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The Impact of External Stakeholders' Pressures on the Intention to Adopt Environmental Management Practices and the Moderating Effects of Firm Size

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SMEs in the food manufacturing sector represent a considerable proportion of mainstream businesses in Malaysia. The changes in the lifestyles of Malaysians have led to increased demand for convenience and processed foods, which has led to a growing number of food manufacturing establishments in Malaysia. Nevertheless, the expansion in the food manufacturing sector is followed by a rise in environmental issues. Therefore, to mitigate the impact of food manufacturing activities on the environment, one of the best possible solutions is to implement environmental management practices (EMPs). SMEs may encounter varying levels of pressure from customers, regulatory bodies, and the social community regarding environmental behavior and compliance. This study used the Stakeholder theory to develop the research model. The first objective of this study is to determine the effect of SMEs' external stakeholders, including customer pressure, regulatory pressure, and social community pressure, on food manufacturing SMEs' intention to adopt EMPs. The second objective is to test the effect of firm size as a moderating variable. A structured questionnaire was administered to 367 food manufacturing SMEs in Malaysia. The findings reveal that the SMEs' intention to adopt EMPs was significantly related to customer, regulatory, and social community pressures. The study also discovered that firm size only moderated the relationship between customer pressure and the intention to adopt EMPs. The results provided a more robust understanding of the effect of external factors on SMEs' intentions toward EMPs. Policymakers are recommended to carefully consider those factors to encourage more SMEs to adopt EMPs. SMEs should cultivate a learning and innovative culture to successfully embrace EMPs in a changing business environment.

Introduction

The adverse impacts of business activities on the environment have drawn tremendous attention from authoritative bodies, consumers, economic players, governmental and non-governmental institutions, and the masses around the world who seek corporate moves to support environ-

mental stewardship. Thus, there is a growing expectation from these stakeholders that businesses must take their social and environmental responsibilities seriously and make a beneficial contribution to the communities in which they conduct business (Juholin, 2004). Businesses are encouraged to conduct themselves in a socially responsible manner (Benavides-Velasco et al., 2014) and restructure their

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business practices to lessen the adverse effects of their activities (De Grosbois, 2012). Thus, companies are gradually given more focus on the necessity of making a positive contribution to society on both social and environmental levels while also maintaining financial profitability.

When it comes to promoting or impeding the adoption of environmental management practices (EMPs), stakeholder pressures are critical factors to consider. Stakeholder theory asserts that firm behavior is shaped by the pressures exerted on organizations by various stakeholders. The term "stakeholder" refers to an individual or group of individuals who have the ability to influence or be affected by a company's operations throughout the entire value creation process (Freeman et al., 2010). According to the Stakeholder theory, there should be a match between the values of the firm and the values of its managers. Moreover, the ability of firms to sell their products will be determined by the expectations of stakeholders as well as societal issues (Freeman, 2004). The stakeholder approach focuses on how to manage the company's environment, relationships, and common goals, all of which are important for long-term survival (Freeman & McVea, 2001).

In order to succeed in the global and competitive markets, business entities are bound to respond to the increasing interest in saving the environment through the implementation of EMPs. Therefore, businesses should actively communicate and work with other players in their operational domain by integrating environmental sustainability into their strategic vision and mission. EMPs are activities conducted by businesses to decrease the environmental effect of their operations, as well as the impact of their products and services (Gadenne et al., 2009; Uhlaner et al., 2012). These activities include those required to comply with environmental regulations (reactive tactics) and those that go above and beyond compliance with environmental regulations (proactive strategies). These types of environmental practices can significantly boost essential resource productivity while also lowering environmental costs (Song & Yu, 2018). Additionally, enterprises will be able to more effectively manage objections from the government, international organizations, and society, enabling them to achieve sustainable competitiveness (Calantone et al., 2002).

EMPs have the ability to improve a company's environmental performance by addressing the needs of diverse stakeholders, such as the community and customers (Bengtsson, 2008; Jackson & Apostolakou, 2010), and also enhance its economic performance (Hart & Ahuja, 1996; Klassen & McLaughlin, 1996). Ahmed et al. (2019) stated that environmental practices increase product quality more than the quality management practices used in emerging markets. Fundamentally, when environmental practices are implemented, they result in improved firm performance in the majority of businesses, which has now been unambiguously acknowledged by most organizations globally (Gupta & Gupta, 2020; Rekik & Bergeron, 2017). Furthermore, environmental policies could help businesses improve their public image with customers, suppliers, government agen-

cies, employees, other businesses, and the general public (Esteban-Salvador et al., 2020).

Numerous studies on corporate environmental management practices have been carried out worldwide. Most of the attention on environmental practices studies has been focused on large corporations. However, small and medium-sized enterprises (SMEs) have received scant attention (Johnson & Schaltegger, 2016; López-Pérez et al., 2018). SMEs are estimated to be responsible for approximately 60% of total carbon dioxide emissions (Marshall, 1998) and contribute to social and ethical malpractice (Fernández & Camacho, 2016; Turyakira, 2018). SMEs account for around 60% of commercial waste in the United Kingdom and eight out of ten pollution accidents (Revell & Blackburn, 2004). According to the data from the OECD (2019), SMEs are responsible for around 70% of the EU's environmental impact and 64% of the EU's industrial pollution. SMEs are also responsible for 70 to 98 percent of global manufacturing pollution (Hussey & Eagan, 2007).

A healthy and dynamic market economy cannot function without the participation of SMEs (Hillary, 2004) since they play a crucial role in most industrial systems (Biondi et al., 2000). In Malaysia, for example, SMEs employ approximately 7.25 million people and account for 97.2% of all business establishments in 2020 (Department of Statistic Malaysia, 2021). Given their economic importance, their environmental impacts also merit more attention (Gadenne et al., 2009). Because of their sheer numbers, SMEs have the potential to be key drivers of sustainable innovation or sustainable practices that reduce environmental destruction through their operations (Aboelmaged & Hashem, 2019). Furthermore, due to the collective impact of SMEs on the economic, environmental, and social spheres, their proactive roles are essential for the achievement of the Sustainable Development Goals (SDGs) (Khattak, 2020). While SMEs' individual environmental footprints are perhaps less significant than those of large businesses, their combined effects can be greater. Therefore, diminishing the negative impacts of SMEs' business activities on the environment could be a step toward a sustainable economy.

Recently, the food system has been recognized for its activities that can enormously impact the environment. Globally, more than a third of all anthropogenic greenhouse gas (GHG) emissions are attributed to the food system. Food system emissions, including everything from land-use change and agricultural production to packaging and waste management, were predicted to have reached 18 billion tonnes of carbon dioxide equivalent in 2015 (Food and Agriculture Organization of the United Nations (FAO), 2021). In 2011, FAO estimated that almost one-third of the world's food produced each year is lost or wasted. Food waste is predicted to generate 3.3 billion metric tons of CO₂ equivalent GHG emissions discharged into the atmosphere (FAO, 2013). Food waste is a burden to waste management systems and contributes to the aggravation of food insecurity. In addition, food waste contributes significantly to the three global crises of climate change, nature and biodiversity loss, pollution, and waste. Due to this, one of the SDGs

is to reduce food waste and food loss by half by 2030 (Forbes et al., 2021).

An Overview of EMPs and Food Waste Problems in Malaysia

Based on the data from the Climate Change Performance Index (CCPI, 2021), the environmental quality of Malaysia is falling from a level of 56 in 2021 to a rank of 57 in 2022 and therefore remains in the CCPI bottom 10. Like those of many other countries in the world, Malaysia's government has made a concerted effort to encourage ecologically responsible behavior among its citizens (Economic Planning Unit, 2010). The government and non-governmental organizations (NGOs) are attempting to promote this behavior through go green programs. In Malaysia, there are several well-known campaigns such as "No Plastic Bag Day", "3R campaign (Reduce, Reuse and Recycle)", and "Environmental Education", and there are also campaigns organized by non-profit groups like World Wildlife Fund (WWF)-Malaysia and the Malaysia Nature Society, which educate citizens on how to reduce their environmental footprint (Hosseinpou et al., 2015).

EMPs are still new in Malaysia, especially among the SMEs in the food manufacturing sector, with only a small number of enterprises adopting such practices. Based on the data from Malaysia's Economic Census (2016), as of 2015, 8,292 establishments were recorded in the manufacture of food products and beverages sub-sector in Malaysia. This figure represents 17.4% of the establishments in the manufacturing sector, which makes them the largest group of establishments in the manufacturing sector in Malaysia. Previously, studies in the Malaysian context have reported that the food sector produces significant amounts of food waste, and it is estimated to increase in the coming years. According to the Malaysia Solid Waste Management and Public Cleansing Corporation, the industrial, commercial, and institutional sectors generate about 31.4% of food waste, whereas the household sector produces about 44.5%. Food waste has an impact on the environment in the form of GHG emissions, land occupation footprint, climate change, water footprint, and biodiversity (FAO, 2021).

Food waste is primarily characterized by its high density, which corresponds to a high concentration of biodegradable organic substances and moisture content, resulting in GHG production such as methane (CH₄) and carbon dioxide (CO₂). When decomposing in landfills, these two types of GHG can cause severe impacts on global warming and climate change (Hegde et al., 2003). GHG emissions have been projected to rise by 50% by 2020 due to the dependency on landfills as waste disposal techniques (MEAKO, 2015). Furthermore, the food sector also consumes a greater amount of water for each ton of product. It is well known that wastewater from the food manufacturing industry contains high biochemical oxygen demand (BOD) and suspended solids (SS). Onet (2010) noted that wastewater constituents are difficult to predict because of the seasonality in food processing and post-harvesting and the BOD and pH differences between meat, milk, fruit, and vegetable products.

Problem Statement

In line with Malaysia's commitment to reduce its economy-wide carbon intensity (against GDP) by 45% by 2030 at the United Nations (UN) Climate Change Conference 2021 (COP26) in Glasgow, this study serves as a good starting point for the government to develop a systematic strategy to ensure that EMPs are implemented effectively in the food manufacturing sector. It is clear that food manufacturers must adopt EMPs. However, at the moment, it is unknown whether Malaysian food manufacturing SMEs will embrace the concept of EMPs. According to previous research findings, despite the fact that Malaysians have a moral and social responsibility to protect the environment, only a small number of the population takes their obligations seriously. Business organizations, government agencies, and society all play a part in preserving the environment. Nevertheless, the opposite is true in Malaysia, where business organizations and society appear to place greater emphasis on profits than on environmental conditions (Rajendran et al., 2019). Moreover, some environmental certifications, such as ISO 14001, can be expensive, ranging from US \$24,000 to US \$128,000 per site, with yearly maintenance costs ranging from US \$5,000 to US \$10,000 depending on the size and nature of the firm (Nishitani, 2010). As a result, some SMEs may be segregated from the rest because they cannot afford the costs.

Numerous factors have been explored in order to justify which variables serve as a basis for a company, particularly large and multinational corporations, to operate in an environmentally responsible manner. Until recently, SMEs drew increasing attention from scholars interested in their behavior with regard to environmentally friendly activities. Several studies related to the adoption of environmental practices have been conducted in Malaysia, for example, in manufacturing SMEs (Norsiah et al., 2018; Yacob et al., 2013), herbal-based SMEs (Rezai et al., 2016), and logistic companies (Irwan et al., 2019). Nevertheless, studies related to the influence of external stakeholders and the perception of owner-managers towards EMPs adoption among food manufacturing SMEs remain unexplored. Moreover, as far as the author's knowledge is concerned, there is very limited evidence about whether firm size affects SMEs' intention to adopt EMPs. As a result, more in-depth research into whether the size of a firm affects SMEs' intentions to adopt EMPs might be beneficial. This study seeks to fill a gap in the literature by investigating the influence of external stakeholders on the SMEs' intention to adopt EMPs and examining the moderating effect of firm size in the context of Malaysian food manufacturing SMEs.

This study is critical to examine the perceptions of food manufacturing SMEs regarding the extent to which external stakeholders influence their decision to adopt EMPs. Customer pressure, regulatory pressure, and social community pressure could be the determinants that affect the adoption of EMPs among the food manufacturing SMEs in Malaysia. Furthermore, this study also endeavors to identify the moderating effects of firm size on the intention to adopt EMPs. Understanding how these external stakeholders affect

SMEs' intention to adopt EMPs would be important in prioritizing the efforts of the government and relevant stakeholders in promoting EMPs and eliminating the possible obstructions that hinder the adoption of EMPs.

Literature Review

Environmental Management Practices and SMEs

EMPs are defined as organizational actions and decisions aimed at reducing negative environmental consequences by developing and implementing new or improved goods, processes, organizational routines, and/or management systems (González-Benito & González-Benito, 2005). In other words, EMPs are a set of manufacturing activities to enhance the efficiency of waste disposal and reduce asset utilization. These practices encompass environmental management systems, environmental performance evaluation, environmental policy, R&D, total quality management, product life-cycle assessments, environmental audits, and environmental accounting (Yang et al., 2015). Hajmohammad et al. (2013) defined EMPs as the number of resources spent on the development of practical knowledge and pertinent activities contributing to the reduction of pollution at the source, which includes the implementation of environmental management systems (EMS) such as ISO 14001 and efforts to reduce waste and recycle materials.

Poor industrial and business practices among SMEs are adversely affecting the natural environment and are becoming an ongoing debate in global economies. There is a growing literature highlighting the importance of SMEs' engagement in EMPs due to their accumulative negative externalities (Chan, 2011; M. Jamaludin & Yusof, 2015; Kasim, 2009). Yang et al. (2015) stated that there are three primary factors that motivate enterprises to adopt EMPs. The first is attributable to environmental regulation. Compliance with environmental regulations is the only way for a company to be considered "legitimate" and avoid penalties (Hunt & Auster, 1990). The second factor is economic interest. Apart from mitigating the environmental impact of organizations' activities, EMPs also provide economic benefits, for instance, generating recycling revenue, increasing sales, gaining a first-mover advantage, improving social reputation, and increasing product quality (Porter & van der Linde, 1996; Rennings et al., 2006). The third factor is a competitive advantage. In order to gain a competitive advantage in the marketplace, strategic management theory suggests that EMPs can be one of the strategies to be adopted. For instance, reducing production costs, improving resource utilization, and product redesign (Weng et al., 2015).

Theoretical Background and Hypotheses Development

Stakeholder theory is corporate ethics and organizational management theory that emphasizes morals and values to sustain societal norms and standards by incorporating ethical concerns based on stakeholder obligations and

interests (Freeman, 1984). The primary stakeholder group comprises those stakeholders who have the most significant influence on a company's environmental strategy, such as employees, customers, suppliers, and shareholders (Buysse & Verbeke, 2003). Meanwhile, the secondary stakeholders consist of regulators, competitors, communities, NGOs, support organizations, the media, and other institutional forces (Campbell, 2007). The survival, expansion, and profitability of a firm are directly tied to its primary stakeholders (Buzzelli, 1991). In comparison, the secondary stakeholders can help the firm to improve the firm's social legitimacy and play a big role in getting the firm to start acting more sustainably (Garriga & Melé, 2004; Porter & Kramer, 2006).

According to Stakeholder theory, the actions promoted by regulatory stakeholders can be used to understand the pressure exerted by stakeholders (for example, governmental regulators, trade associations, and competitors), the community (such as environmental organizations and society), and other primary organizations' stakeholders (including customers, suppliers, shareholders, and employees) (Steurer, 2005). The theory emphasizes both an organization's accountability and the rights of stakeholders. An organization must meet the expectations of all stakeholders, not just the shareholders (Fernando & Lawrence, 2014; Freeman & Dmytriyev, 2017). Stakeholder theory asserts that the interests of stakeholders are of the utmost importance to organizations and that the success of an organization depends on how well it meets the needs of these stakeholders (Husillos & Alvarez-Gil, 2008).

Stakeholder pressure refers to a stakeholder's ability to exert influence over a firm's decisions (Helmig et al., 2016). In order to secure long-term business sustainability, it will depend on how owners-managers carry out micro-level actions (Del Giudice et al., 2017), which assist them in recognizing, managing, and responding to stakeholders' claims (e.g., Freeman, 2010; Helmig et al., 2016). In addition, firms' absorptive capacity is favorably influenced by stakeholder pressure (from clients, the government, employees, etc.) (Aboelmaged & Hashem, 2019; Singh et al., 2020). Furthermore, stakeholder pressure also encourages businesses to take a proactive approach in building and revitalizing their resources and capacities since it is necessary to put environmental practices into effect (Murillo-Luna et al., 2011; Sarkis et al., 2010) and improve customer-enterprise relationships (Caputo et al., 2018).

The Stakeholder theory sheds light on how organizations respond to the needs of EMPs. With the increased severity of climate change and carbon emissions, stakeholders increasingly hold management accountable for environmental management decisions. In order to extend the Stakeholder theory to the current study context, it is essential to be familiar with the relationship between stakeholder pressures, EMPs, and food manufacturers' environmental concerns. The way businesses interact with the natural environment is becoming increasingly important as a criterion for corporate legitimacy. Companies run the risk of breaching their implicit social contract with their stakeholders if the stakeholders perceive that they are operat-

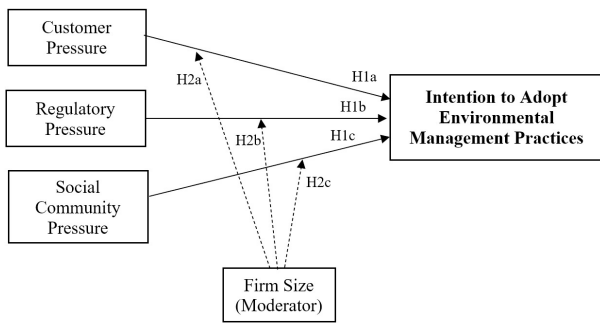


Figure 1. The Research Model

ing in ways that are contrary to the values that underpin the contract (Deegan, 2002). Among the examples of this type of activity are when a company engages in activities that harm the environment or present environmental risks or outcomes that are unacceptable to stakeholders (Hrasky, 2011). Thus, the adoption of EMPs is an approach for businesses to demonstrate to stakeholders that their existence and operations are legitimate while also enhancing their firm value by taking stakeholder interests into account.

In Malaysia, food manufacturers are operating within a coordinated institutional framework. Therefore, external stakeholders that may have the ability to force them to implement EMPs can be recognized. In Malaysia, the Department of Environment is the main regulatory body that promotes the implementation of EMPs by exerting coercive pressure on business entities. In different circumstances, normative pressures are imposed by customers and the social community. As the decision-makers, the food manufacturers or SMEs' owner-managers play a large part during the EMPs' implementation. Food manufacturers have the right to decide whether to execute EMPs or not after assigning an instrumental value to the environment based on the pressure they observe from their internal and external stakeholders. In this study, the pressures from regulatory bodies, customers, and the social community are expected to influence the food manufacturing SMEs' intention to adopt EMPs.

Stakeholder theory is used to justify the formulation of hypotheses. This study is intended to examine the factors that influence the intention of SME owner-managers to adopt EMPs among food manufacturing SMEs in Malaysia. [Figure 1](#) shows the research model for the present study. In this model, the exogenous factors included customer pressure, regulatory pressure, and social community pressure, whereas the endogenous variable was the intention to adopt EMPs. In addition, firm size was employed as a moderating variable to examine the relationship between the exogenous variables and the intention to adopt EMPs.

Customer Pressure

Environmental sustainability has recently attracted the attention of industry players and academicians in Malaysia. Local businesses are aware that environmental practices have an impact on the long-term viability of the environ-

ment. As consumers become more environmentally conscious, there is an increase in their expectations placed on business firms to use environmentally friendly materials in their products. In order to encourage environmentally-friendly behavior, the Malaysian government has introduced a variety of environmentally friendly products to the market. Several schemes and labels are available on the market for green food products. Malaysia's Ministry of Agriculture (MOA) has established various green agricultural production schemes and certifications for crops, livestock, and fisheries (Nezakati et al., 2014). For example, the Good Agriculture Practice (GAP) scheme aims to attract farmers, animal and fish breeders to achieve the milestones of sustainable agriculture. The MOA established the Malaysian Organic Scheme (SOM) in 2003 to accredit farmers who operate their farms in accordance with the national organic standard, MS 1529:2001. Another scheme is the Malaysian Good Agricultural Practices (MyGAP), which aims to certify farms that implement environmentally friendly farming practices while also protecting the welfare and safety of their employees in order to produce high-quality, safe, and edible crops.

Hassan et al. (2010) discovered that, despite having stronger environmental concerns, Malaysians found it challenging to become green. Paim et al. (2013) noted that some customers might choose not to go green because they are unaware of the consequences of their actions. Consumers in Malaysia have a high level of environmental awareness, yet their purchases of environmentally friendly products are not as successful as they may be (Wijekoon & Sabri, 2021). It is clear from these situations that some consumers prefer product convention despite the fact that conventional products have negative environmental consequences (FuiYeng & Yazdanifard, 2015).

A large number of studies have found that customers can influence SMEs' behavior toward EMPs through compliance-driven demand, green demand, and the dynamics of customer organizations. The proactive demand for environmentally friendly products, processes, and services can contribute to SMEs' growth in environmental practices (Hsu et al., 2013; Muazu et al., 2017; Shields & Shelleman, 2015). Consumers have become more interested in and conscious of how businesses interact with society, the economy, and the environment (Carroll, 2015). Customers who currently adopt environmental practices in their organization would have the tendency to force the producers to adopt the environmental practices too (Lee, 2008). Thus, a business organization may undergo growing pressure from its customers to increase its environmental performance (Delmas & Montiel, 2009). In addition, consumers who portray strong environmental concerns have more probability of participating in green purchasing behavior (Lin & Huang, 2012). In view of this fact, customers' purchase decisions may depend on the role of firms in society and the level of their environmental responsibility (Marin et al., 2009; McEachern et al., 2010). According to Vizcaíno et al. (2020), companies that are committed to supporting sustainable practices may gain positive evaluations from cus-

tomers, which affects their patronage intentions and brand reputation.

From the EMPs' perspective, customer pressure refers to the requirements and requests of end consumers and business customers to improve their performance in the environmental and social areas (Hwang et al., 2016). The present study argues that customer pressure positively correlates with firms' environmental activities. Anton et al. (2004) found that pressure from customers, investors, and the public has driven the adoption of environmental practices. Studies by Hsu et al. (2013) and Muazu et al. (2017) also discovered a significant association between customer pressure and green practice adoption. They confirmed that customer pressure is the primary determinant for adoption. In view of the previous research, this study hypothesized that:

H1a: Customer pressure has a positive impact on the intention to adopt EMPs.

Regulatory Pressure

Government regulation refers to official mechanisms or a form of coercive regulatory isomorphism enforced by regulatory bodies that require individual or organizational compliance (Hwang et al., 2016). This study uses Stakeholder theory to explain that when EMPs are widely used and seen as important in the institutional field, food manufacturing SMEs will adopt them as a way to become more legitimate. Compliance with environmental laws allows a company to prevent financial losses caused by fines or temporary business closures and loss of intangible benefits such as client perception of environmental management capability (Céspedes-Lorente et al., 2003).

Another theory that is important to explain the connection between regulation and EMPs is the Institutional theory. This theory contends that organizational decisions are motivated not only by the efficiency of rational goals but also by determinants related to social and cultural concerns, as well as concerns about legitimacy. The theory asserts that firms are becoming more similar because of isomorphic and legitimacy pressures (DiMaggio & Powell, 1983). In this respect, Institutional theory is useful to clarify in what way changes in regulations, technological improvements, and social values will also affect firms' decision-making processes relating to environmental activities and performance (Glover et al., 2014). In the context of environmental practices, the standards, laws, procedures, and incentives established by the government will encourage firms to become more responsible toward the environment. Environmental regulation is the most critical factor influencing SMEs' environmental management efforts. As a result, rather than voluntary participation, compliance serves as the primary determinant behind SMEs' uptake (Patton & Worthington, 2003).

In Malaysia, the execution of the Environmental Quality Act is hampered by concerns relating to jurisdiction and by-law enforcement. As a result of a lack of cooperation between the federal and state governments responsible for environmental protection and sustainable development, it

has been challenging to implement the legislation, particularly regarding the licensing of projects that risk the environment and wildlife (Ainul Jaria, 2005). Despite the fact that environmental protection is the most important priority, as stated by the environmental law when economic development and long-term environmental sustainability are in conflict, economic development still takes precedence. The awareness and capacity of regulatory authorities to deal with environmental violations are relatively weak, especially with burdensome procedures to enforce the law. In some cases, the detection of violations does not always lead to action (Botelho et al., 2003). The amount of the fines is relatively small, and the offenders are under no obligation to make good on the damage they've caused. Some businesses prefer to pay a fine rather than invest in ecologically friendly sewage discharge systems since it is less expensive.

A survey conducted by Zailani et al. (2012) revealed that pressure from the regulatory body is essential to encourage the adoption of EMPs, especially on eco-design and the use of recycled materials in production. Another study by Hsu et al. (2013) showed that regulatory pressure might serve as a powerful impetus to urge manufacturing firms to engage in green supply chain initiatives. In a similar vein, Shairullizain et al. (2013) and Deraman et al. (2017) found that regulatory pressure was an essential factor for EMS implementation in SME hotels. Drawing upon the previous literature, this study expects regulatory pressure to positively influence Malaysian food manufacturing SMEs to adopt EMPs. Hence, this study hypothesized that:

H1b: Regulatory pressure has a positive impact on the intention to adopt EMPs.

Social Community Pressure

Stakeholder theory states that environmental groups, neighborhood groups, the media, and labor unions are examples of social communities (Hoffman, 2000). In either direction, these groups can mobilize the public to support or oppose a business's environmental policies (Benn et al., 2009; Roome & Wijen, 2006). Companies that ignore their stakeholders' demands run the risk of facing public protests (Hoffman, 2000). In some circumstances, community stakeholders may spread information encouraging consumers to buy products from competitors who have exhibited a greater commitment to environmental stewardship. Thus, these stakeholders give a "social license" for businesses to operate and may be important elements in influencing an organization's decision to implement particular practices (Gunningham et al., 2004).

Previously, firms used to be less likely to be impacted by the social community, which they either dismissed or disregarded (Henriques & Sadorsky, 1999). However, in light of growing public awareness of environmental sustainability issues, firms can no longer ignore the social community. They have the power to impact firms' environmental approaches both directly and indirectly through eliciting public opinion in support or opposition to their environmental strategies (Benn et al., 2009). Social communities can be a valuable source of information because they often know

more about environmental issues in supply chains than companies themselves (Maria Jesus Saenz et al., 2015). Preliminary studies have shown that countries with a high level of environmental concern will advocate high environmental standards. Therefore, in order to maintain legitimacy, firms in these countries are under pressure to follow environmental regulations. Firms that refuse to conform may expose themselves to being criticized by social communities, such as activists, the media, and NGOs, and be in jeopardy of losing their reputations and credibility (Ortiz-de-Mandojana et al., 2014).

This study focused on the influences of environmental NGOs and environmental activists on SMEs to adopt EMPs in Malaysia from the perspective of food manufacturing SMEs' owner-managers. Malaysian Environmental NGOs (MENGO), which was established in 2001 under Danish International Development Assistance, is a coalition of 19 NGOs (such as the Malaysian Nature Society (MNS) and World Wide Fund for Nature Malaysia (WWF)). MENGO has formed a platform to promote environmental sustainability at the local, national, and global levels. The Malaysian government has made significant progress in addressing the issue of environmental problems, but the engagement of NGOs has remained minimal in the country (Shaharudin et al., 2020). For instance, NGOs have previously worked to promote awareness and act as a voice for the government on problems such as public trust in Lynas (H. Jamaludin & Lahiri-Dutt, 2017) and cutting down on carbon emissions (Hezri, 2016; Shaharudin & Fernando, 2017).

According to the literature, NGOs in developed countries are more active and powerful than those in developing countries (Lück et al., 2016). The power disparity among NGOs in developed and developing countries has negatively impacted the ability to secure the protection of the environment. For instance, at the Paris Climate Talks, representatives from developed countries criticized developing countries for taking no proactive steps to reduce carbon emissions. Meanwhile, the developing country representatives blamed developed countries for doing little to assist other countries in addressing the global climate threat (Puppim de Oliveira & Jabbour, 2017). A solution to this problem does not seem possible other than making each country do better at protecting the environment and having more influential stakeholders such as NGOs to safeguard the environment.

Numerous research has been executed on the dimension of green and environmental practices. Among other studies, a survey of 200 corporate general counsels revealed that more than half stated that "pressure from community activists had influenced their companies' conduct and sometimes forced pollution reductions" (Lavelle, 1993). According to the findings of an empirical study, the choice to implement an environmental strategy by a company was positively affected by pressure from community groups (Henriques & Sadowsky, 1996). Hwang et al. (2016) discovered a statistically significant positive impact of social community on the adoption of green supply chain practices in the Taiwanese semiconductor industry. Henriques & Sadowsky (1999) and González-Benito & González-Benito

(2005) agreed that the media has a positive impact on the company's environmental strategy. Therefore, this study hypothesized that:

H1c: Social Community Pressure has a positive impact on the intention to adopt EMPs.

Firm Size as Moderating Variable

Firm size refers to "the total number of employees in the organization" (Roxas et al., 2013). Firm size was frequently pointed out as a powerful factor influencing a firm's predisposition to adopt an innovation due to its ability to obtain abundant innovative resources and greater willpower to sustain and enhance performance (Lopez-Valeiras et al., 2016). In the context of EMPs adoption, prior studies have pointed out that medium-sized and large-sized firms spend a substantial amount of money to invest in innovation since they have more ability to obtain financing and diversify risks (Zemplerová & Hromádková, 2012).

Small firms with more than 20 employees, particularly those in the manufacturing industry, are more likely to incorporate environmental issues into their decision-making processes. "Larger" small firms may have more economic momentum, which means they have reached a degree of stability above a start-up. They are able to deal with decision issues that extend beyond survival. When start-up firms have progressed past the first few months or years of their existence, they may consider environmental issues in their business strategy (Becherer & Helms, 2014). Larger firms also encounter greater environmental pressures than smaller firms (Vanpoucke et al., 2014). In contrast, small firms are commonly against the idea of adopting environmentally responsible activities for several reasons, including: (i) unavailability of resources (Aragon-Correa et al., 2008) impedes them from acting accordingly to stakeholders' demands (Uhlener et al., 2012); (ii) investment in environmental practices appears impossible to rationalize from the perspective of economies of scale and negligible market shares (Bianchi & Noci, 1998); (iii) small firms are less noticeable to the public and media, hence, they experience a certain level of anonymity against their external stakeholders, including environmental activists (Henriques & Sadowsky, 1996). This factor further justifies their lack of engagement in environmental practices compared to the medium and larger-sized firms.

Darnall et al. (2010) underlined that previous studies had paid little attention to the moderating effects of firm size in the relationship between stakeholder pressures and proactive environmental practices adoption. Firm size is believed to moderate the relationship between stakeholder pressures and the adoption of proactive environmental practices. Smaller firms have the ability to attract customers and employees from their neighborhoods. A study by Sánchez-Medina et al. (2015) confirms that firm size has a moderating effect on the stakeholder – EMPs relation. The finding concluded that the hotel's degree of visibility to their stakeholders increased alongside the hotel's size and signified a great vulnerability to their demands. Besser (1999) noted that, in comparison to large firms, small firms

are more receptive to stakeholder concerns since a good reputation is a fundamental determinant of their business success. It is particularly the case at the local level, where the survival of small firms is typically associated with their regulatory compliance and acceptance by local stakeholders (Perrini, 2006). Furthermore, most small business owners can easily incorporate environmental obligations into their firms' overall mission (Larson, 2000).

Based on the previous literature, the moderating role of firm size was rarely examined, particularly in the dimension of EMPs. In this regard, more studies analyzing the role of firm size as a moderator variable will help to shed more light on the nature of the relationship between customer, regulatory, and social community pressures, and the intention to adopt EMPs. Thus, this study anticipated that firm size moderates the relationship between these determinant factors and SMEs' intention to adopt EMPs.

H2a: Firm size moderates the relationship between customer pressure and the intention to adopt EMPs: Customer pressure has a more significant positive impact on the intention of small-sized firms to adopt EMPs than medium-sized firms.

H2b: Firm size moderates the relationship between regulatory pressure and the intention to adopt EMPs: Regulatory pressure has a more significant positive impact on the intention of small-sized firms to adopt EMPs than medium-sized firms.

H2c: Firm size moderates the relationship between social community pressure and the intention to adopt EMPs: social community pressure has a more significant positive impact on the intention of small-sized firms to adopt EMPs than medium-sized firms.

Methodology

Sample Selection

This study was conducted in Malaysia, and the sample companies were drawn from two directories, namely, (i) SMEs Corporation Malaysia Directory; and (ii) Malaysia Food Business Directory. The target respondents for this study were selected using a criterion sampling method. The survey instruments were sent electronically to the respondents' email addresses. Several requirements must be met by the companies participating in this study. First, the sample consisted of companies classified as small-sized (number of employees from 5 to less than 75) and medium-sized (from 75 and not exceeding 200). Second, the business must have been in operation for at least a year. Third, the primary informant or respondent must be the company's current owner, senior management, or manager. Fourth, the key informants must be actively involved in the company's administration, have decision-making authority inside the company, and are familiar with the company's environmental activities.

Of the 1,165 food manufacturing companies that participated in the survey, 367 companies completed the questionnaires, resulting in a response percentage of 31.5%. G*Power estimates that this study would require 64 partic-

ipants in each group (N = 128) in an independent samples t-test in order to detect an effect size of Cohen's $d = 0.5$ with 80% power (alpha = .05, two-tailed) and 80% power (alpha = .05, two-tailed). Following Cohen's (1988) recommendation, the minimum effect size of interest was fixed at $d = 0.5$.

Non-Response Bias

This study analyzed the non-response bias using SPSS by conducting an independent sample t-test. This test compared two sample means of early and late responses for all the variables tested in this study. According to the findings, there were no significant differences between early responding and late responding firms (Table 1).

Variable Measures

This section discusses how the constructs specified in the research framework are operationalized in this study. Table 2 provides a summary and descriptive statistics on all the questionnaire items used to measure the main constructs. In order to determine the constructs' discriminant validity, Heterotrait-monotrait (HTMT) ratio was calculated. As seen in Table 3, all HTMT ratio values were below the recommended value of 0.85 (Kline, 2011). This shows that the data has no issues with discriminant validity, which confirms the construct's discriminant validity.

Customer pressure, consisting of five items, was measured based on the owner-managers perception of whether their customers require them to improve environmental performance and whether their customers are increasingly demanding environmentally friendly products. Regulatory pressure was evaluated using six items to capture the owner-managers perception of the environmental regulations, legislation, and rules enforced by the government or authoritative body towards the food manufacturing sector. Social community pressure is comprised of five items that assess owner-managers perceptions of whether or not the social community, such as environmental organizations, environmental activists, and the media, has strategized environmental campaigns and demonstrated pressure on them to adopt EMPs. Eight measures were used to assess the intention to adopt EMPs. These items assess the likelihood of owner-managers incorporating EMPs into their business activities in the future. All responses were analyzed using a seven-point Likert scale, ranging from "1=strongly disagree" to "7=strongly agree".

Control Variable

The control variable chosen in this analysis is firm age. The pressure and support from SMEs' external stakeholders are associated with the intention of SMEs to adopt EMPs differently, particularly when SMEs operate for different time periods. The impacts of customer, regulatory, and social community pressure are expected to be greater for younger SMEs than for their mature counterparts. Previous literature broadly acknowledges that young firms change more often than old firms (de Figueiredo et al., 2015). New

Table 1. Assessment of Non-Response Bias using Independent Samples T-Test

Variables	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Customer Pressure	0.160	0.689	1.087	159.169	0.278
Regulatory Pressure	1.811	0.179	-0.598	171.224	0.550
Social Community Pressure	0.042	0.837	0.681	161.844	0.497
Intention to Adopt Environmental Management Practices	0.018	0.893	-0.283	162.061	0.778

Note: Equal variances not assumed

Table 2. Description and Descriptive Statistics of the Questionnaire Items

Construct	Description	Item	Reliability Scores	References
Customer Pressure	Pressure from customers to adopt EMPs perceived by SMEs	5	0.803	Ho <i>et al.</i> (2014); Al Mamun <i>et al.</i> (2018); Gadenne <i>et al.</i> (2009)
Regulatory Pressure	Pressure from the government or regulatory bodies to comply with environmental regulations	6	0.938	Botelho <i>et al.</i> (2003); Cai <i>et al.</i> (2013); Ho <i>et al.</i> (2014)
Social Community Pressure	Pressure from environmental NGOs and environmental activists, to adopt environmentally responsible behavior.	5	0.924	Hwang <i>et al.</i> (2016); Gonzales-Benito & Gonzales-Benito (2006); Maria Jesus Saenz <i>et al.</i> (2015)
Intention to Adopt EMPs	The degree to which SMEs owners-managers have the intention to implement EMPs in the future	8	0.935	Viduriati (2015); Raja Zuraidah <i>et al.</i> (2012)

Table 3. Descriptive Statistics and Discriminant Validity (Heterotrait-Monotrait Ratio)

Constructs	Mean	SD	CP	RP	SCP	INT
CP	4.647	6.031				
RP	4.899	8.216	0.499			
SCP	4.338	7.346	0.402	0.599		
INT	5.152	10.062	0.511	0.735	0.597	

Note: CP: Customer Pressure SCP: Social Community Pressure
INT: Intention to Adopt EMPs RP: Regulatory Pressure

and young firms have more tendencies and are more susceptible to participating in innovation activities and environmental practices (Hockerts & Wüstenhagen, 2010).

Nevertheless, by looking at the opposite point of view, Zahra *et al.* (2000) proposed that firms' external stakeholders, such as customers, suppliers, and creditors, are unwilling to cooperate with new or young firms. Thus, this limits their ability to obtain resources and deters their determination and efforts to participate in innovation activities, which in the context of this study are EMPs. Therefore, if firm age is taken into consideration and included in the model, it may have an impact on the intention of SMEs to adopt EMPs.

Data Analysis Techniques

This study used structural equation modeling (SEM) analysis using AMOS Graphic Version 23 to analyze the survey data. In dealing with SEM, two main procedures need to be performed. First is validating the measurement model by conducting confirmatory factor analysis (CFA) to assess the unidimensionality, validity, and reliability of latent constructs. The second is to model those constructs into a structural model to evaluate the hypotheses of the study.

Results

Descriptive Information

Most of the enterprises operated as private limited companies (52.6%), followed by partnerships (30.6%), sole proprietorships (14.1%), and limited companies (2.7%). More

than half (55.9%) of the SMEs were established between 2001 and 2010. Another 25.6% were established between the years 1991 and 2000. The companies were considerably small in terms of size by viewing the number of full-time workers. The majority of the enterprises (71.5%) were categorized as small-sized, as they employed between 5 and 75 workers, while 28.5% of the enterprises were classified as medium-sized as they hired between 75 and 200 workers.

As for the estimated annual sales revenue, 67.2% of the SMEs reported an annual sale ranging from RM300,000 (US \$71,727) to RM15 million (US \$3.59 million), whereas 21.5% recorded an annual sale ranging from RM15 million (US \$3.59 million) and RM50 million (US \$11.95 million), while the remaining 11.3% generated annual revenue of less than RM300,000 (US \$71,727). Of the 369 enterprises being studied, most of them operated within the local market (77.6%), which means that these SMEs did not export their food products to other countries. On the contrary, 22.4% of the SMEs who participated in this study have successfully penetrated the global market by exporting their products to foreign countries.

Common Method Bias

This study analysed common method bias using Harman's single factor test. In this test, the percentage of variance attributable to the first factor is compared to a cut-off value of 0.5. According to the results, there is no evidence of common method bias in this data since the total variance retrieved by one factor is 47.841%, which is less than the required threshold of 50%.

Confirmatory Factor Analysis (CFA)

Before testing the effects of firm size as a moderator variable on the relationship between EMPs determinants and the intention to adopt EMPs, confirmatory factor analysis (CFA) was carried out to measure the reliability and validity of the measurement model. There are three exogenous constructs proposed in the measurement model of this study, namely, (i) customer pressure; (ii) regulatory pressure; and (iii) social community pressure. The intention to adopt EMPs becomes the endogenous construct.

Reliability and Validity Analysis

The results of the CFA for the initial measurement model specify that the goodness-of-fit indices have fulfilled the acceptable threshold levels. Bentler (1990) and Bentler & Bonett (1980) suggested GFI, CFI and TLI values higher than 0.90; Browne and Cudeck (1993) suggested RMSEA lower than 0.08 as a good fit. The detailed results are as follows: GFI = 0.913, CFI = 0.970, TLI = 0.966, RMSEA = 0.047. However, three items in the latent constructs have factor loadings of less than 0.5, as recommended by Hair et al. (2010). Therefore, these items were removed, and CFA has performed again on the revised model. Table 4 presents the results of the CFA for the revised model. The table shows that all items have achieved factor loadings of more than 0.5, ranging from 0.659 to 0.883. The goodness-of-fit in-

indices for all the revised measurement models were obtained and presented as follows: CFI = 0.972, TLI = 0.968, RMSEA = 0.049. These indices show that the model met the satisfactory level of improved fitness, which shows that the construct validity requirement was met.

The composite reliability scores measure the internal consistency of the constructs. All of the constructs demonstrated score values above the recommended threshold value of 0.70 as suggested by Hair et al. (2010), ranging from 0.816 to 0.932, reflecting that they explained more than 50% of the variance in the construct. The AVE values were used to confirm the convergent validity of the construct. All constructs have AVE values larger than 0.50 that range from 0.527 to 0.714, further indicating that the constructs have met the convergent validity requirement as indicated by Fornell and Larcker (1981). In terms of internal consistency, Cronbach's alpha coefficients for the four constructs ranged between 0.813 and 0.934, which is greater than 0.70, indicating that they had a high degree of internal consistency, as suggested by Hair et al. (2010). Table 5 summarizes the findings of the validity and reliability analyses conducted on the measurement model.

Results of the Structural Model Analysis

In this study, two structural equation path models were used to test the hypotheses of the research framework. The first structural equation path model involved testing H1a – H1c with the full sample (N = 367). Another model involved testing the hypotheses related to the moderating effect of firm size, i.e., H2a–H2c. The findings show that RMSEA is 0.049 (below the recommended value of 0.08); CFI is 0.972 (greater than the suggested value of 0.90); TLI is 0.968 (above the recommended value of 0.90), and relative Chi-Square (Chisq/df) is 1.879 (below the threshold level of 3.0). In a nutshell, all five indices indicated that the structural model has a good model fit. The schematic diagram shown in Figure 2 illustrates the causal linkages between exogenous and endogenous variables, together with the standardized regression coefficients for each path in the structural model.

Table 6 demonstrates the analysis results of the effects of customer pressure, regulatory pressure, and social community pressure on the intention to adopt EMPs. Firstly, the effect of customer pressure on intention was significant ($\beta = 0.161$, $p < 0.001$). Therefore, Hypothesis 1a, "customer pressure has a positive impact on the intention to adopt EMPs," was accepted. In other words, the urge to become more environmentally responsible among food manufacturing SMEs in this study was positively associated with the pressure from customers, further suggesting that customer pressure is an enabler of EMPs' intention. Secondly, Hypothesis 1b, "regulatory pressure has a positive impact on the intention to adopt EMPs", anticipates a positive path from regulatory pressure to intention. The results indicated that the path from regulatory pressure to intention was significant ($\beta = 0.484$, $p < 0.001$), supporting Hypothesis 1b. According to the results, there was firm evidence that SME owner-managers perceive that regulatory pressure underpins the intention to adopt EMPs. Thirdly, social com-

Table 4. Results of CFA for the Revised Measurement Model

Items	Estimate	Factor loading	t-value	Items	Estimate	Factor loading	t-value
CP1←CP	1.000	0.783	Fixed	RP4←RP	0.999	0.820	18.057***
CP3←CP	1.040	0.776	13.582***	RP5←RP	1.157	0.883	20.416***
CP4←CP	0.926	0.659	11.788***	SCP1←SCP	1.000	0.864	Fixed
CP5←CP	0.881	0.674	12.104***	SCP2←SCP	1.086	0.880	22.801***
RP1←RP	1.000	0.814	Fixed	SCP3←SCP	1.105	0.878	22.709***
RP2←RP	1.041	0.840	19.123***	SCP4←SCP	1.084	0.880	22.815***
RP3←RP	1.000	0.843	18.951***	SCP5←SCP	0.747	0.707	15.872***

Note: CP: Customer Pressure SCP: Social Community Pressure
 RP: Regulatory Pressure ***: Significant at 0.001 level

Table 5. Results of Validity and Reliability Analyses

Variables	Composite Reliability (> 0.7)	Average Variance Extracted (> 0.5)	Cronbach's Alpha (> 0.7)
Customer Pressure	0.816	0.527	0.813
Regulatory Pressure	0.924	0.708	0.923
Social Community Pressure	0.925	0.714	0.924
Intention to Adopt EMPs	0.932	0.664	0.934

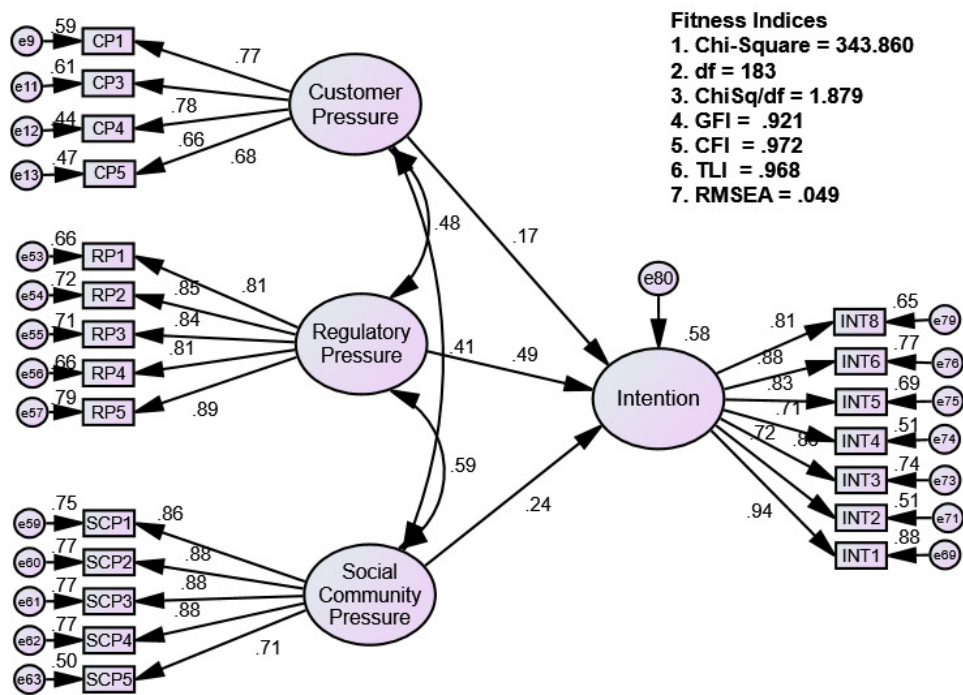


Figure 2. The Causal Relationship among the Variables in the Structural Model

community pressure positively affects intention, and the path coefficient was significant ($\beta = 0.249, p < 0.001$). It is an indication that owner-managers are more likely to have the intention of adopting EMPs if they perceive that the social community has shown strong demand and pressure on SMEs to implement EMPs.

Moderation Analysis of Firm Size

The moderation test was conducted via a multi-group analysis function in SPSS AMOS software. Based on the descriptive analysis done previously, there were 263 food manufacturing SMEs categorized as small-sized firms,

Table 6. Results of Hypotheses Testing

H	Path	Estimate	β	S.E.	t-value	Result
H1a	CP → INT	0.189***	0.161	0.059	3.180	Supported
H1b	RP → INT	0.531***	0.484	0.064	8.294	Supported
H1c	SCP → INT	0.244***	0.249	0.051	4.806	Supported
Note:	CP:	Customer Pressure		INT:	Intention to adopt EMPs	
	RP:	Regulatory Pressure		***:	Significant at 0.001 level	
	SCP:	Social Community Pressure				

Table 7. The Definition of SMEs in Malaysia

SMEs Category	Small	Medium
Manufacturing	Sales turnover from RM300,000 to less than RM15 million OR employees from 5 to less than 75	Sales turnover from RM15 million not exceeding 50 million OR employees from 75 to not exceeding 200
Services and other sectors	Sales turnover from RM300,000 to less than RM3 million OR employees from 5 to less than 30	Sales turnover from RM3 million not exceeding 20 million OR employees from 30 to not exceeding 75

Source: SME Corporation Malaysia (2013)

Table 8. Summary of Model Fit for Firm Size

Model	NPAR	CMIN	DF	P	CMIN/DF
Unconstrained	104	641.999	448	.000	1.433
Measurement Residuals	52	718.774	500	.000	1.438

given that those SMEs employed between 5 and 75 workers. On another note, 104 of the responded SMEs employed full-time workers between 75 and 200 workers, which can be classified as medium-sized firms. For moderation analysis, firm size was measured based on the number of permanent employees in the firm, and it was classified according to the definition of SMEs in Malaysia, as shown in [Table 7](#).

The moderation effect could be established by comparing the unconstrained (variant-group model) against the measurement residuals (invariant-group model) (Abu Samah, 2016). The unconstrained model assumes that the "Small-sized Firms" and "Medium-sized Firms" models are different. In contrast, the measurement residuals model assumes no difference between "Small-sized Firms" and "Medium-sized Firms" models. The AMOS text output showed that both models were significant at $p < 0.001$. The CMIN value of the unconstrained model was 641.999, which is smaller than the measurement residuals model with a CMIN value of 718.774 ([Table 8](#)). Therefore, it was proven that the unconstrained model is better than the measurement residuals model.

[Table 9](#) demonstrates the results of other methods to test the significant difference between the models. The findings suggest that the difference of Chi-square (χ^2) in Measurement Residuals Model was significant as the sig- χ^2 is less than alpha ($p < \alpha$), $p = 0.014$; CMIN = 76.775 (718.774 - 641.999); DF = 52 (500 - 448). Accordingly, this study con-

firmed the existence of the moderation effect of firm size in the overall model.

The next task was to examine the firm size's ability to moderate the effect on the individual paths. The regression weights for both groups, "Small-sized Firms" and "Medium-sized Firms", were compared. According to Hair et al. (2010), the path is considered moderated by a mediating variable if one of the groups is significant, whereas the other must be insignificant, or both groups are significant; however, one must be positive while the other is negative.

In light of that, firm size was identified as a moderator of the relationship between customer pressure and intention. For small-sized firms, the path coefficient had a positive effect at the 0.01 significance level, but for medium-sized firms, the path coefficient of CP on INT was not significant ($p = 0.320$). Combining these results, medium-sized firms may perceive that customer pressure is not an important factor in determining their decision to adopt EMPs. On the other hand, small-sized firms may perceive customer pressure as an important reason to adopt EMPs because their survival will greatly depend on the support from their customers. The result indicates that more customer pressure is needed for small-sized firms to increase their intention to adopt EMPs.

However, firm size does not moderate the paths from regulatory pressure and social community pressure to the intention to adopt EMPs, since the effects of each variable were similar in small and medium-sized firms. In other

Table 9. Model Comparison for Firm Size: Assuming Model Unconstrained to be Correct

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Measurement weights	19	13.720	.800	.002	.002	-.002	-.002
Structural weights	22	18.011	.705	.003	.003	-.002	-.002
Structural covariances	28	30.056	.361	.004	.005	-.002	-.002
Structural residuals	29	41.749	.059	.006	.006	.000	.000
Measurement residuals	52	76.775	.014	.011	.012	.000	.000

Table 10. Results of Moderation Test for Firm Size

Variable	Path	Variable	Small-sized Firms		Medium-sized Firms	
			β	P	β	P
INT	←	CP	0.171	0.004 ^a	0.089	0.320
INT	←	RP	0.523	***	0.479	***
INT	←	SCP	0.184	0.002	0.398	***

Note: CP : Customer Pressure β : Standardized Coefficient
 RP : Regulatory Pressure *** : significant at 0.001 level
 SCP : Social Community Pressure a : significant at 0.01 level

Table 11. Results of Hypothesis Testing for Moderation Effect of Firm Size

Hypothesis	Hypothesis Statement	Results
H2a	Firm size moderates the relationship between customer pressure and intention.	Supported
H2b	Firm size moderates the relationship between regulatory pressure and intention.	Not Supported
H2c	Firm size moderates the relationship between social community pressure and intention.	Not Supported

words, those firms that perceive the government has imposed stricter environmental regulations or increased pressure from the social community will have a higher propensity to adopt EMPs regardless of the size of the firms. The detailed results are presented in [Table 10](#).

A further examination shows that, for small-sized firms, customer pressure has a higher positive impact on the intention to adopt EMPs than for medium-sized firms. Hypothesis H2a is verified and supported. In contrast, H2b and H2c were not supported, which indicates that firm size only moderates the relationship between customer pressure and the intention to adopt EMPs. The results of the hypothesis testing for the moderation effect of firm size are summarized in [Table 11](#).

Discussion

This study was designed to explore the role of the customer, regulatory bodies, and social community in influencing the intention of SMEs to adopt EMPs in Malaysia. The Stakeholder theory has facilitated the identification of the external factors affecting the food manufacturers' intention to adopt EMPs, and further improved their environmental practice performances. Based on the statistical analyses, all these factors were found to have a significant

positive impact on the food manufacturing SMEs' intention to adopt EMPs.

This study showed that customer pressure was positively associated with the EMPs' intention. This situation illustrates that food manufacturing SMEs are more likely to have the intention to engage in EMPs if they receive strong demand from their customers to improve environmental performance or environmentally friendly products. Although customer pressure has depicted a significant result, the role of this factor in this study was not as important as expected. This situation possibly occurred due to the size of the SMEs that participated in this study, which consisted of small and medium-sized companies only. More than half of the responding SMEs were categorized as small enterprises (71.5%). Smaller companies are relatively less affected by the pressure from customers, especially in the aspect of environmental issues. Besides, most SMEs do not view environmental initiatives as essential to their customers (Gerrans & Hutchinson, 2000). Consequently, the customers' demand for environmentally friendly products is less encouraging. SMEs face less pressure to enhance their environmental performance, which may be the reason for the low significant effect of customer pressure on the intention to adopt EMPs. The findings of the current study were sim-

ilar to earlier studies done by Anton et al. (2004), Hsu et al. (2013), and Muazu et al. (2017).

Regulatory pressure was found to positively correlate with the intention to adopt EMPs. This finding indicates that food manufacturing SMEs are aware that regulatory pressure underpins the intention toward EMPs. Regulation can cause either a favorable or unfavorable impact on innovation, particularly in EMPs. SMEs may also observe environmental subjects as threats rather than opportunities. Past literature has highlighted that most municipal governments still lack the ability to exert adequate pressure on polluting companies to improve their environmental practices. Local governments, particularly those in rural and semi-urban regions, still rely on central government agencies to monitor the environment and enforce environmental laws against polluting companies (Tevapitak & Helmsing, 2019). Nevertheless, even if the capability and authority of local governments are increased, this does not necessarily translate into improved environmental actions by companies. Therefore, regulatory pressure can either encourage or discourage the EMPs in a company. The results of this study were in line with Dey et al. (2018), Hsu et al. (2013) and Ho et al. (2014), which concluded that regulatory compliance is the main driver for EMS adoption. Seeing that environmental regulations can increase business compliance, regulatory bodies in Malaysia are expected to set stringent regulations and strengthen enforcement to mitigate the business impact on the environment.

Social community pressure also significantly affected the food manufacturing SMEs' intention to adopt EMPs. It indicates that manufacturing SMEs are more likely to embrace EMPs if they acknowledge that the social community has exerted pressure on them to improve their environmental performance and adopt environmentally responsible practices. The results obtained in this study were consistent with the preceding literature, which found a significant positive relationship between social community pressure and environmental practices (González-Benito & González-Benito, 2006; Henriques & Sadorsky, 1996, 1999; Hwang et al., 2016).

As mentioned earlier, the purpose of this study was to test the selected variable's moderation effect, namely firm size, on the particular individual paths and the overall structural model. The findings indicate that firm size has some form of moderation effect on the overall model being tested. To be specific, this study provides evidence of the moderating role of firm size in the relationship between customer pressure and EMPs intention. In comparison to medium-sized firms, small-sized firms turned out to be more affected by customer pressure in their intention to adopt EMPs. Since the relationship between customer pressure and intention is more prevalent in small firms, this indicates that they observed the pressure from customers as an important factor in their decision-making process related to EMPs implementation. The findings of this study were contrary to Vanpoucke et al. (2014), who argued that larger firms encounter greater environmental pressure as compared to smaller firms. Nonetheless, the findings of this

study agreed with Besser (1999), who stated that smaller firms are more responsive to the demands of stakeholders.

On another note, no evidence was found to support the moderating effect of firm size on the relationships between regulatory and social community pressures and the intention to adopt EMPs. Apparently, firm size does not affect the direction or strength of the relationship between regulatory pressure – intention and social community pressure – intention. The findings are in line with a study done by Henriques and Sadorsky (1996), which claims that small firms are less sensitive to external stakeholders' pressure, such as environmental activists. However, this study's results are contrary to Perrini (2006), who highlighted that small firms are more responsive to pressure by regulatory bodies to comply with environmental regulations.

Theoretical Implications

The findings of this study have the potential to be valuable and significant to researchers and theorists. Despite the fact that SMEs specializing in food products account for the majority of the manufacturing sector in Malaysia, research on the intention to adopt EMPs is relatively scarce in the food manufacturing sector. The findings indicated that while food manufacturers have expressed a goal to embrace EMPs, the intention has not yet been completely realized due to a variety of obstacles impeding the adoption process. Through the lens of Stakeholder theory, this study aims to explicate EMPs related issues among Malaysian SMEs in the food manufacturing sector. Stakeholder theory suggests the firm engages with stakeholders and strengthens their relationships in order to reduce environmental risks and maintain a competitive advantage. As climate change and carbon emissions intensify and the rising pattern of food waste accumulation continues, stakeholders increasingly hold businesses accountable for environmental decisions.

The study's findings suggest that external stakeholders influence the intention to adopt EMPs of food manufacturing SMEs in Malaysia. The results highlight the importance of government and regulatory bodies promoting EMPs. Customer and social community demand and their increasing environmental expectations form the core normative pressure for SMEs to implement EMPs. Thus, SMEs' intentions to adopt EMPs can be improved by increasing customer, regulatory, and social community pressure. The application of the Stakeholder theory allowed for a more comprehensive investigation of an organizational environment and how the stakeholders in the food manufacturing sector influence, facilitate, or hinder the adoption of EMPs. In this study, the influences of customers, regulatory bodies, and the social community are essential. This result is foreseeable, and it seems logical that powerful groups will use their power to promote acceptance of environmentally responsible conduct towards businesses, for instance, through stricter enforcement of environmental regulations, consumer boycotts, and environmental protests. According to Schaltegger et al. (2017), Stakeholder theory is critical for comprehending and formulating an effective strategy and establishing common ground on which environmental

sustainability can be achieved. A wide range of stakeholder perspectives and influences is needed to help improve the value of a concept, such as the concept of EMPs in the food manufacturing industry. Without the help of the stakeholders, the best results and value can't be achieved.

Managerial Implications

The findings have implications for SME owner-managers and policymakers. Considering that external stakeholders' pressures can influence the adoption of EMPs, the impact of these pressures could be increased to achieve the real internalization of environmental practices into day-to-day business activities. SME owner-managers should raise their investment budget in order to completely incorporate EMPs into their company's business strategy. This is a key factor in achieving significant improvements in environmental performance. Therefore, the government should promote the internalization of environmental practices by raising SME owner-managers understanding of the environmental implications of their businesses as well as the commercial opportunities that can be realized through the implementation of EMPs. More awareness programmes, assistance, and incentives from the government will make it easier for SMEs to implement EMPs. To date, the Malaysian government has implemented several initiatives, such as the MyHijau SME and entrepreneur development program, the green technology financing scheme (GTFS) and tax incentives for the green industry, to encourage entrepreneurs in Malaysia to adopt EMPs. Furthermore, industrial associations could also conduct environmental-oriented programs to boost environmental awareness among SMEs rather than concentrating on formal environmental mechanisms, which may be difficult for small businesses to implement.

Research Limitations

Numerous limitations plagued the conclusions of this investigation. To begin with, one major limitation of this study stems from the study's location, as survey results were primarily obtained in Malaysia and focused on food manufacturing firms. Other countries and industries, such as the agriculture and construction sectors, should be examined as potential areas for further research in this field. Second, the study focused exclusively on small and medium-sized food businesses. Future research should broaden its reach to include microbusinesses and large corporations in order to compare the intentions and behaviors of companies of varied sizes. Third, this paper investigated the influences of only three external stakeholders (customers, regulators, and social communities). Other primary and secondary external stakeholders such as employees, suppliers, and competitors should also be examined to explore their influences further.

Conclusion

Based on the results of the current study, all three external stakeholders are significant in influencing the SMEs' intention to adopt EMPs. It shows that SMEs' owners-man-

agers perceived that the pressure from external stakeholders could become the driver for them to adopt EMPs. In Malaysia, SMEs face several challenges or limitations in order to implement EMPs, for example, a lack of market demand and public pressure for environmentally friendly products; a lack of financial gains through EMPs, and no financial incentives or policies in place to encourage the implementation of EMPs (Raja Ariffin et al., 2015). Understandably, it is quite difficult for SMEs in Malaysia to balance the pressures from external stakeholders and the limitations faced by SMEs. The results also indicate that firm size only moderated the relationship between customer pressure and SMEs' intention to adopt EMPs. One possible justification was that most of the small-sized firms involved in this study have operated for less than ten years. Small and young firms may exhibit greater sensitivity due to their concern about the possibility of being rejected by customers. Customers who are dissatisfied with a firm's environmental performance may put pressure on the firm to implement environmental initiatives. As customers' awareness and desire for environmental protection measures rise and their disapproval of hazardous activities grows, small-sized firms are under more pressure to adopt EMPs.

SMEs in Malaysia are expected to continue to move towards sustainable business practices by implementing EMPs, due to increasing environmental awareness among the customers. As the world slowly emerges from the pandemic, there are signs that customers will be more interested in purchasing sustainable products. Besides, some business customers require their suppliers to meet certain environmental practices standards (Nishitani, 2010). To improve the Environmental Quality Act of 1974, Abdul Rahman (2021) suggests that the Malaysian government set stricter limits on pollutant emissions, increase penalties and punishments, incorporate sustainability concepts into environmental impact assessments, and implement the most recent environmental control methods. Furthermore, social community groups such as environmental activists and NGOs have played an active part in promoting and ensuring that the environment remains in a healthy state. Some activists have vocally raised their concern about the numerous loopholes in the existing regulations, which may cause abuse of power and corruption to arise in environment-related enforcement (Tang, 2019). There are also NGOs that call for a boycott of companies that cause haze and pollution to the environment (The New Paper, 2015).

The findings of this study contribute to the literature on Stakeholder theory by identifying the influential external stakeholders that can affect the intention of food manufacturing SMEs in Malaysia to adopt EMPs. Stakeholder theory suggests that regulatory bodies, customers, and the social community as external stakeholders of food manufacturing SMEs have a pivotal role in encouraging the implementation of EMPs. The research findings can only reasonably be generalized to populations that share characteristics with the respondents of this study and have an almost similar level of pressure or demand demonstrated by external stakeholders towards SMEs to adopt EMPs.

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