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CONCEPTUALISING STAKEHOLDER COMMITMENT, CLOSED-LOOP SUPPLY CHAINS AND ORGANISATIONAL PERFORMANCE: A CIRCULAR ECONOMY PERSPECTIVE

Nor Azila Mohd Johari, Ahmad Rais Mohamad Mokhtar, Nazura Mohamed Sayuti

Faculty of Business and Management, Universiti Teknologi MARA, 42300 Puncak Alam, Selangor, Malaysia
E-mail: ahmadraismm@uitm.edu..my

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Abstract
In the supply chain context, circular economy (CE) initiatives strive to minimise waste and pollution by promoting remanufacturing to reduce the reliance on virgin materials. To realise the CE, closed-loop supply chains (CLSCs) have been identified as the backbone of its implementation. Unfortunately, little attention has been paid to exploring the contribution of CLSC practices in manufacturing industries, particularly towards the transition to a more circular economy in emerging economies. This study aims to propose a conceptual framework for examining the impact of stakeholders' commitment on CLSCs and organisational performance. In general, this study proposes that stakeholders' commitment (customers' pressure, top management commitment, buying firms' leadership, and government support) has a significant impact on CLSCs implementation. Furthermore, this study also proposes that CLSCs implementation contributes significantly towards organisational performance. This study suggests that future studies should conduct an empirical investigation using the conceptual framework of this paper. It is expected that this study will facilitate discussions on the need to deepen the comprehension of stakeholders' commitment and its influence on CLSCs and organisational performance. The study contributes to the existing literature by addressing the gaps between stakeholders' commitment, CLSCs, and organisational performance in realising the transition towards CE.

Research paper

Keywords: Circular economy, closed-loop, supply chain, reverse logistic, stakeholder, sustainability

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Introduction

Rapid industrialisation has harmed the global environment, particularly emerging economies (Katiyar et al., 2018). Nonetheless, globalisation has complicated the supply chain distribution channels of goods and services and increased carbon emissions (Geng et al., 2017). Today, the world faces severe threats from climate change, resource depletion, and biodiversity loss, contributing towards an increased global awareness of environmental sustainability (Wang et al., 2022). Most of manufacturing firms have recently realised the need to transit from a linear production system to a more circular way (Ellen MacArthur Foundation, 2015).

As manufacturing issues are vital in implementing and realising circular economy practices, proper supply chain design and planning are essential (Genovese et al., 2017; Salamzadeh et al., 2021, 2022). Closed-loop supply chains (CLSCs) have been considered the backbone of the micro-and meso-level implementation of CE principles (MahmoumGonbadi et al., 2021). CLSC is designed to retrieve core goods for remanufacturing, recovery, refurbishment, and recycling purposes (Masi et al., 2017). In general, CLSCs practices are integrating two supply chain orientations: forward and reverse supply chains (Wells & Seitz, 2005).

Furthermore, rapid urbanisation and advanced technology have boosted product production and usage, and simultaneously increased the generation of waste (Zhang & Chen, 2021). Thus, cleaner production methods (particularly remanufacturing through CLSC initiatives) have been initiated and are vital in mitigating environmental issues (Rahman et al., 2022). In addition, these practices allow manufacturers to capture residual value from unused end-of-life products and lower manufacturing costs (Santagata et al.,

2021; Zhang & Chen, 2021). As remanufacturing provides similar product quality to the new ones, CLSC has emerged as one of the most prevalent circular economy (CE) initiatives, where end-of-life and end-of-use products are returned to their original position or indeed better (Singhal et al., 2020; Salamzadeh, 2020; Radović-Marković et al., 2021; Yakubu et al., 2022). Today, researchers are examining closed-loop activities and their facilitation roles towards the CE (Hazen et al., 2017).

Overall, CLSC is crucial in maintaining the environment and improving organisational performance. For this reason, stakeholder engagement is needed to ensure the penetration of the notion throughout the supply networks. Stakeholder involvement, as well as intra and inter-organisational information sharing, cultivate the value creation for CLSC (Schenkel, Krikke, et al., 2015). In addition, stakeholders in manufacturing industries have a vital role in establishing strategies to achieve adequate and efficient CLSC implementation.

In emerging economies, the concept of CLSC is practical and ideal, but a lack of funding often restricts manufacturing firms from integrating closed-loop operations. As the concept of CLSC is relatively new, leading companies have to be able to engage with upstream and downstream supply chain partners and meet the needs of reverse or CLSC orientations. A CLSC-oriented firm should aim to establish shared goals with supply chain members so that the entire supply chain can mutually receive the benefits (Mokhtar et al., 2019b; Shaharudin et al., 2019). A leading firm should establish a vision for sustainability improvement and motivate supply chain members to collaborate to attain the new supply chain orientation (Defee et al., 2009). Addition-

ally, government and ministries agencies must be able to regulate and articulate this concept clearly to industry players (this is possible through incentives such as reduction of tax). Thus, the sustainability agenda can be accepted as a common standard across industries.

Although extensive research has been carried out on CLSC, no single study exists that adequately describes the stakeholder impact on CLSC and organisational performance in emerging economies. Nonetheless, CE and CLSC are relatively new concept in emerging economies, particularly in the South East Asian countries (Shaharudin et al., 2019; Eltayeb et al., 2011;). There has been limited interest in CLSC in emerging economies due to a lack of implementation, infrastructure developments, stakeholder pressures, and laws (Eltayeb & Zailani, 2009; Hsu et al., 2013; Shaharudin et al., 2019).

This study aims to propose a conceptual framework of the integration between three main variables in realising the transition towards CE. To achieve the objective of this study, the following questions have been formulated:

1. *Does stakeholder commitment have a positive influence on closed-loop supply chain implementation in emerging economies?*
2. *Does closed-loop supply chain implementation have a positive influence on organisational performance in emerging economies?*

Literature Review and Proposition Development

Circular Economy

Recent needs for sustainability emphasise three main elements of supply chain performance: financial, social, and environmental (Calzolari, Genovese, & Brint, 2021; Mokhtar et al., 2019a; Genovese et al., 2017a). In other

words, firms' focus on economic performance needs is now level with their environmental and social concerns. To capture these sustainability concerns, an alternative economic paradigm called Circular Economy (CE) has been introduced. While the ultimate objective of the CE is to promote and embrace the notion of restorative industrial systems, it is also designed to form comprehensive supply chain practices (Genovese & Pansera, 2020b; Murray et al., 2017a; Nasir et al., 2016). The CE paradigm focuses on less waste production (or ideally, zero waste production) at every life cycle of a product, where products are used in circularity (recycled, refurbished, or remanufactured) after reaching the expected end-of-life.

Furthermore, CE refers to all efforts aimed at reducing, reusing, and recycling waste generated during the production, circulation, and consumption processes (Naustdalslid, 2014). Singh & Ordoñez (2016) defined CE as "*an economic strategy that proposes new ways to change the current primarily linear consumption systems into circular while attaining economic sustainability and preserving vital quantities of material"*.

Efficient use of resources and waste through closed-loop and regenerative approaches and the avoidance of needless consumption of natural resources (e.g., energy, water, and materials) is the ultimate goal of the CE. The transition to the CE represents a shift from a take-make-dispose economy to a regenerative economy (MahmoumGonbadi et al., 2021). In recent years, the CE concept has gained attention, where it is not only considered a restorative and regenerative economy, but also defined as an economic system that seeks to preserve materials, components, and products at their most useful and valuable state throughout all times (Ellen MacArthur Foundation, 2015).

Overall, the ultimate aims of the CE are to reduce environmental load and improve human well-being (Santagata et al., 2021). The CE has been embedded into supply chain domains through several notions such as circular business models and circular product designs (Geissdoerfer et al., 2018). The notion of the CE is emphasised on facilitating environmental sustainability by leveraging supply chain activities through effective management of end-of-life products, and by promoting reusing, recycling, refurbishing, and replenishing options (Genovese et al., 2017).

In addition, manufacturers have been implementing sustainable manufacturing practices and CE throughout their supply chains to meet environmental concerns, as these practices result in a reduction of waste (Moktadir et al., 2018). CLSC is one of the approaches that has been introduced to integrate the implementation of the CE concept throughout the supply networks (MahmoumGonbadi et al., 2021).

Closed-loop Supply Chain

Closed-loop supply chain initiatives promote the implementation of remanufacturing, where the returned products and parts are recovered, refurbished, and resold in the market. Fleischmann et al. (1997) and Wells & Seitz, (2005) stated that a complete CLSC is an integration between the forward and reverse chains. Using closed-loop initiatives, wastes are collected through the proper routes and returned to the remanufacturing facility for refurbishment (Yuan et al., 2006). CLSC practices ensure sustainable manufacturing processes and environmental practices, where it integrates waste prevention and reduction (Fischer & Pascucci, 2017; Moktadir et al., 2018). As a crucial way

of accomplishing CE and sustainability, CLSC can decrease the reliance on virgin materials, energy leakage, and waste generation (Peng et al., 2020).

CLSC's primary focus is on remanufacturing, refurbishment, recycling, and reverse logistics, which contributes towards the reduction of disposal costs, energy consumption, and ultimately, manufacturing costs (Rajak et al., 2021; Sitcharangsie et al., 2019). Minimising reliance on virgin materials enables businesses to maximise their profits while simultaneously reducing their carbon footprint (Rajak et al., 2021). Moreover, Atasu et al. (2010) explained that remanufactured items created by a firm with a strong brand reputation might have a greater potential for business development.

Therefore, as a critical component of the CE, CLSC contributes to sustainable development, competitive advantage, and economic growth (Huang & Wang, 2019). However, previous studies demonstrated that CLSC activities are constrained by organisational-internal variables such as corporate policies, product design, an absence CLSCs understanding, financial constraints, and external pressures (Schenkel et al. 2019; Kapetanopoulou & Tagaras 2011). Additionally, external pressures encompass several elements such as infrastructure, government regulations, and customers' perceptions (Schenkel et al., 2019; Abdulrahman et al., 2014; Zhu et al., 2014; González-Torre et al., 2010). Hence, the implementation of the CLSC, particularly in emerging economies should consider stakeholder commitment as one of the main variables to facilitate its adoption.

Theoretical Lens: Stakeholder Theory

A stakeholder is *"everyone or everything that can affect or is influenced by an organisation's achievement of its goals"* (Sarkis et al., 2010). As

a result, they have the power to exert pressure on businesses to shape future social and environmental decisions (Schenkel, Krikke, et al., 2015; Parmigiani et al., 2011). Thus, firms must build ties with stakeholders to obtain significant support for their business decisions (Henriques & Sharma, 2005; Shubham et al., 2018).

It is worth noting that organisational theories such as the Stakeholder Theory have been extensively researched. Scholars have devoted extensively to Stakeholder Theory to study firms' competitive advantage and performance. Scholars and practitioners often argue that firms must identify and engage with their stakeholders to obtain external legitimacy (Shubham et al., 2018). As the manager's decision-making and interactions occur within a social network that is influenced by the stakeholders, a theoretical perspective that includes social climate rather than just economic and rational perspectives is considered more holistic and may assist in illustrating firms' behaviours (Scott, 1995).

Similarly, managing CLSC also requires integration among supply chain members, in both forward and reverse orientations, and beyond organisational boundaries (inter-organisational) (Corbett & Klassen, 2006). Stakeholder pressures play a critical role in explaining environmental sustainability initiatives (González-Benito, 2006). Stakeholders can push their supply chain members to consider the ecological and social impact of their activities on the environment and society (Mathiyazhagan, 2021). To achieve a balance of commercial efficiency and sustainability, it is critical for firms to identify the negative effects of their supply chain activities and to redesign their operations in such a way that the environmental impact is mitigated while social

uplift is increased across the supply networks (Mathiyazhagan, 2021; Alizadeh et al., 2020; Kushwaha et al., 2020; Shen & Chou, 2009; Chandiran & Rao, 2008).

Moreover, CLSC activities urge coordination between the focal firms, its primary stakeholders (forward supply chain and reverse supply chain partners), and external stakeholders (such as NGOs and native communities) (Krikke, et al., 2015 Corbett & Klassen, 2006; Freeman, 1984). CLSC activities connect all parties in a supply chain, including internal stakeholders such as employees and business owners, and external stakeholders such as society, customers, retailers, manufacturers, distributors, and suppliers (Mathiyazhagan, 2021). Hence, the execution of CLSC relies on both internal and external stakeholders.

Extant literature has stressed the importance of stakeholders in CLSC adoption and execution (Schenkel et al., 2019; Krikke, et al., 2015; Álvarez-Gil et al., 2007). In the same vein, maintaining positive relationships with stakeholders leads to higher financial gains (Schenkel et al., 2015; Sodhi, 2015; Branco & Rodrigues, 2008). Firms in the supply networks will also participate in social sustainability adoption to conform to the norms and expectations of the stakeholders (government and other external stakeholders) regarding how operations should be conducted, thereby constituting primarily institutional and legitimacy mechanisms to demonstrate firms' adherence (Campbell, 2007). Both of these reasons are viewed as a source of competitive advantage, assisting a firm in differentiating itself from its competitors. Given all that has been mentioned so far, one may suppose that firms have to identify major stakeholder groups, and decide which groups to prioritise (Mitchell et al., 1997).

Customer Pressures

To date, customers require manufacturers to comply and exercise proactive environmental management (Gonzalez-torre, et al., 2010; Lee & Klassen, 2008; Zhu & Sarkis, 2004). Supply chain stakeholders, particularly customers or clients, could influence firms' environmental sustainability practices. Besides, corporate clients are also expecting their suppliers to conform the environmental standards (Delmas et al., 2007). To foster environmental sustainability in supply chain activities, remanufacturing has emerged as one of the prominent approaches to cultivating closed-loop integration. Nevertheless, customers must embrace remanufactured products for an effective closed-loop supply chain implementation.

Following the same line of argument, Muranko et al. (2018) elucidated the need to analyse customers' behaviour in the context of a circular business model. Understanding customers' behaviour and intentions towards closed-loop or remanufactured products are essential in ensuring customers' acceptance of the new and sustainable business model. It is worth noting that previous studies have indicated that perceived environmental benefits and refurbishment awareness positively affect customers' buying intention for refurbished products (Mugge et al., 2017).

The relationship between customers' pressures and commitment on remanufacturing activities is apparent from past studies. In firms' closed-loop adoption, customers are the most salient stakeholders, followed by shareholders and employees (Álvarez-Gil et al., 2007; Mani & Gunasekaran, 2018). Customers' perceptions of remanufactured items are always associated with their purchase intentions and have been identified as a significant moderator

among the relationships between government incentives, product price, and environmental sustainability (Hazen et al., 2017b).

In general, the implementation of closed-loop initiatives would result in cost savings associated with inventory, transportation, and waste reduction while also contributing towards customer loyalty and future revenue development (Rajak et al., 2018). Hence, this study proposes the first hypothesis:

Proposition 1: Customer pressure has a positive influence on closed-loop supply chain implementation.

Top Management Commitment

Top management commitment is a crucial enabler for environmental sustainability (Menon & Ravi, 2021). As closed-loop initiatives are relatively new in emerging economies, top management support is vital in realigning firms' environmental strategies (Sarkis et al., 2010). According to Moktadir et al. (2018), top management leadership and commitment contribute significantly to organisational collaboration, competitive advantages, cleaner technology, and environmental sustainability adoption.

Nonetheless, managerial support and leadership are vital in facilitating employees' understanding, commitment, and comprehension of environmental concerns (Zhu et al., 2008). It is evident from previous studies that top management's vision is the predictor of green operation and supply chain implementation (Menon & Ravi, 2021; Rice, 2003). For example, top management directions are a prerequisite for a firm to embrace closed-loop initiatives in their operations and production activities (Hoejmose et al., 2012). Similarly, Kitsis & Chen (2020) emphasised the importance of top management's

ethical motivations and adherence to closed-loop initiatives as a firm's strategic transformation requires inter and intra-organisational communication and commitment (Zhu & Geng, 2013).

Although several studies indicated that other factors are also significant in fostering closed-loop initiatives such as government regulations, customers' demand, and competitors' green practices, top management support is still prevalent in strategising firms' activities (Ye et al., 2013). A study by Orji et al. (2022) found that 'top management commitment' is ranked first in the organisational category, followed by 'development of skills and competencies' as the most needed antecedents in embracing the CE. Previous studies have identified firms' top management as a critical success factor, particularly in emerging economies, as they have to take responsibility for making strategic decisions for sustainable development, including promoting and striving towards closed-loop practices in supply chain activities.

The lack of top-management support leads to inadequate strategic planning of closed-loop activities throughout supply chain networks, limiting its potential adoption including the limited financial resources and organisational-wide acceptance (Raci & Shankar, 2005; Schenkel et al., 2019). Overall, there seems to be extensive evidence indicating the urge for top management commitment and support in encouraging closed-loop activities and implementation of a firm. Hence, this study proposes that:

Proposition 2: Top management commitment has a positive influence on closed-loop supply chain implementation.

Buying Firms Leadership

While it is apparent that customers (particularly the end users or consumers) play an important role in facilitating the adoption of CLSCs, the contribution of corporate customers (mainly the buying and focal firms) is equally critical. Buying firms should be able to orchestrate closed-loop processes throughout the supply chain networks by taking a leadership role and responsibilities, particularly towards upstream suppliers (Mokhtar et al., 2019a; Defee et al., 2009). Defee et al. (2010) asserted that leadership exhibited by the focal or buying firms is crucial to ensure the penetration of sustainability practices beyond Tier-1 or immediate suppliers. Supply chain leaders are capable to influence their supply chain partners' behaviours and directions towards environmental sustainability (Chen et al., 2021).

The overall effectiveness of closed-loop activities depends on their buying firms' (focal or immediate buying firms) ability to coordinate their suppliers, retailers, and distributors (Mokhtar et al., 2019a; Lenssen et al., 2013). Furthermore, a buying firm should be able to leverage on the transactional approach of leadership, where adherence towards environmental concerns should be stipulated in the agreements or predetermined rules (Chen et al., 2021; Mokhtar et al., 2019b; Yee et al., 2013).

A buying firm (particularly the focal firms) must be able to cultivate shared sustainability goals with their supply chain partners to ensure the execution of closed-loop activities throughout the supply networks (Mokhtar et al., 2019b). The relationships between various stakeholders at different layers of closed-loop activities are frequently less stable and more difficult to form than in a forward supply chain as product returns are based on their life cycle

and the marginal value of time (Vivaldini & Pires, 2016; Guide, Harrison, et al., 2003).

Extant studies revealed the importance of leadership in the supply chain context. For instance, Mokhtar et al. (2019a) found that supply chain leadership is the critical predictor of suppliers' reverse supply chain performance. Similarly, Gosling et al. (2016) elucidated that leadership of a buying firm is a critical aspect of creating sustainable practices in supply chain networks. Hence, the third proposition of this study is:

Proposition 3: Buying firms' leadership has a positive influence on closed-loop supply chain implementation.

Government Support

While the environmental sustainability agenda is actively pursued by developed countries, its penetration into emerging economies is still in its infancy. The realisation of environmental sustainability in emerging economies is often restricted by the lack of facilities and government regulations. Government regulations create a sense of urgency for firms to enhance their efforts in implementing closed-loop activities (Shaharudin et al., 2019). Government regulations, support, and enforcement can facilitate the adoption of sustainability practices in supply chain activities through increased institutional demands and pressures (Zhu et al., 2013).

Nevertheless, green incentives by the governments such as subsidies, tax exemption, and loans for green manufacturing will encourage manufacturing firms to consider and execute closed-loop activities throughout their supply network (Heydari et al., 2017). Moreover, global rules and acceptance

of remanufactured products can intensify its market and closed-loop adoption (Hazen et al., 2017b). Wang et al. (2017) emphasised that government intervention has decreased retail and wholesale prices and, in consequence, boosted the rate of collection of items in CLSCs.

Governments are also responsible to strategise green manufacturing in their respective countries, which will be shared and realised by the local as well as international firms operating in that countries. Governments are also the focal point for the coordination of green budgets and facilities, which foster the development of green and remanufacturing (or closed-loop) facilities, infrastructure, and eco-system (Rezayat et al., 2021). Hence, this study proposes that:

Proposition 4*:* Government support has a positive influence on closed-loop supply chain implementation.

Organisational Performance

While research on the adoption and implementation of CLSC has garnered attention from scholars and practitioners, its impact on organisational performance has rarely been discussed. In general, organisational performance refers to how a firm achieves its financial and market-oriented objectives (Sutduean et al., 2019). It is worth noting that activities throughout the supply networks affect firms' competitive advantage and performance (Sutduean et al., 2019). Effective supply chain management allows firms to reduce their cycle time and inventory cost, and improve their productivity.

Organisational performance is often measured based on three basic components: financial or accounting performance, market-based performance, and operational performance Jahanshahi et al. (2011). However, the recent urge for sustainability has forced firms to strive towards three main performances: financial, social, and environmental (Calzolari et al., 2021; Mokhtar et al., 2019; Genovese et al., 2017). CSCM offers a comprehensive business model that cultivates economic, social, and environmental sustainability, leading towards comprehensive and sustainable business operations and performance. This requirement resonates with the critical application of circular practices in manufacturing and production activities.

Furthermore, CLSC promotes feasibility in recent business models, where the initiative simultaneously improves the product's value and minimises waste. CLSCs provide a competitive advantage since closing the loop entails the development of an effective and efficient reverse logistics system (Olugu & Wong, 2012; Hervani et al., 2005; Rao, 2002). Khan et al. (2020) stated that closed-loop activities throughout the supply network allow firms to have a holistic business model where they will be able to identify customer needs, track new market trends, analyse competing companies' actions, observe innovative (and green) technologies, engage closely with their supply chain partners (upstream or downstream), and leverage the new opportunities for competitive advantage. Hence, this study proposes that:

Proposition 5*:* Closed-loop supply chain implementation *has a positive influence on* organisational performance.

The proposed framework is depicted in Figure 1.

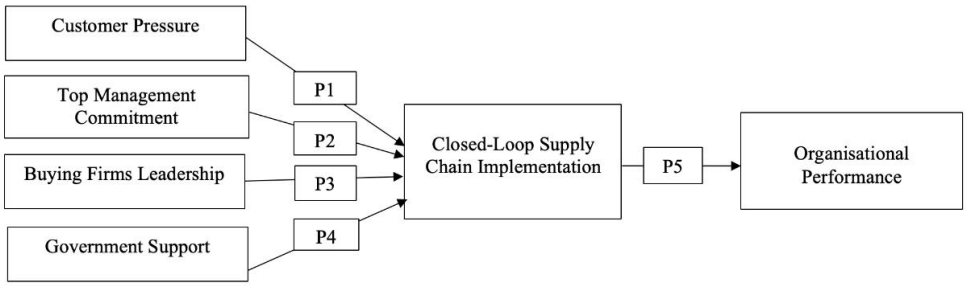

Figure 1. Proposed Conceptual Framework

Conclusion

This study aims to propose a conceptual framework on the integration between three main variables in realising the transition towards CE. In specific, this study aims to suggest a significant positive influence of stakeholder commitment on firms' closed-loop supply chain (CLSC) implementation. This study also aims at proposing a positive influence of CLSC on firms' organisational performance.

Recent economic systems, particularly in developed countries, rely significantly on the notion of Circular Economy (CE). As argued earlier in this paper, CLSCs can be seen as an effective CE realisation for manufacturing firms. However, the role of stakeholders in the manufacturing industry (particularly the role of buying and focal firms, and the governments) is always neglected. While it is apparent that a firm's ability to drive industry-level innovation is enhanced by its stakeholders, empirical examination of several stakeholders is limited (for example, supply chain leadership by the focal firm). Hence, this study proposes an integrated stakeholder commitment as a critical factor in CLSCs implementation.

The propositions offer a roadmap for firms and stakeholders for the transition towards the CE. This study also provides awareness about how crucial CLSCs implementation is for organisational performance (including financial, environmental, and social). Firms' top management will benefit from this study for early planning phases in adopting CLSCs activities throughout their supply networks. Overall, the proposed integrated framework acknowledges the current gaps between stakeholder theory, CLSC, and organisational performance domains.

This research contributes to emerging literature and offers a conceptual framework for CLSC adoption and organisational performance. Prior studies have explored CLSC challenges, drivers, and implementation but the discussion on stakeholder theory in this domain is still in its infancy. Currently, no scholars have investigated the connection between stakeholders, CLSC, and organisational performance in emerging economies. The study also includes an insight of stakeholder roles (and their criticalities) in CLSC adoption and how the CSLC integration can strengthen organisational performance. This study suggests that stakeholders' power, urgency, legitimacy, and responsibilities are required for the radical changes of CLSC, which facilitates the transition towards national CE initiatives (Wang et al., 2022).

This study provides an opportunity to advance our knowledge of CLSC implementation, particularly for emerging economies. In emerging economies, private and public sectors will stimulate environmental sustainability agenda including economic, social, and governance. This includes the role of governments to establish remanufacturing policy, and to be adopted and integrated into their national environmental sustainability roadmap. Thus,

these allow managers and researchers to have a clear view of the antecedents or predictors of business circularity through the lens of the stakeholders.

From a practical standpoint, CLSC stimulates the transition towards the CE. A study from Chiappetta (2020) revealed that integrating CE principles in supply chain activities offers a better organisational performance including its sustainability metrics. Nevertheless, CLSC implementation is closely related to the United Nations' Sustainable Development Goals (SDGs), particularly the sustainable production and consumption domain. Hence, more research is required in this field to examine the implications of CLSC on CE initiatives and global sustainable practices (Bjørnbet et al., 2021; Geissdoerfer et al., 2017).

Many limitations in the current paper have to be improved upon in future research. First, this paper provides a conceptual model based on the review of past literature without empirical results. Future research is recommended to empirically test the relationships proposed in this study. Secondly, this study focuses on limited numbers of stakeholders' commitment (customer, top management, buying firms, and government), where other stakeholders' roles may be neglected. Thirdly, this paper is developed based on the notion of quantitative methods by illustrating the relationships amongst potential variables or constructs. However, future research should not be restricted from developing an in-depth understanding of the phenomenon through qualitative methods.

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Nor Azila Mohd Johari is a Master of Science (Business Management) student at the Faculty of Business and Management, Universiti Teknologi MARA. Her current research focuses on supply chain relationships and sustainability.

Ahmad Rais Mohamad Mokhtar is a senior lecturer at the Department of Technology and Supply Chain Management, Faculty of Business and Management, Universiti Teknologi MARA. He received his Ph.D. in Management (Operations Management) from University of Sheffield, United Kingdom and Master of Commerce from University of Sydney, Australia. His current research focuses on supply chain governance and stakeholders' behaviours.
ORCHID ID: 0000-0002-0300-6884

Nazura Mohamed Sayuti is an associate professor at the Department of Technology and Supply Chain Management, Faculty of Business and Management, Universiti Teknologi MARA. She received her Ph.D. in Operations Management from Royal Melbourne Institute of Technology (RMIT), Australia. Her current research focuses on buyer-supplier relationships.