adenan, 2024). By way of Listing Requirement amendment, Bursa demanded from public listed companies (PLCs) sustainability disclosure on material economic, environmental, and social risk and opportunities (Bursa Sustain, 2025). Bursa's Sustainability Reporting Guide is meant to achieve Malaysia's objectives of decarbonization (Bursa Malaysia, 2022). Bursa also launched the trading of carbon credit on the Shariah-compliant Bursa Carbon Exchange (BCX) (Bursa Carbon Exchange, 2024).

Additionally, the Advisory Committee on Sustainability Reporting (ACSR) requires PLCs and non-listed companies with annual revenue of RM2 billion and above to comply with NSRF. Developed by the ACSR, NSRF is to unify Malaysian ESG reporting (Zainul, 2024). For the NSRF to acquire necessary enforcement power, the ACSR has proposed amendment of the Companies Act 2016 to include the requirement for audit of non-financial statements (Securities Commission Malaysia, 2024). To ensure consistent, comparable, and reliable sustainability information to enhance Malaysia's competitiveness and attractiveness to investors, implementation of the NSRF will be through a phased and developmental approach as shown in Table 1 where PACE (Policy, Assumptions, Calculators, and Education) will assist companies with tools, educational resources, and capacity-building programs by ACSR (Advisory Committee on Sustainability Reporting (ACSR), 2024).

Table 1: NSRF Phased Complying Timeline (Advisory Committee on Sustainability Reporting (ACSR), 2024)

Group of Entities	Annual Reporting Periods (On or After)	Full Adoption By
Group 1: Main Market listed issuers with market capitalization of RM2 billion and above	1 January 2025	2027
Group 2: Main Market listed issuers (other than listed issuers in Group 1)	1 January 2026	2028
Group 3: ACE Market* listed issuers and non-listed companies with annual revenue of RM2 billion and above	1 January 2027	2030

2.0 THEORETICAL BACKGROUND

Taking cognizance of the arduous challenges faced by Malaysian to adopt ESG, the research used institutional theory to lay the theoretical framework and explain how the three institutional pressures influenced the 11 challenges identified through the extensive literature review conducted.

2.1 Institutional Theory

Institutional theory presupposes that firms adopt ESG standards beyond pure financial reasons and respond to coercive, normative, and mimetic pressures existed in institutional settings (DiMaggio & Powell, 1983; Scott, 1995). While coercive pressures in the form of government regulations and imposition push firms to comply with legal and policy requirements (Zhu & Sarkis, 2007), mimetic pressures encourage firms to emulate industry leaders since ESG adoption enhances brand reputation and market competitiveness (Zhu & Sarkis, 2007). At the same time, normative pressures, embodying stakeholder aspirations and expectations, lead firms to align with if not surpassing industry standards (Hill, 1997). Cultivating a mindset that acknowledges the intrinsic value of championing ESG best practices from industry leaders is crucial, not just for competitiveness enhancement but also to orientate with globally recognized ethical standards (Zhu & Sarkis, 2007).

Reactively, MSMEs adopted ESG practices submitting either to regulations or customer demands (Adebanjo et al., 2013; Tsoi, 2010). However, ethical leadership and stewardship conduct emerge when firms internalize ESG integration as a strategic and moral imperative and assimilate ESG principles within their organizational operating structures (Awaysheh & Klassen, 2010). Examining the intricate concept of institutional theory, this research relates understanding of how external forces and internal dynamics shaped ESG adoption. Understandably, the tacit interplay between coercive, mimetic, and normative forces frames MSMEs literal perception towards ESG adoption. (Beta & Ogunmokun, 2023).

2.2 Challenges Faced by Malaysian MSMEs to adopt ESG

The 11 challenges categorized by the researcher included respectively of regulations and policies, green finance, green supply chain, access to ESG information and technology, availability of ESG facilitators, government aids and grants, resources within MSMEs, education and awareness, ethical products market demand, mindset of MSMEs, and public-private partnership (PPP). Access to ESG information and technology, availability of ESG facilitators, government aids and grants, and resources within MSMEs, for instance, may become barriers to restrain ESG adoption if left unattended. Addressing well MSMEs' concerning challenges, education and awareness, ethical products market demand, mindsets of MSMEs and PPP can progress as enablers to promote embrace of ESG standards.

2.2.1 Regulations and Policies

Regulations and policies are collectively a major challenge as they provide the consistent basis for low cost and easy compliance. Being voluntary for MSMEs and mandatory only for firms under NSRF, ESG compliance in Malaysia is bound by no specific sustainability laws. Enforcement is by way of the existing laws enacted to protect environmental degradation, social well-being, and governance structures in Malaysia. Although KPKT oversees social impact assessment, environmental impact assessment is under NRES. When NRES oversees industrial waste, domestic waste is under KPKT (Abay, 2022). Currently, MSMEs will have to manoeuvre the challenge of dealing with multiple authorities.

The six key ministries with their main ESG responsibilities are (i) Ministry of Entrepreneur and Cooperatives Development (MECD): SME Sustainability capacity building across all ministries and agencies overseen by SME Corporation; (ii) Ministry of Natural Resources and Environmental Sustainability (NRES): water, waste management, energy, manufacturing, transportation and building sectors overseen by DOE and Green Technology and Climate Change Corporation (MGTC); (iii) Ministry of Energy Transition and Water Transformation (PETRA): water management, electricity and renewable energy overseen by Energy Commission, Indah Water Konsortium (IWK), SPAN and Sustainable Energy Development Authority (SEDA); (iv) Ministry of Housing and Local Government (KPKT): urban well-being, housing, landscape and solid (municipal or household) waste management, soil erosion, landslides, floods and local business operating licence overseen by local authorities and its associated agencies; (v) Ministry of Domestic Trade and Cost of Living (KPDN): All registered businesses and corporate governance overseen by Companies Commission of Malaysia (SSM); and (vi) Ministry of Finance (MOF): Global ESG frameworks, sustainability taxonomy and NSRF overseen by Bank Negara Malaysia (BNM), Securities Commission Malaysia (SC), Bursa Malaysia (Malaysian Stock Exchange) and BCX.

Table 2 summarizes the overlaps within these six key ministries underlining the main ESG body, main ESG instrument and main ESG scopes. Incidentally, MECD overlaps with all the other five ministries, NRES overlaps with PETRA and vice-versa, KPKT overlaps with NRES, KPDN overlaps with all ministries and agencies issuing business or operating licence, and MOF overlaps with KPDN. SME Corp, DOE (Department of Environment), MGTC, IWK, SPAN (National Water Services Commission), SEDA, SSM, BNM, SC, Bursa Malaysia and BCX are all important bodies involved with ESG matters. MSME ESG Assessment and ESG Quick Guide for MSMEs, NDC, NETR, SDG (Sustainable Development Goals), CA 2016, GVC, LCTF, and MCCG (Malaysian Code on Corporate Governance) are principal instruments affecting ESG adoption. These instruments document the topical concerns in environment, social and governance that smaller businesses are to report in their scope 3 carbon emissions required by their key customers in their annual sustainability disclosure.

Table 2: The Six Key ESG Ministries in Malaysia with Overlapping ESG (Source: Researcher)

N o	Key ESG Related Ministry	Overlapping Authorities	Main ESG Body	Main ESG Instrument	Main ESG Scopes
1	Ministry of Entrepreneur and Cooperatives Development (MECD)	All ministries and agencies for MSMEs	SME Corporation	MSME ESG Assessment and ESG Quick Guide for MSMEs	SME Sustainability capacity building across all ministries and agencies
2	Ministry of Natural Resources and Environmental Sustainability (NRES)	PETRA	DOE and Green Technology and Climate Change Corporation (MGTC)	Nationally Determined Contributions (NDC)	Water, waste management, energy, manufacturing, transportation and building sectors
3	Ministry of Energy Transition and Water Transformation (PETRA)	NRES	Energy Commission, Indah Water Konsortium (IWK), SPAN and Sustainable Energy Development Authority (SEDA)	National Energy Transition Roadmap (NETR)	Water management, electricity, and renewable energy
4	Ministry of Housing and Local Government (KPKT)	NRES	Local authorities and its associated agencies	Plan Malaysia, GBI and GBD, and SDG 11 and 17	Urban well-being, housing, landscape and solid (municipal or household) waste management, soil erosion, landslides, floods, and local

					business operating licence
5	Ministry of Domestic Trade and Costs of Living (KPDN)	All ministries and agencies issuing business or operating licence	Companies Commission of Malaysia (SSM)	Companies Act 2016 (CA 2016)	All registered businesses and corporate governance
6	Ministry of Finance (MOF)	KPDN	Bank Negara Malaysia (BNM), Securities Commission Malaysia (SC), Bursa Malaysia (Malaysian Stock Exchange) and BCX	Greening Value Chain (GVC), Low carbon Transition Facility (LCTF), MCCG, Bursa Sustainability Reporting Guide and NSRF	Global ESG frameworks, sustainability taxonomy and NSRF

2.2.2 Green Finance

Green finance is a challenge to ESG adoption because going green require initial funding to commence the exercise of ESG activities, especially in capital expenditure to procure equipment and continuous working capital to maintain the systems of compliance. In principle, green finance refers to targeted funding in expanding ESG principled responsible investment (Fedotova et al., 2022). Championing green finance, the Bank Negara Malaysia (BNM), central bank of Malaysia, instructed all banks to allocate 50% of their new lending towards climate action by 2026. Additionally, BNM reminded banks to offer financial innovations and explore novel financial structures to achieve the goal of public-private partnerships while assisting Malaysia to achieve its net zero mission. BNM encourages commercial banks to help their SMEs clients needing inclusive and just transition plan to boost financing capacity and address the hard-to-abate emissions within their supply chains businesses (Salim, 2023). Overcoming the financial challenge will minimize the present predicaments of Malaysian MSMEs in adopting ESG.

2.2.3 Green Supply Chain

Since most Malaysian MSMEs are in supply chain, greening the value chain of their business is hence a critical challenge. Green supply chains refer to logistics optimization solutions empowered with environmental responsibility to steer green supply chains models of circular economy-based reverse logistics, global value chain, and green or sustainable supply chains management. Companies can hence balance the environmental benefits in their logistics planning because of sustainable development (Sifaoui, 2024). Contrary to a linear economy, circular economy considers minimization to reduce waste

and pollution (Fernando et al., 2022). After the COVID-19 pandemic in 2020, online retail platforms have decimated brick-and-mortar stores (Tinglong & Tang, 2022). As such, product selection and production process can affect carbon reduction because scope 3 indirect supply chains carbon emissions far exceed the direct Scope 1 and 2 emissions by five folds (Huiling et al., 2022). Resolving the challenge of supply chains improve the rate of ESG adoption among Malaysian MSMEs. Attending carefully to the carbon reduction challenge of Malaysian MSMEs can improve ESG adoption.

2.2.4 Access to ESG Information and Technology

Access to information and technology is an inevitable challenge as ESG is a new knowledge to Malaysian MSME exporters and service providers subject to the requirements of NSRF. Therefore, alternative options (while waiting for viable long term economical carbon reduction solutions) to achieve decarbonization goals are essential. A low carbon economy needs a huge investment in asset transformation to espouse the use of new climate mitigation or adaptation technologies. Therefore, non-cost prohibitive technologies to execute climate action viable for MSMEs have become particularly relevant in ESG adoption. To meet decarbonization goals, firms may buy carbon credit to offset hard-to-abate carbon emissions (Salzman, 2024). Bursa Carbon Exchange (BCX), a legitimate and Shariah compliant carbon trading platform, was born due to this belief (Bursa Carbon Exchange, 2024). The potential benefit of BCX serving the decarbonization needs of the micro enterprises is enormous (Kamaruddin, 2024). Making available the ESG resources to MSMEs conveniently will navigate the challenge to accelerate the pace of ESG adoption in the long term.

2.2.5 Availability of ESG Facilitators

Availability of ESG facilitators is a capacity building problem that posed a serious challenge to Malaysian MSMEs because they are short of trained ESG personal to undertake ESG practices. Thus, domestically based professional bodies of local accountants, directors, managers, and lawyers charge lower fee for ESG advisory works become useful. These practitioners conducted ESG related continuing professional education (CPE) sessions for members, clients, and the inquisitive public. For capacity building, they organized talks and conferences on climate change, human rights, and corporate social obligations. Short courses and events held were mostly approved training with fee claimable under Human Resource Development Fund, accorded participants CPE hours (Human Resource Development Corporation (HRDC), 2024). The capacity building exercise by the professional bodies are helpful to eliminate the challenge as NSRF entails complex legal and accounting compliance.

2.2.6 Government Aids and Grants

Government aids and grants is a challenge for Malaysian MSMEs to benefit from due to lack of skills to apply and the usual difficulty in meeting the terms and conditions imposed by the approving authority. In practice, ESG is a community effort requiring a whole-of-nation approach to complement and supplement the government's regulatory and policy frameworks. Seed fund provided by government expedites adoption of new business imperative like ESG. To drive the growth of Malaysia's green economy, the Malaysian Government introduced the Green Technology Tax Incentive in 2014. This programme, with applications processed by Malaysian Green Technology and Climate Change Corporation, includes the Green Investment Tax Allowance (GITA) and the Green Income Tax Exemption (GITE). (Malaysian Green Technology and Climate Change Corporation (MGTC), 2024). Malaysian MSMEs can seek assistance of professional ESG NGOs to remove the challenge encountered in applying for government aids and grants.

2.2.7 Resources within MSMEs

Resources within MSMEs is a challenge to ESG adoption because in-house ability and internal capability of Malaysian MSMEs address the issue of carbon emissions reduction. Decarbonization is dictated by resources within MSMEs under two different kinds of carbon reduction: (i) Net zero, cutting of GHG (including methane) across the entire supply chains to near zero, with the remaining emissions absorbed by ocean and forests; (ii) Carbon neutrality, where atmospheric carbon dioxide removal equals society's total CO₂ emission (Xie et al., 2022), a more stringent requirement. Since Malaysia set its net zero carbon emission (Yeong, 2024) at 2050, decarbonization is thus a key disclosure item in all ESG reporting. Globally, the Sustainability Accounting Standards Board (SASB) and Global Reporting Initiative (GRI) dominated the international scene of ESG standards (Bose, 2020). Capitalizing on the supports from their NSRF compliant customers is an avenue to harmonize the challenge for Malaysian MSMEs to adopt ESG.

2.2.8 Education and Awareness

Education and awareness are a logical challenge to Malaysian MSMEs due to their limited exposures to climate damage and global warming. In scientific definition, climate change is a permanent shift in the patterns of temperatures and weather emitting heat-trapping greenhouse gas (GHG) due to burning of coal, oil, and gas. Climate science argued that temperature rise caused more droughts, wildfire, and floods to engender food scarcity (Jacobsen, 2013). Global warming is a form of climate change with long term heat envelopment of the earth's surface consequent to increased economic activities. Any consequential rise in sea level will lead to irreparable loss of coastal land and biodiversity. The Intergovernmental Panel on Climate Change (IPCC) postulated that rises beyond 1.5 degree Celsius above the pre-industrial period (between 1850 and 1900) will trigger widespread human health problems which may destroy humanity and civilization (Hoegh-Guldberg et al., 2018). Partnering closely with professional ESG NGOs operates toward circumventing the challenge of education and awareness.

2.2.9 Ethical Products Market Demand

Ethical products market demand is increasingly a challenge to Malaysian MSMEs in adopting ESG because society at large demand higher ethical observance and attention of modern businesses. Ethical production became a norm due to the "Oil Sands in Alberta" incident in Canada, an empirical sample of transformational change after national and global pressure to abate greenhouse gas emissions. For Oil Sands to survive, it was a 'new normal' to transact energy business within an ESG framework (Thibeault et al., 2023). In view of the low rate of ESG standards adoption among Malaysian MSMEs, ethical products dictated by consumer activism is a perception. Admittedly, small companies have lesser financial resources to develop green products or green production. However, large firms may impose ESG ratings and carbon emissions to pre-qualifying suppliers (Bekmurzaeva, 2023). Treating legitimate purchase of carbon units on BCX as a wise move to reconcile the challenge of ethical adherence in satisfying green movements is worth noting.

2.2.10 Mindsets of MSMEs

Mindsets of MSMEs is a central challenge to Malaysian MSMEs to adopt ESG because they are family businesses with daily operations managed by owners themselves. Sustainability Report (SR), a non-

financial report showing companies' yearly performance in respect of carbon emissions and other ESG parameters, is alien to them. Normally, SR describes committed carbon reduction, resource conservation, employees and community engagement, corporate governance matters, gender equality, biodiversity, anti-bribery, and corporate social responsibility activities (Setyaningsih, 2024). Although corporate governance and improved transparency of board diversity contribute to operational efficiency and market valuation, costs of observing environmental and social considerations are high and impact adversely initial financial results of sustainability implementors (Shaikh, 2022). Paradigm shift is necessary to address the challenge of mere profit centred business philosophy for Malaysian MSMEs to adopt ESG.

2.2.11 Public-Private Partnership (PPP)

PPP is a huge challenge to Malaysian MSMEs as they are unfamiliar with working on public-private partnership basis due chiefly to their small size of businesses. Typically, technological decarbonization solutions are expensive and public sector participation is pre-eminent. The need for PPP had caused the launch of the Public-Private Partnership Master Plan 2030 (PIKAS 2030) (Bernama, 2024). The 16 sustainability policies of PIKAS included Malaysia MADANI, Ekonomi MADANI, 12th Malaysia Plan, sustainable development goals, New Industrial Master Plan 2030, National Transport Policy 2019-2030, National Construction Policy 2023, Communications and Multimedia Blueprint 2018-2025, Malaysia Digital Economy, Malaysia Education Blueprint 2013-2025, National Integrated Water Resources Management, Green Technology Master Plan Malaysia 2017-2030, National Energy Policy 2022-2040, National Agrofood Policy 2021-2030, National Energy Transition Roadmap. and National Security Policy 2021-2025 (Public Private Partnership Unit, 2024). For ESG adoption purposes, MSMEs can pay more emphasis to PPP and achieve their business resilience along the way of leveraging on the expertise of professional ESG NGOs.

3.0 METHODOLOGY

The qualitative approach of this research involved the contextualization, interpretation, and understanding of MSMEs' perspectives aligned with the nature of qualitative inquiry (Busetto et al., 2020; Sundqvist, 2022). The aim was to unravel the challenges faced by Malaysian MSMEs to adopt ESG standards. Considering ESG compliance is currently voluntary, the researcher deemed a qualitative approach suitable since Malaysian MSMEs experienced ESG adoption subjectively. Qualitative data permits in-depth understanding, reality settings, multiple perspectives, enriching engagement, optimal flexibility, and easy conceptualization (Danisch, 2021). Thematically, the research analysed systematically primary data collected to identify recurring patterns and themes. The process prompted data familiarization, series of coding, pattern identification, theme distillation, and report writing. In between, open coding identified key concepts, while axial coding constructed relationships, and selective coding finally distilled themes into categories. An audit trail documented decisions in coding with independent experts analytically reviewed the findings for rigor and consistency. Additionally, with reliability checks executed over constant comparison, researcher iteratively evaluated emerging themes across varying data sources. In totality, the approach reinforced the robustness of the research findings.

In terms of sampling design and selection, the research selected MSMEs operating across East and West Malaysia. The population comprised MSME sectors of automotive, ESG consulting, information technology, energy services, plastics, supply chain, architectural, human resource consulting, children's education, environmental air solutions, paint and resin, construction, community agri-packages, oil and gas engineering, agricultural technology, waste food treatment, industrial automation, energy

efficiency, wholesale and distribution, and fleet management systems. The sub-sectors included sustainability reporting, cybersecurity, internet-of-things and artificial intelligence, freight and forwarding, logistics, transportation and warehousing, and energy auditing. Purposive sampling was employed for the structured interviews enabling the sampling of interviewees with relevant expertise and experience in ESG adoption. The unit of analysis was Malaysian MSMEs, whose key personnel were individuals intimate in the management of their key customers. Due selection of directors, chief executive officers, and chief operating officers provided relevant insights with optimal deployment of limited resources (Campbell et al., 2020). For data saturation, the research involved 29 interviews, exceeding Creswell's (2007) recommended sample size of 25 interviews for qualitative research (Morais, 2018).

For structured online interview, the researcher released interview guide with 36 ESG relevant questions to 29 MSME interviewees. All MSMEs responded to this convenient yet low carbon (in consistent with ESG principles) data collection exercise and each interviewee answered all the questions on the multi-dimensional challenges they faced as smaller businesses. The virtual interviews consumed two months and included both male and female interviewees of all major races in Malaysia aged 41-60 (of different faiths and religions), and with companies operating all over Malaysia. Through document review, researcher validated interviews results with secondary ESG data obtained from publicly available policy documents, ESG guidelines, Malaysian regulations, ESG reports, and other relevant press releases and articles issued by governmental agencies and private sector entities. Specifically, document review relied heavily on NSRF, ESG Quick Guide for MSMEs (from SME Corporation), Simplified ESG Disclosure Guidelines (from Capital Markets Malaysia), Greening Value Chain and Low Carbon Transition Facility (from Bank Negara Malaysia), and New Industrial Master Plan (NIMP) 2030 and iESG (from Ministry of Investment, Trade and Industry).

In the interest of trustworthiness, the research rigorously observed the four criteria of Lincoln and Guba's (1985) to achieve the goals of credibility, transferability, dependability, and confirmability. The three steps of expert validation, data triangulation, and member checking achieved credibility or internal validity. For clarity, relevance, and appropriateness, two sustainability experts reviewed the interview questions in addition to the pilot testing by two other MSME owners to meet real-world applicability achieved. Provision of detailed contextual descriptions of the Malaysian MSME landscape, ensuring insights applicability to similar business circumstances achieved transferability or external validity. A well-defined research protocol with highly standardized procedures for data collection, coding, and analysis achieved dependability or reliability. An audit trail supported interview guide consistently applied among interviewees with data reliability verified based on peer reviews of the coding framework. Deriving findings directly from interviewees' frames of reference to eliminate researcher's bias achieved confirmability or objectivity. The diversity of interviewees coupled with active data validation procedures, reduced the possibility of undue subjectivity.

The process of experts validation by the two sustainability experts (a supply chain distinguished professor and a central bank financial inclusion director) included the assessment of the interview questions to ascertain clarity, relevance, and appropriateness. Two independent MSME owners (who were not inside the sampled interviewees) conducted the pilot testing to fine-tune the interview guide. Comparing of interview findings and results of document review derived the methodological triangulation. Data source triangulation corroborated multiple secondary sources of regulatory documents and industry reports with primary data. Thematic triangulation cross-referenced emerging themes to verify consistency and comprehensiveness. Interview transcripts returned to participants for member checking and verification, evidencing the authenticity and accuracy of responses documented.

The audit trail maintained consisted of research decisions made, coding procedures used, and the methodological choices selected for transparency and repeatability reasons. Additionally, the research developed a consistent protocol with coding frameworks to perform the required reliability checks.

4.0 FINDINGS AND DISCUSSIONS

4.1 Findings

For the 11 challenges faced by Malaysian MSMEs to adopt ESG, the interview findings revealed that regulations and policies, government aids and grants, and public-private partnership posed coercive pressure. In turn, resources within MSMEs, education and awareness, mindsets of MSMEs, and green finance created mimetic pressure. Finally, green supply chains, ethical product market demands, access to ESG information and technology, and availability of ESG facilitators presented normative pressure. All the three underlying pressures of the institutional theory influenced ESG adoption among Malaysian MSMEs, instead of any one institutional pressure in isolation, because normal persons with varying background, upbringing, and inclinations are the ones managing smaller companies.

Table 3 manifested the results of the findings. By relative importance, regulations and policies collected a total 121 feedback consisting of 105 answers and 16 comment rendered by the 29 interviewees to rank as the most serious challenge faced by Malaysian MSMEs to adopt ESG. With 108 and 88 total feedback respectively, the second and third most concerning challenges were green finance and green supply chain. Access to ESG information and technology, availability of facilitators and government aids and grants occupied fourth, fifth and sixth places with total feedback of 55, 39 and 33 individually. Resources within MSMEs, education and awareness, ethical products market demand, mindset of MSMEs, and public-private partnership occupied seventh, eight, nine, ten and eleven places with total feedback between the range of 11-16 only.

Table 3: Relative Importance of Challenges (Source: Researcher)

No	Challenges to adopt ESG	Answers to Q1-35	Comments for Q36	Total Feedback	Relative Importance
1	Regulations and policies	105	16	121	1
2	Resources within MSMEs	9	7	16	7
3	Education and awareness	9	7	16	8
4	Mindset of MSMEs	6	7	13	10
5	Green supply chains	76	12	88	3
6	Green finance	95	13	108	2
7	Government aids and grants	26	7	33	6
8	Public-private partnership	4	7	11	11
9	Ethical products market demand	8	7	15	9
10	Access to ESG information and technology	46	9	55	4
11	Availability of facilitators	33	6	39	5

The first most important challenge according to the research finding is regulations and policies, and the key themes and trends that emerged in the course of interviewing composed of (i) Carbon Border Adjustment Mechanism (CBAM) and carbon tax: under the coercive CBAM legislation, the European Union will impose carbon tax on Malaysian products basing on the GHG emitted during production, effective 2026. Therefore, it is imperative that Malaysian exporters recognize the incremental price impact of the tax on their products for EU customers; (ii) NSRF as the Malaysian ESG standard: coercively, the NSRF is going to be the international reference for Malaysian companies conforming to global ESG standards with minimal cost and without complicating compliance meant to fuel sustainable MSMEs business growth internationally; (iii) ESG compliance is a cost burden: ESG compliance is coercively a legitimate cost of doing business, way forward. MSMEs will have to factor in the necessary expenses to cater to the business mandate considering their return on investment (ROI); (iv) ESG regulations to protect MSMEs interest: the coercive purpose of corporate law is to ensure fair play for all businesses, regardless of size. ESG regulation, when enforced, is also to protect the interest of MSMEs. NSRF has the potential of affording the credential required to qualify for green funding from banks to undertake ESG activities; (v) Critical roles of KPKT in ensuring ESG compliance: local councils under KPKT have coercive power as they issue operating licenses for all businesses under their jurisdictions. Thus, it has the authority not only to encourage ESG activities, but the right to shut down operations that breach licence conditions. However, enforcing ESG compliance with smaller enterprises requires careful planning; (vi) Statutory ESG audit (as proposed in NSRF): MSMEs expect the government to lead in coercively shaping a sustainable business environment benefiting the industry. As such, MOF expected GLCs and GLICs to campaign for more sustainability activities publicly, including auditing ESG standards compliance; (v) Implications of carbon credit in decarbonization: coercively, carbon reduction is bottom up though the idea to decarbonize initiates top down. After the owner is convinced and given directions, it is the floor staff who reduces carbon footprint in daily operational works. Thus, it can be an incentive for employees if employers share cost saving as staff welfare benefits.

The second most important challenge according to the research finding is green finance, and the key themes and trends that emerged while interviewing composed of (i) Pressing needs for funding: mimetic pressure may indirectly incentivize MSMEs to embrace sustainability practices in their daily operations. Among them, design of MSMEs loan packages to be appealing for low carbon transition. Green funding can also incorporate easy repayment, minimal bureaucracy friendly processing of loan applications, with features of easy and fast draw-down; (ii) Pragmatic disposition within MSMEs community: decarbonization is a huge mimetic problem for Malaysian MSMEs because of their extended sub-contracting activities. When works split into components, carbon spreads all over to complicate data collection. Nevertheless, MSMEs will have to comply with ESG practices if they are exporting to that EU that imposes CBAM; (iii) Prohibitive costs of borrowing: the high interest rates and the incidental fees for normal commercial banking can discourage MSMEs from mimicking sustainability activities. It is good to give in to market pressure provided that the opportunity cost is not incommensurately prohibitive to MSMEs with smaller margin; (iv) Inherent predicaments of small businesses: MSMEs preferred green funding because government aids usually come with mimetic conditions that appear too stringent or demanding. Micro-enterprises, for example, owner driving the truck himself, may have insufficient administrative ability to fulfil all the government's requirements attaching to the incentives; (v) Fear of debt trap: the cautious attitude of company owners established the inherent MSMEs' fear of debt trap on mimetic borrowing. One interviewee clarified his stance on the issue with deliberation on risk of over trading, failure to meet instalment payments, and finally made insolvent; (vi) Serious cash flow constraints: cash is king, especially to MSMEs with low profit margin to mimic green funding. Cash flow is a key MSMEs consideration because they often enjoy no credit and

buy on cash terms. However, MSMEs grant credit using bank financing to keep their customers. Hence, fixed monthly repayment is not helpful to them; (vii) Granularity of green funding: commercial banks apply vetting to weed out undesirable loans and avoid poor repayments or the possibility of mimetic delinquency. These are prudent banking practice to safeguard lending integrity that could apply also to green funding; (viii) LCTF and its implications: LCTF is available from BNM through commercial banks, but many MSMEs are unaware of this low interest and long tenure ESG facility to mimic for automation, digitization, and green innovation. The aim of this subsidized funding is to enable SMEs embracing sustainability with lowest cost; (ix) Consequences of the NSRF implementation: NSRF is the Malaysian ESG standard to mimic all the major global ESG standards. It removes the confusion of the reporting requirements on non-financial statements and save compliance costs for MSMEs. A supply chains MSME interviewee wished that NSRF can move towards streamlining the ESG adoption mechanics; (x) ESG micro-financing: though without any use cases, the potential of ESG micro-financing may be an alternative for MSMEs to mimic ESG activities. Micro-credit undertaken through cooperatives is an area to explore because of its convenience to MSMEs.

The third most important challenge according to the research finding is green supply chains, and the key themes and trends that emerged in the course of interviewing composed of (i) Implications of GVC: GVC is a normative incentive programme that BNM can better publicized to assist SMEs in achieving impactful green changes through technical advice and software tool that the system provides; (ii) Supply chains carbon footprint accounting: normatively, GVC offers SMEs digitization solutions to verify carbon emitted over the extended network of a value chain. Carbon accounting is tedious and unreliable unless a strong and seamless counter-checking system is in place to ensure transparent recording; (iii) Green Production: leaner and greener companies can conduct normatively their daily operations without incurring any penalties or experiencing costly and disruptive production stoppage. Monthly cost of operations will increase in terms of machinery failure that cause industrial accidents to attract legal impost; (iv) Green logistics services: green normative logistics services include international freighting, forwarding and customs clearance, warehousing, value-added services, demand planning and customers service. The end-to-end portfolio connects optimal operational efficiency with minimal environmental degradation through low carbon planning to minimize wasteful efforts; (v) Green transport: minimizing carbon footprint is tantamount to normative cost saving by eliminating wastage. Less wasteful run of trucks without full load capacity reduces diesel bill of lorries to optimize operational cost efficiency; (vi) Green machinery: low carbon emitting machines enjoy the normative reputation of being cleaner with lower maintenance. This advantage can offset the downtime risk inherent in high carbon equipment that breakdowns more often to disrupt uninterrupted economic run.

4.2 Discussions

Basing on the discovery of the *Regulations, Finance and Supply Chains (RFSC)* novelty pathway, and considering the themes and trends detected in the theoretical and empirical reviews done, the results of the findings showcased the aggregate interplay of the three institutional pressures in combination to influence the challenges faced by Malaysian MSMEs to adopt ESG standards. Specifically, the *RFSC* pathway sequenced the order of regulations and policies, green finance, and green supply chains in prevailing over the rest of the 11 challenges, where coercive power took precedence over mimetic and normative forces, which is logical looking at the research findings from human perspective. The direction is lucid that government is to take the lead to impose NSRF as a national ESG standard for Malaysia. Using the strength of NSRF which incorporate all the global framework, commercial banks can use the ESG report generated to evaluate sustainability loans of greening implications. The scope 3

carbon emissions focus of NSRF will automatically enhance accounting of supply chain emissions prevalent in the businesses of MSMEs.

Firstly, the most important challenge faced by Malaysian MSMEs to adopt ESG standards along the *RFSC* novelty pathway, is regulations and policies which can coerce compliance. KPKT is the ministry in the best position to enforce ESG adoption as it has the authority to impose condition on observance of ESG practices. Besides approving development projects, local councils can dictate ESG requirements on business premises based on its regulatory power on recycling, municipal waste, and social well-being. A coercive lever, the NSRF states clearly the low carbon transition in a phased and developmental manner. Through trickling effect, PACE (Policy, Assumption, Calculators and Education) hub provides capacity building and emissions calculator helping as well MSMEs, besides larger entities. The proposed amendment of the Companies Act 2016 to mandate audit of non-financial report will further accelerate ESG adoption as it provides timeliness and certainly while eliminating additional cost and complications in complying to multiple global standards.

Secondly, the next most important challenge faced by Malaysian MSMEs to adopt ESG standards along the *RFSC* novelty pathway, is green finance which is a mimetic area of potential growth as emerging micro credit if can be an ideal ESG funding source for MSMEs. Conventionally, micro credit organizations are efficient in administering small loans with speedy approval and timely disbursements. MSMEs are cash tight and funding to commence their ESG journey is taxing. MSMEs may capitalize on the BNM's GVC and LCTF offered by commercial banks to embrace ESG and future-proof their businesses. However, without BNM exercising its coercive power on all the commercial banks, market forces profit taking will prevail over LCTF and sustainability-linked funding. When banks optimize their loan portfolios along the mode of regular commercial banking operations, green finance will take a back seat to disincentivize ESG adoption among Malaysian MSMEs. Making ESG adoption low cost and high efficiency are thus urgent.

Thirdly, the other important challenge faced by Malaysian MSMEs to adopt ESG standards along the *RFSC* novelty pathway, is green supply chains which are a core subject in ESG adoption since most MSMEs are in supply chains related businesses with a need to account for their value chain carbon emissions. Like green supply chains management practices such as green transport, green logistics, green production, and green machinery are inclined to escalate ESG adoption, GVC from BNM equips Malaysian MSMEs with necessary technical support and software tools. ESG standards compliance is necessary due to the potential cost reductions, productivity improvement and expanded market reach of the businesses practicing it, bearing in mind MSMEs are subcontractors, vendors, contract works or service providers to private listed companies, multinational corporations, government-linked companies, or government-linked investment companies. Reducing movements in supply chain is not only green but lower carbon footprint with greater saving in transportation and other logistics cost, attaining higher productivity as well.

Finally, the findings of *RFSC* novelty pathway manifested the cost effective and time efficient approach to manage the resentment and resistant of Malaysian MSMEs relaying a strong message of the government's determination to enable smaller enterprises to live in the new norm of sustainability as a business imperative. By clarifying the uncertainty and economizing the cost of ESG compliance through legalizing the NSRF, MSMEs will be more prepared to resort to green loan and implement the supply chains decarbonization. The *RFSC* novelty pathway is in consistent with the revelation of the Public-Private Partnership Master Plan 2030 (PIKAS 2030), underscoring the significance of MSMEs in

Malaysian's economy, with the highlights that besides government services, supply chains and finance are the two overriding engines of economic growth for Malaysia because of the substantial involvement of micro, medium and small enterprises in value chain related industries (Public Private Partnership Unit, 2024). Presently, it is costly for MSMEs to deal with overlapping ministries and agencies on ESG related issues discouraging the broader acceptance of ESG buy-in.

5.0 CONCLUSION

5.1 Theoretical Implications

Besides meeting the net zero carbon emissions goal of Malaysia government, ESG adoption by MSMEs enhances global competitiveness of Malaysian PLCs and GLCs. Therefore, aligning carbon emissions goals of Agenda 2030 and Net Zero 2050 with MSMEs growth has intrinsic values for the resilience of Malaysia. Pivoting the *Regulations, Finance and Supply Chains (RFSC)* novelty pathway culminates the influence of the three institutional pressures of coercive, mimetic, and normative in the sequence of RFSC to constitute the dominating challenges faced by Malaysian MSMEs to adopt ESG standards.

To decarbonize, carbon credit available on Bursa Carbon Exchange (BCX) can be an alternative solution to expediting broader ESG standards adoption among Malaysian MSMEs, especially with the implementation of National Sustainability Reporting Framework (NSRF) that sets clear the ESG standards to apply. The potential of micro finance in catering to Malaysian MSMEs in embracing ESG adoption is another theoretical frontier for academicians to explore and formulate more comprehensive approaches for timely implementation.

5.2 Practical Implications

The researcher strongly urged MSMEs to consider leveraging on both the carbon accounting support of Greening Value Chain (GVC) and low interest, but long tenure repayment of Low Carbon Transition Facility (LCTF) offered by Bank Negara Malaysia (Malaysian's central bank) to mitigate the funding challenge they faced to adopt ESG. Navigating with NSRF is another inroad that Malaysian MSMEs can acquire knowledge to integrate ESG best practices into their supply chain operations with the collaboration of their PLC, MNC, and GLC customers.

Overcoming the challenges faced by Malaysian MSMEs to adopt ESG is a national priority. Applying a non-profit's operating model and under public-private efforts, suitably poised professional ESG NGOs can handhold MSMEs in the decarbonization exercise. Relying on their intellectual resources and industry expertise, such NGOs can function as the bridge between the authorities and the industry to minimize the coercive, mimetic, and normative pressures inherent in ESG compliance.

5.3 Policy Contribution

Policy makers and regulators can consider deploying the *RFSC* novelty pathway to directly align existing policies and refine targeted directives to facilitate Malaysian MSMEs adopting ESG standards. The research amplified MSMEs' dire desire for clearer, more substantive, and definite regulatory and financial support mechanisms in respect of regulations and policies, green finance, and green supply chain.

The researcher recommends that ministries having functional surveillance over MSMEs to consider the cash flow positions, low margin and lean workforce predicaments of smaller businesses. Simplifying the government delivery system implied in the Public-Private Partnership Master Plan 2030 (PIKAS 2030) as published by the Federal Government of Malaysia to fortify PPP spirits is of primacy. The onus is on the government to enable MSMEs to continue to contribute to the economic sectors of Malaysia while helping the country to achieve its national climate agenda while ensuring larger corporations' global competitiveness at the same time.

5.4 Limitation and Future Research

This research is limited by its sample size and other unique though lesser important challenges faced by MSMEs to adopt ESG standards such as access to ESG information and technology, availability of ESG facilitators, government aids and grants, resources within MSMEs, education and awareness, ethical products market demand, mindsets of MSMEs, and public-private partnership. Since ESG standards adoption is still in its initial stages, MSMEs in the advanced phases of ESG implementation were rare for the research findings to be replicable.

Future research should direct towards studying in-depth emerging micro-finance or micro-credit which is potentially capable of offering smaller size green loans with lower interest rates and higher flexibility, untypical of the conventional commercial banking, for Malaysian MSMEs to accelerate adopting ESG standards for their business survival and Malaysia's low carbon transition. Incentivizing widespread use of carbon credits to offset carbon emissions is another new research domain in view of the existing low trading volume on BCX.

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