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CLIMATE RELATED DISCLOSURE: ISSUES AND CHALLENGES IN KEY SECTORS

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Abstract: *This conceptual paper discusses the issues and challenges on climate-related disclosure for key sectors in Malaysia, including of energy, transportation, utilities, and plantation. As regulatory demands and stakeholder expectations intensify, the shift from voluntary to mandatory climate disclosures presents different issues and challenges for these sectors. This paper explores the mechanisms and strategies firms have employed historically, and currently in compliance to reporting requirements. The discussion is framed within stakeholder theory alongside legitimacy and institutional theories in bring out these motives of influence climate related disclosures. This paper highlights the importance of standardized reporting practices in embracing corporate transparency, innovation and sustainability leadership. This paper offers valuable insights for companies and policymakers seeking to improve long-term resilience in a world of growing climate related disclosure expectations.*

Keywords: *Climate-Related Disclosure, Sustainability, TCFD, IFRS S2, Regulatory Trends*

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Introduction

The Importance of Climate-Related Disclosures in Malaysia

In Malaysia, climate-related disclosures have received pervasive coverage in the literature where studies shed light on their attributes, quantity and quality of disclosure as well as the effect on performance. Although Malaysian companies are aware about climate change, only a small number of governance-related and environmental risk disclosures have been captured in recent studies according to Yusoff et al. (2019). Malaysia has taken precautions against climate change and legal frameworks for mitigation besides voluntary environmental disclosure (Abdul Rahman, 2018). In other study, such as by Ooi & Amran (2018) was also highlighted the objective to develop a Malaysian context climate change reporting index is for better transparency and benchmarking. Environmentally sensitive industries — energy, transportation, utilities and plantations are the main reasons why this climate related disclosure is a major issue in Malaysia. The articulation on the risks, governance framework to mitigate these climate related risks and financial implications resulting from it as highlighted by Malaysian government and associated stakeholders. There is a need for standardized reporting to improve transparency and sustainability. Despite growing research, there is still a lack of sector-specific studies on climate-related disclosures in Malaysia. Most studies generalize findings and don't address unique sector challenges. This study aims to fill this gap by examining the current state of disclosures in the energy, transportation, utilities, and plantation sectors, identifying challenges in moving from voluntary to mandatory disclosures, analysing sector responses to new requirements, and recommending ways to improve this climate-related disclosure. This study is important because it offers insights for businesses to handle regulatory demands, aids policy development for standardized reporting, and supports Malaysia's resilience and competitiveness with better climate disclosures.

Problem Statement

According to EY's Climate Risk Disclosure Barometer 2020, it has thus revealed that Malaysia's top 100 public listed companies (PLCs) disclose on average only 34% of climate risk relevant data with a low-quality disclosure score of only 12%. This points to weak disclosure practices with regard to climate risks, and an overall significant difference relative to international standards. Some industries like energy and utilities have a very low level of overall climate risk disclosure on average, the coverage is only 21% and quality only 6%. This is also alarming because energy sector has played a great role for Malaysia's development such as growth. Still, emissions have also risen along with this growth as the energy sector has remained the biggest emitter of the greenhouse gas in the country. Deputy Prime Minister Datuk Seri Fadillah Yusof pointed out that the energy sector, including electricity supply, accounts for around 80 per cent of Malaysia's overall GHG emissions (Malaysian Green Technology and Climate Change Corporation, 2024). Given that this is a high emission sector, this limited disclosure is highly undesirable particularly given that these sectors stand to experience sunk costs as the globe transitions to a low carbon economy. Moreover, a vast majority of the Malaysian PLCs including those in the high-risk categories have failed to incorporate the scenario analysis in their disclosures. Less than 10 companies are conducting future scenario analysis, and this weakness in resilience categorically undermines plans for long-term impacts of climate change (Ernst & Young, 2020).

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Literature Review

A shift from Voluntary to Mandatory of Climate-Related Disclosures

In recent years, there have been transitions in corporate reporting from primarily voluntary disclosures to progressively mandatory. This shift is increasingly regulatory-driven and also driven by stakeholder expectations, as companies will need to show more transparency in their climate disclosure, demonstrating the sustainability of business models that are reducing emissions and driving new investment into areas benefitting human health. For the last quarter of a century voluntary frameworks is seen to emerge, such as TCFD (Task Force on Climate-related Financial Disclosure). However, they have been insufficient in satisfying the requirements for reliable and comparable information (Armour et al., 2022; Dey et al. As a result, mandatory disclosures are increasingly viewed as essential to allow investors and other financiers an ability accurately price climate risks and allocate capital efficiently (Armour et al., 2021). This is clear in other jurisdictions such as the U.S. or Canada (Freedman & Park, 2017; Gilliland et al., 2023).

The Relevance of Climate-Related Disclosures for Key Industries

Investor and stakeholder demand for information on climate-related disclosures have grown, particularly in industries with high environmental sensitive industries (Griffin et al. 2012). It helps to evaluate risks and opportunities of climate-related, helping in informed decision making (Dey et al., 2024). Nevertheless, the level of environmental risk disclosures is still low in quality and quantity particularly from the plantation sectors (Yusoff et al., 2019). Failure to disclose these risks results in companies undermining their own stakeholder trust and restricting capacity for effective risk management of climate-related issues.

Both companies and stakeholders such as consumers, investors, regulators are demanding that companies to address climate risk and disclose their actions. These companies are expected to provide value to their stakeholders by addressing environmental issues as well (Christis & Wang, 2021). When stock returns tend to decrease due to climate change concerns, and investors are usually among the first ones who have negative perceptions toward on this matter (Basu et al., 2022). Inadequacy of traditional accounting systems, which are mostly rooted in past financial performance and its relevance to the needs of investors and other stakeholders only further underscores the significance of climate-related disclosures (Rossi et al., 2018). Consequently, companies are being forced to report more comprehensive and transparent sustainability reporting, emphasizing environmental issues upmost such as information about the main risks (Rossi et al., 2018).

Theoretical Framework

Stakeholder Theory

One of the ways to incentivize companies is for stakeholders to demand climate-related disclosures from corporations. In the literature, it has been pointed out that powerful stakeholders are putting pressure on companies for climate change-related accountability and disclosure like institutional investors; government bodies, NGOs and media (Haque & Islam, 2015; Haque & Islam, 2012). In global climate change disclosure practices, institutional investors play an essential role in influencing (Cotter & Najah, 2012). It is the crucial stakeholders who can pressurize an organization to improve and enrich its disclosures on issues relating to climate change due to their differences compared with public disclosure (Haque et

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al, 2016). Companies are accountable not only to shareholders but also for stakeholders who have interests in the social, environmental and economic performance (Xu & Wang, 2008).

Legitimacy Theory

In the intricate scenario of business in a highly dynamic landscape, companies are perpetually striving to gain legitimacy to be recognized as an authentic entity and social acceptance by regulators, investors, customers and public. An approach that businesses often use, such as a corporate disclosure (Deegan, 2002). Legitimacy theory states that companies make a move on disclosure practices to assure and create an alternative, more legitimate facade in reducing questioning whilst maintaining the level of confidentiality (Michelon's et al., 2015). It is a vital conduit in our economies, and the existence of data about firms serves not only as necessary to make appropriate capital allocation decisions for investors but also helps stakeholders to stay away from potential peril (Alareeni & Hamdan 2020). According to them, greater disclosure will attract capital and ensure confidence in stock markets.

Institutional Theory

Considerable amount of climate change related disclosures is influenced partly by stakeholder pressures specially from institutional investors and regulators (Haque & Islam, 2015). Doshi et al. (2012) show that organizational characteristics such as proximity to headquarters and ownership structure moderated responses to mandatory disclosure regulations among the firms they studied. Environmental disclosure quality is influenced by several economic incentives, public pressures and institutional conditions (Cormier et al., 2005). The effectiveness of voluntary CSR reporting compared to mandatory CRS varies across regulatory environments (Crawford and Williams, 2010). Boodoo (2016) remarked that governments and stock exchanges have pushed companies to reveal their social and environmental policies, often under obligatory reporting limits. This has in turn resulted in more corporate disclosure, as firms try to portray a better image regarding their efforts at Corporate Social Responsibility (CSR) (Alareeni & Hamdan, 2020). According to Akhtaruddin and Haron (2010), the extent of corporate voluntary disclosures is also significantly related to board ownership and the effectiveness of audit committees.

Exploring Regulatory Trends

Historical evolution

While there is low level of corporate climate reporting in Malaysia, corporations are getting aware of the impacts due to importation and integrating strategies in their operations (Ooi & Amran 2018). The government efforts include energy efficiency initiatives and renewable utilization (Ooi & Amran, 2019). Much has changed over the past several years in relation to climate change disclosure regulations both within Malaysia and internationally. Malaysian domestic market introduced mandatory CSR disclosures in the late 2000s (Fatima et al., 2015). Globally, the Kyoto Protocol, Global Reporting Initiative (GRI), Carbon Disclosure Project (CDP), Paris Agreement and Task Force on Climate-related Financial Disclosures (TCFD) have laid grounds for transparent climate reporting. Additional corporate climate disclosure requirements underscore the critical role of complete transparency for climate risks and opportunities.

Meanwhile, at a global level, focus on ESG regulatory framework is increasing with many countries requiring disclosures based on Task Force for Climate-related Financial Disclosures recommendations (Tang, 2023). According to Haniffa & Cooke, 2002, the disclosure practices

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tend to be affected by firm's corporate governance characteristics and slightly by country level financial performance of the company (Smith et al., 2007). Despite the positive sign there has been a slight decrease in the overall extent of environmental disclosure among companies listed on main markets and ACE market at Bursa Malaysia within period from 2007 to 2010, with still lower total score as opposed to potential scores while paper demonstrated that quality level of environmental reporting was found low (Fatima et al., 2015; Hashim & Rahman, 2011). Many comparative studies conducted in Malaysia with other countries indicate that there are different disclosure practices and influencing factors between them (Atan et al., 2016).
The shift toward mandatory reporting and the alignment of multiple sustainability standards are an indicator that this is going to be a continuous process of bringing forth more transparency in ways business is conducted on global scale.

Key Regulations

The application of other global standards, such as the EU's Non-Financial Reporting Directive (NFRD), the Task Force on Climate-related Financial Disclosures (TCFD), and the International Financial Reporting Standard (IFRS) S1 and S2 standards has significantly influenced corporate transparency and accountability globally including in Malaysia. The NFRD has mandated the public interest companies that have altered the corporate transparency and accountability arena globally including in Malaysia. Voluntary disclosure decisions are influenced by corporate governance structures, regulatory regimes and ownership types (Arshad et al., 2010). IFRS S1 and S2 standards give a very broad framework for sustainability-related financial disclosures but have some significant differences to global best practices making it difficult to get any consistency in reporting. These frameworks are important to Malaysian companies as they practically guide companies on the how of sustainability reporting at the same time encourages standardization and also increases data quality, stakeholder engagement. Nevertheless, more research is required to discern how the issues could be overcome by implementing these regulations effectively.

Issues And Challenges Faced by Environmentally Sensitive Industries

Environmentally sensitive industries are sectors of the economy that have been targeted, because they really do vulnerable on environment. The identified sectors as environmentally sensitive are energy, transportation, utilities and plantation (Amar Hisham bin Jaaffar et al., 2018; Haslinda Yusoff et al., 2019). The high carbon footprints of these industries, their large environmental and natural resource usage profiles make the footprint of companies in this category will be severely impacted by the shape that new regulations inevitably impose on them.

Energy Sector

Public disclosure in the energy sector is highlighting organizations towards climate exposure (Nowiski, 2018; Gilliland et al., 2023), underlining global stakeholder needs and regulatory requirements. Stakeholder theory is used to analyze the complex dynamics of sustainability transitions in energy (Almeida Marcon Nora et al., 2022; Hörisch et al., 2014) Organisations are struggling with maintaining relationships to its stakeholders, taking into account the unique interest and empowering them as ambassadors of sustainability (Hörisch et al., 2014). Stakeholder-groups type and relativity, such as the role of government or public involvement might impact carbon disclosure practices (Guenther et al., 2016).

The legitimacy theory is used as a theoretical framework for understanding corporate environmental disclosures and practices in the energy sector (Patten et al., 2019). Voluntary

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environmental reporting is thus a legitimation strategy companies employ to uphold their societal acceptance (Jupe, 2005). Luft Mobus, (2005) suggests that mandatory disclosures of environmental non-compliance may strengthen subsequent regulatory performance.

There are pressing issues for the energy sector to report on climate-related disclosures influenced by institutional pressures and stakeholder expectations. In accordance with normative pressures and industry standards organizations are required to implement strong risk managment frameworks (Herold et al., 2018; C.D.E.D.Ó.E. Gás, 2016). The measurement and reporting of greenhouse gas emissions to quantify environmental performance are therefore critical for regulatory compliance, social expectations (Nowiski 2018) or other accountability reasons. For a business to comply with institutional stress on sustainability it is imperative that the investment in both traditional sources of energy along with renewable (Dhanda et al., 2021). Organizations need to accomplish climate goals and maintain transparency in order that they can secure legitimacy within their institutional environments as reputation and stakeholder trust is crucial (Herold, 2018; C.D.E.D.Ó.E. Gás, 2016).

Utilities Sector

Disclosure of climate-related information has gained critical importance within corporate reporting, taking account of concepts based on the stakeholder theory. A lot of research shown that high stakeholder power, causes significant effect on sustainability and environmental disclosure (Majdi et al., 2023). Different stakeholder groups such as the government, media, employees and wider society could all have an effect on disclosure practices (Guenther et al., 2016; Elijido-Ten et al., 2010). Thus, studies in Malaysia show that concerns about the environment at a high level of management and government power affect disclosure (Elijido-Ten, 2004). Despite this, the disclosure quality of development countries remained at a general description level which was suggested needed improvement (Elijido-Ten 2004).

According to the legitimacy theory, companies need to conform with societal norms so as they can be legitimate (Jupe, 2005). Cormier and Gordon (2001) note income statements by ownership status, size, industry sensitivity affect disclosure practices. Where recent research also addressed is the need for better quality of climate reporting, especially in corporate governance areas (Braasch & Velte 2022). Legitimacy theory, while criticized (Patten 2019), is still widely used in the exploration of corporate social responsibility disclosure motivations and practices. Institutional theory is instrumental in examining how aspects of regulatory, normative, and cultural-cognitive pressures jointly influence corporate climate-related disclosures (Mateo-Márquez et al., 2020). In their study, Cotter & Najah (2013) stresses the influence of institutional investors on voluntary climate change disclosure whilst Kolk et al., 2008 suggest initiatives such as the Carbon Disclosure Project are crucial in terms of promoting transparency. Still, difficulties persist with generating meaningful data for stakeholders (Kolk et al. 2008). The scholarly also underscores the importance of companies to adjust toward institutional pressures by adopting activities for climate control and adaptation (Daddi et al. 2020).

Transportation

Stakeholder pressure has significantly affected corporate environmental actions of companies especially in the area of carbon Management practices on transport and logistics sector (Kumarasiri 2017; Herold & Lee 2018). Companies may, for example balance stakeholder expectations with operational resilience by incorporating methods of sustainability and risk management (Arowosegbe et al., 2024; Kolk & Pinkse, 2007). Firms can use a lack of

Volume: 9 Issues: 58 Issue [December, 2024] pp. 154- 170
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transparency as an image act that will respond to legitimacy interests (Liesen et al., 2015). There is plenty of room for growth like carbon performance reporting and the formation around a complete carbon management strategy (Herold & Lee, 2017).

Companies, particularly those in environmentally sensitive industries see environmental disclosures contained within annual reports and other communications as simply a legitimation strategy (Jupe 2005). Firms more sensitive to the carbon risk generally disclose greater with-strategy information about climate-related risks (Braasch & Velte, 2022). However, there are still lots of potential for improvement in climate reporting quality, particularly in corporate governance (Braasch & Velte, 2022). Legitimacy theory is also seen to provide just cause for differences in environmental disclosure amongst various sectors (Campbell 2003).

There are a range of coercive, normative, and mimetic pressures for firms to embrace carbon management practices (Herold & Lee 2018; Daddi et al., 2020) as well as incentives or regulatory requirements to disclose climate-related information. To gain the legitimacy and support of stakeholders, companies conform their practices to institutional logics (Bartlett et al. 2009). One of the main challenges faced by organisations is how to align sustainability with operational resilience (Arowosegbe et al., 2024), which calls for organization's strategies and activities designed in adhered approach corresponding to institutional expectations.

Plantation Sector

In the plantation sector, climate-related disclosure is challenging (Haslinda Yusoff et al., 2019), with evidence of low-level environmental risk reporting by studies on both EPF and non-EPF-listed companies listed on Bursa Malaysia [15] as well as minimal corporate climate change disclosure in another research study focusing only on palm oil industry (Adam G. Arian & John Sands, 2023). E. Elijido-Ten et al., (2010), reveals that stakeholder impact strategies have an important role in documenting environmental revelations, but the sociopolitical economic and institutional theories underline much more investigation within this area of discipline.

As Braasch and Velte, (2022) proved, there is still the challenges related to inadequate and inconsistent issue in climate-related disclosures particularly following TCFD recommendations that are beyond ineffective with huge inconsistencies among firms, leaving a lot more desired especially when it comes governance reporting. Nevertheless, regulatory enforcement and systematic reporting frameworks are crucial for the transparent disclosure of climate-related information (Borghei et al., 2023). Overall, legitimacy theory continues to explain the importance of climate- related disclosures (Mousa & Hassan 2015; Ogunode, 2022).

Through the institutional theory, climate-related disclosure in plantation sector deals with being under external pressures to get legitimacy and meet stakeholder's expectations.The mechanisms of isomorphism affected the sustainability reporting by A. Amran & R. Haniffa (2011) in developing countries Government linked companies: evidence from plantation industry Carbon disclosure (A. Kolk, 2008) is approximate to institutional pressures including the coercive, normative and mimetic manner in which they influence corporate responses to climate change issues. Institutional pressures lead firms to implement climate mitigation and adaptation responses. Institutional and stakeholder pressures importantly shape mitigation responses to carbon emissions, with coercive pressures sometimes effective (K. Dhanda et al., 2021).

Volume: 9 Issues: 58 Issue [December, 2024] pp. 154- 170
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Methodology

This study employs qualitative content analysis as its primary research method to investigate the challenges and current state of climate-related disclosures in Malaysia's key sectors: utility, transportation, energy, and plantation. A review of content analysis is helpful in analysing secondary data in form of reports, specifically, annual reports, sustainability reports, and other literature in order to provide a general assessment of Malaysian climate reports' themes and patterns (El-Said et al., 2022). Thus, the research focus relies on the literature review and theoretical frameworks including stakeholder, legitimacy, institutional theories to investigate how different sectors address the increasing levels of regulation and demands from stakeholders. These theories help direct how data should be classified and analysed and includes such areas as the compliance, stakeholders, and legitimacy. This approach of coding allows for discovering issues and disclosing requirements and potential problems within the sector and its governance structure as well as questionable financial aspects of climate reports. Furthermore, content analysis is applied to compare what Malaysian companies have done with the best practices, such as TCFD and IFRS S2 guidelines. The study thereby provides insights on where Malaysian industries are lacking for them to meet up to international standards. This approach enhances policy advice and offers insights regarding industries seeking to conform to expected climate disclosure policies.

Strategic Adaptation

Entities must apply different adaptation strategies that improve their climate-related disclosures in facing the issues and challenges of climate change as well as complying to climate-related framework such as IFRS S2 requirements. Key areas risk management and internal controls, where integrating risk management frameworks and establishing dedicated committees for health, safety, and environmental matters demonstrate adherence to governance requirements (Ben-Amar & McIlkenny, 2015). Internal controls over financial reporting and ethical culture have a significant influence on compliance with IFRS (Nalukenge et al., 2018).

Ensuring they have access to the right data by investing in technology such as advanced QHSE software for accurate and transparent incentives, that promotes good climate-related disclosures (Miglionico, 2022; Pizzi et al., 2023). In line with IFRS S2's aspiration for standardized reporting practices, other reporting standards within the proposed requirements, such as compliant international GHG accounting practices and comprehensive systems include financial, operational and sustainability data in a traditional set of reports (Comyns 2018; Jose 2017). The adoption of IFRS Sustainability Standards especially in the case of IFRS S2 is seen as a way to standardize sustainability reporting across nations globally (El Khatib, 2024) and studies have revealed that compliance with international standards usually improves value relevance for accounting information (Alfaraih, 2009).

The key findings from Malinovskaya (2022) and Indyk (2022) suggest that integrated reporting is an increasingly important mechanism for integrating financial operational and sustainability information. In achieving Net-zero emissions (NZEs), which are necessary to satisfy the terms of The Paris Agreement, may require innovative solutions such as Bioenergy with CCS & Direct Air Capture (Regufe et al., 2021). The application of CCUS technologies in the construction-related industries are believed having potential to decrease CO2 emission from one of the largest emitting sectors (Chai et al., 2022).

The Three Lines of Defense (TLoD) model, for instance, is an approach commonly found in risk management adapted by many financial institutions (Glen Borg et al., 2020; Ulrich

Volume: 9 Issues: 58 Issue [December, 2024] pp. 154- 170
International Journal of Accounting, Finance and Business (IJAFB)
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Bantleon et al., 2020). Internal carbon pricing mechanisms establish the actual financial impacts from climate risks and opportunities in quantities that will assist with necessary IFRS S2 related disclosures. Especially when considering capital-intensive, environmentally sensitive industries is it a particularly great offset against emissions (Byrd et al., 2020). One of the major obstacles to widespread ICP adoption is firm size, insufficient price levels and perceived complexity (Riedel et al., 2021).

Assurance and verification of sustainability reports increase the reliability of disclosed information. Integrated reporting combines financial and sustainability information, providing a comprehensive view of a company's performance. The assurance of sustainability reports, including climate-related disclosures, is gaining importance globally. Studies show an increasing trend in companies obtaining external assurance for their sustainability reports (Akbaş et al., 2020; Green & Zhou, 2013). Leadership is paramount in energy and sustainability initiatives within an organization (D'Souza, 2024). By adopting these strategies, Malaysian entities in the energy, utilities, transportation and plantation sectors would improve their climate-related disclosure with respect to compliance with IFRS S2 standards.

Conclusion

Future of climate-related disclosures in Malaysia is probably going to be facilitated by evolving regulatory frameworks and increasing stakeholder expectations. Forthcoming stricter mandatory climate-related disclosure requirements on the basis of mounting pressures by global as well local conditions (Tang, 2023; Dey et al., 2024) are anticipated to rely even further onto businesses for increased transparency and accountability. New reporting standards like the IFRS S2 or efforts such as Task Force on Climate-related Financial Disclosures (TCFD) will help drive adoption of best practices for company disclosures. Climate change awareness has been signified by Malaysia, which includes some concentration on climate change business strategies (Ooi & Amran, 2018). Tang (2023) asserted that Malaysia can also improve if it adopts a more comprehensive regulatory and disclosure frameworks surrounding the ESG as a whole. In addition, developments in technology and analytics will increase accuracy as well as reduce uncertainty around climate-related information further supporting better preparedness.
Standardized climate-related reporting is essential for businesses and policymakers in Malaysia to enhance long-term resilience as well as global competitiveness. Aside from a requirement to publish climate related financial risks, it calls for companies to incorporate these within their broader strategies and invest in better data gathering and reporting capabilities. On the other hand, policymakers must build transparent and predictable legal frameworks that are consistent with international norms; they can also provide guidance to businesses during this transition process. Through environmental governance that embraces transparency and accountability, Malaysia can be one of the frontrunners in sustainability global leadership as a sovereign nation with reliable climate adaptability mechanisms (K. Tang 2023).

Volume: 9 Issues: 58 Issue [December, 2024] pp. 154- 170
International Journal of Accounting, Finance and Business (IJAFB)
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Volume: 9 Issues: 58 Issue [December, 2024] pp. 154- 170
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