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DETERMINANTS OF SUSTAINABLE DEVELOPMENT AMONG MALAYSIAN FOOD AND BEVERAGES SMALL AND MEDIUM ENTERPRISES: FROM THE PERSPECTIVE OF VUCA APPROACH

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Abstract: Sustainable development, as a new paradigm, ensures that both the ecological demands of the Earth and human growth are taken into account to balance the needs of the present without risking the needs of the future. The factors that enable sustainable development in Malaysian small and medium enterprises are not well understood yet. By analysing the connections among technology and innovation capabilities, sustainability orientation, organisational culture, government support, and sustainable development, the current study aims to close this gap. Data were gathered on a sample of Malaysian food and beverage small and medium enterprises using a quantitative survey methodology. To analyse the collected data, Smart-PLS 4.0 was used. The findings of this study indicated that organisational culture, sustainability orientation, technology and innovation capabilities, and sustainable development were strongly correlated. Government support, however, had little impact. This study contributes to the body of knowledge by describing the organisational culture, sustainability orientation, technology, and innovation capabilities that enable sustainable development. Additionally, it may help organisations and governments build sustainability, competitiveness, and resilience in their operations for both domestic and international markets.

Keywords: Government support, organisational culture, sustainability orientation, sustainable development, VUCA approach.

Introduction

In the past decade, the concept of sustainable development has garnered increased attention from most academic disciplines since the World Commission on Environment and Development (WCED, 1987) published the Brundtland Report. The world then saw an increasing focus on business opportunities with the green agenda in the early 1990s (Holt & Shattuck, 2011), where traditional businesses were encouraged to transform their operations to reflect their concern for environmental and social issues (George *et al.*, 2016). The commitment of social entrepreneurs to social goals can lead them to exploit limited resources and act productively within institutional constraints (Desa, 2012). Despite the institutional failures surrounding them, many enterprises attempt to implement strategies that promote sustainable development (Panagiotis *et al.*, 2017). Hence, sustainable entrepreneurship can be considered as an idea that developed from sustainable development. Sustainable entrepreneurs are those who contribute to sustainable development by conducting business sustainably (Lozano *et al*., 2015; Saad & Manshor, 2023).

Some have argued that entrepreneurship may be considered the most potent transformational driver for the future, offering a flexible and widespread structure for attaining and delivering Sustainable Development Goals (SDGs) while fuelling economic growth at a regional level. Scholars agree that sustainable business has three key dimensions; financial, social, and ecological (Dyck *et al.*, 2019).

This three-dimensional understanding is also becoming the norm among practitioners, where it is often called the "triple bottom line" approach (Elkington, 1997; McWilliams *et al.*, 2014). While most observers acknowledge the importance of sustainable business practices, too little is known about achieving them. Thus, scholars have called for research that sheds light on sustainable business practices (Glavas & Mish, 2015).

Intense debates have recently taken place over sustainable entrepreneurship (Zeng, 2017; Manshor & Saad, 2022). There was, however, a dearth of critical discussion on the nature of this phenomenon and the prospects for sustainable entrepreneurship in the future, according to Munoz and Cohen (2018) and Terán-Yépez *et al.* (2020). Since current unsustainable business practices have such a negative impact on the environment and society, sustainable entrepreneurship is now recognised as a critical area of study within the field of entrepreneurship (Hall *et al.*, 2010; Munoz & Cohen, 2018). As a result, there is a growing awareness that fundamental change is necessary to minimise these effects (Hall *et al.*, 2010). Sustainable entrepreneurship is viewed as a crucial channel for enacting change towards sustainable products and processes because many well-known thinkers advocate it as a solution to numerous social and environmental issues (Hall *et al.*, 2010). Furthermore, Shepherd *et al*. (2011) asserted that in the contemporary world, it is more crucial than ever to think about how businesses may catalyse more sustainable growth. To effectively address the challenges and build a more sustainable economy, entrepreneurial activities must successfully employ sustainable practices (Patzelt & Shepherd, 2011).

A company must act prudently and responsibly, take care of the health and safety of its employees, and enhance the quality of life for its external clients, according to Gimenez *et al*. (2012). In response, Patzelt and Shepherd (2011) highlighted the need for further research into how entrepreneurship works as a method for preserving ecosystems and the natural world. Instead of placing a higher priority on financial gain, sustainable entrepreneurship tries to achieve positive environmental and social change and build a foundation for new business opportunities, decision-making, and innovative goods or services from start to finish (Zeng, 2017). Additionally, goals for establishing socially and environmentally responsible behaviours at the international, national, and regional levels have been proposed (Apostolopoulos *et al.*, 2018; Manshor & Saad, 2023).

Despite the promise that sustainable entrepreneurship offers for advancing sustainable development, the role this sector will play in this field remains unclear. Additionally, there is a dearth of studies on the factors that affect sustainable development among Small and Medium Enterprises (SMEs) in developing countries (Zeng, 2017; Manshor & Saad, 2023). In the mainstream literature on sustainable enterprises, academic debate regarding sustainable development has been limited. Little is known about how entrepreneurs would locate and capture such opportunities outside the boundaries of their current markets, although it has long been established that they can be leveraged to benefit from new opportunities created by social requirements. Therefore, many uncertainties remain regarding whether and how this process will proceed despite the attractiveness of sustainable entrepreneurship as a solution to the shift to a more sustainable society (Zeng, 2017; Saad & Manshor, 2023). Additionally, the link between sustainable business practices and sustainable development is occasionally overly optimistic and more prescriptive than descriptive. As a result, it is still unclear which business owners can find sustainable enterprises and whether business owners with a sustainable mindset are distinct from traditional business owners. Research is also needed to examine how public policy operates and how it could have a positive impact on the prevalence of sustainable entrepreneurship (Hall *et al*., 2010).

Research on SMEs has become increasingly common in various academic fields (Mazutis & Sweet, 2022; Saad & Manshor, 2023). Due to their prevalence, the significance of SMEs in preserving the environment is evident (Fonseca *et al.*, 2020). Prashar and Sunder (2020) claim that there has been little study on sustainability issues related to social, environmental, and social factors in operation management literature. Despite the wealth of research in the field, there is a need for a theoretical framework to explain sustainable development in SMEs (Sarango-Lalangui *et al*., 2018; Saad & Manshor, 2023). To fully comprehend the phenomena of sustainable development in the context of small businesses, further research is therefore necessary.

Due to SMEs' significant contributions in Malaysia and the lack of clear conclusions regarding the determinants and performance of sustainable development among food and beverage SMEs, this study focuses on such enterprises with the aim of helping and guiding both enterprises and the government to build competitive, resilient, and sustainable businesses in domestic and international markets.

Literature Review

Sustainable development demands both action and a fundamental change in mindset. It calls for the creation of fresh perspectives, aspirations, and methods for influencing a fast-transforming reality. As early as the Zhou Dynasty (110 BC-771), people began to understand that mountains, forests, and rivers should be maintained in line with nature's norms rather than being unnecessarily exploited (Shi *et al*., 2019). This promotes economic growth without putting the planet's ecosystems at risk or causing environmental issues such as deforestation and water and air pollution, which can result in problems like climate change and species extinction (Browning & Rigolon, 2019). Since the United Nations Conference on the Human Environment first introduced the term "sustainable development" in 1972 to promote the concept, its significance has grown. Later, in 1987, the WCED produced a report on human development titled "Our Common Future", which provided, for the first time, a scientific definition of sustainable development.

According to the report's definition, sustainable development is the development that satisfies the needs of the present generation without compromising the ability of future generations to satisfy their own needs, emphasising the dynamic character of sustainability (WCED, 1987). Its core thesis is that all natural systems have boundaries and that preserving human well-being requires adherence to those limitations. The report also highlighted subjects such as population, food, spices, genetic resources, energy, human habitation, social justice, and human growth within the context of social equality and equitable resource usage (WCED, 1987).

The present study used the VUCA model to analyse aspects of sustainable development. The VUCA concept was first introduced by the United States military after the end of the Cold War to describe the conditions of a world increasingly difficult to predict and depend on, shaped by volatility, uncertainty, complexity, and ambiguity (Shambach, 2004). Since its introduction in the 1990s, the concept has been quickly embraced by fields such as strategic decision-making, risk management, and situational problem-solving (Shepherd, 2004). Business and management science adopted the VUCA concept after the financial crisis of 2008-2009, when societies, companies, and organisations worldwide suddenly faced similar conditions in their social and economic environments (Doheny *et al.*, 2012; Bennett & Lemoine, 2014). Current research on VUCA focuses on its implications for sustainable leadership and strategic development, as well as the challenges of adapting managers' and decision-makers' mindsets to these new conditions. Although these principles have been addressed individually, the VUCA concept remains understudied in environmental science and conservation practice (Schick *et al.*, 2016).

In many cases, these global and national challenges are unprecedented with the rapidity and frequency of change in the modern era, making them increasingly difficult to forecast and gauge. Many commentators note that we live in a time of VUCA, i.e., in a time where volatility, uncertainty, complexity, and ambiguity abound and where such a state of affairs is becoming more, rather than less, commonplace (Bennett & Lemoine, 2014). As Bennett and Lemoine (2014) identified, VUCA is a worldview that describes four conditions: (1) Volatility, characterised by rapid changes; (2) Uncertainty, marked by a lack of clarity about the present and future outcomes; (3) Complexity, involving numerous and competing decision factors; and (4) Ambiguity, where there may be a multiplicity of interpretations and meanings. Economic, social, and environmental factors rooted in sustainable development principles are integral components of organisational sustainability. Through experiential learning and dialogue during the Caribbean-Canada Emerging Leaders Dialogue 2019, participants considered the extent to which SMEs in the country are sustainable in the context of VUCA.

Van Kleef and Roome (2007) defined innovation as the process of discovery and development that yields new products, organisations, technologies, institutional structures, and systemic structures. This definition includes the use of ideas, data, and technology to improve corporate performance. Innovation is frequently driven by technology and it is typically associated with boosting competitiveness and economic success rather than solving problems (Onsel *et al.*, 2008). Earlier literature identified several categories of innovation, including technology, process, product and service, management, operations, and organisation (McFadzean *et al*., 2005).

A business's sustainability orientation is frequently viewed as a strategic asset that provides a competitive edge and enhances operational efficiency. Even though current empirical evidence suggests a somewhat favourable correlation between sustainability orientation and a company's financial performance, it is also clear that sustainability orientation affects the success of new product developments (Claudy *et al*., 2016; Manshor & Saad, 2023). However, the impacts of sustainable goods and services are one of the least understood areas of sustainability management, indicating the need for further research (De Medeiros *et al.*, 2014). Increased operational efficiency is ultimately achieved through higher-quality organisations driven by improved customer value and product quality (Hart, 1995).

Organisational culture plays a vital role in sustaining an enterprise as it ensures sustainability, given that organisational culture outlives any individual (Ulrich *et al.*, 2016). Organisational culture provides a competitive advantage, as it takes time to develop and is more difficult to imitate than, for example, access to financial capital or installing the latest equipment. Therefore, enterprises with a strong culture are highly competitive. Since businesses adopted the philosophy of sufficiency economy is expected to be sustainable; this philosophy can be regarded as an approach to corporate sustainability. Organisational culture can also be considered a form of intellectual property or an intangible asset (Flamholtz & Randle, 2012). A positive culture works as an intangible asset while a negative culture can hinder performance, potentially leading to an organisation's decline or failure. Sustainable enterprises pay great attention to a wide range of stakeholders and relationships with the latter by recognising their concerns and needs. These strong relationships, based on trust, mutual respect, support, as well as genuine understanding aim to prevent social crises and improve society (Oruc & Sarikaya, 2011).

Some areas of sustainable development demand additional assistance from and attention from the government and its political leaders. Consequently, adopting an integrated strategy is crucial (Hasna, 2007; Saad & Manshor, 2023). Governments run the risk of focusing solely on some factors (such as the political and economic

ones) while neglecting others in the absence of a comprehensive strategy. The environmental impacts of human activity include waste accumulation, pollution, depletion of natural resources (water, marine life, and lumber), the greenhouse effect, and climate change. It is evident that the current levels of production are unsustainable on the environment, resources, and economy. However, it appears that global society remains committed to an economic system that promotes increased consumption (Van der Waldt, 2015). Therefore, the government's capacity to spur change is even more crucial.

The notion that organisational culture, sustainability orientation, and technology and innovation capabilities are internal components most likely originates from the belief that these characteristics are under an organisation's direct control or influence (Onsel *et al*., 2008; Manshor & Saad, 2023). An organisation's ability to perform its essential functions, including service delivery, innovation, and production processes is referred to as its technology and innovation capabilities (McFadzean *et al.,* 2005). Meanwhile, its commitment to and methodology for incorporating environmental, social, and economic sustainability factors into its operations and decision-making processes are its sustainability orientation. Strategic initiatives and organisational culture are usually used to manage, develop, and foster these qualities within (Ulrich *et al*., 2016).

Because it comes from sources outside of the organisation itself such as laws, rules, incentives, and support systems, government support is classified as an external element (Hasna, 2007; Saad & Manshor, 2023). Ultimately, organisations do not directly influence government actions and decisions, even if they may actively engage with governmental entities and push for supporting policies (Saad & Manshor, 2023). The operational environment and conditions for firms, including market regulations, taxation policies, funding opportunities, and industry standards can be greatly influenced by government support (Van der Waldt, 2015). It is therefore presented as an outside force that businesses need to adjust to and work around in their operational and strategic planning frameworks.

At present, SMEs have considered the aspects of social implications and environmental protection in strategy formulation to improve economic welfare (Prashar & Sunder M., 2020). While economic sustainability in SMEs is vital for their survival, the social, environmental and economic dimensions improve their overall performance by creating a new form of competitive advantage (Nematollahi *et al.*, 2017; Schwab *et al*., 2019). Hence, it is very crucial to explore sustainable development in SMEs to gain a better understanding of the economic, social, and environmental impacts of their operations to ensure the well-being of future generations (Prashar *et al*., 2020). Both theoretical and empirical opinions, suggestions, and results supporting the significant contribution of SMEs to the economic growth of nations worldwide, including Malaysia are abundant (Yusoff *et al.,* 2018).

Proposed Conceptual Framework

The proposed conceptual framework for this study is derived from a review of relevant literature and past findings. It is grounded in the concept of sustainable development of SMEs and the VUCA World perspective.

The framework advances the sustainable development of food and beverage SMEs in the context of VUCA World research by elucidating the characteristics of SMEs in Malaysia and their theoretical foundation in this area. The framework also highlights the preparedness, resilience, business strength, and competitiveness of entrepreneurs in this VUCA World while also considering technology and innovation capabilities, sustainability orientation and organisational culture as internal factors, and governmental support as environmental factors. These determinants of sustainable development may affect the viability and the readiness of entrepreneurs and SMEs in the VUCA World. This research is predicated on the conceptual framework depicted in Figure 1.

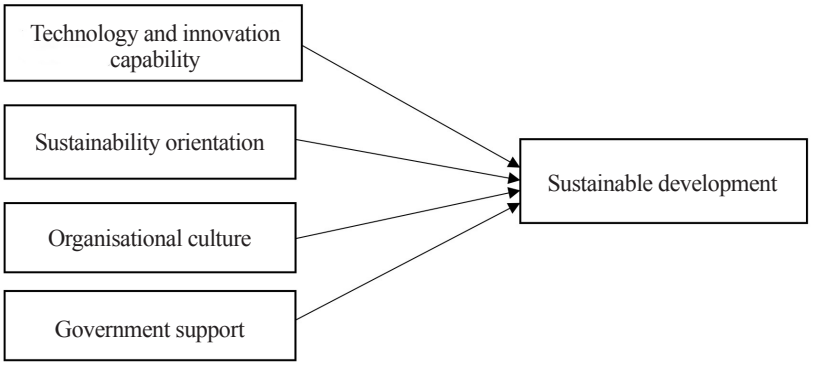

Figure 1: Proposed conceptual framework

Hypotheses Development

Based on the literature review and past findings, several hypotheses were developed. These hypotheses focus on the effects of organisational culture, government support, sustainability orientation, and technology and innovation capabilities on sustainable development.

Technology and Innovation Capabilities and Sustainable Development

For a firm, a competitive advantage not only depends on research and development, but is also enhanced by potential technology (Hsieh & Tsai, 2007; Chang & Chen, 2019). In reality, most firms cannot have up-to-date technology developed in-house because of the increasingly complex nature of technology and short product life cycles. If a firm wants to remain competitive in the market, it must quickly integrate, adapt, and upgrade the diversity of its external and internal information storage, retrieval, and analytical tools related to necessary work activities, in addition to business and management functions with external technologies and on-time product launches (Van Kleef & Roome, 2007; Chang & Chen, 2019).

Therefore, searching for the internal factors that encourage technological innovation capabilities might augment the firm's understanding of innovative processes (Kafetzopoulos & Psomas, 2015). In terms of technological activities, vital networking and social capabilities benefit technology innovation due to the collaboration among actors in a network, as design can be achieved by implementing additional capabilities from outside sources (Becker & Dietz, 2004). In particular, collaborating with universities and research institutions positively affects product innovation (Nieto & Santamaría, 2007). Such collaboration allows firms to acquire new scientific knowledge from universities and research institutions, which might benefit product or process innovation (Wu *et al.*, 2015).

In the literature, innovation is considered an important element of firm success (Delgado-Verde *et al.*, 2011). Harper and Becker (2004) stated that innovation results in significant change, preferably an improvement in the real product, process, or service that exceeds the impact of previous achievements. They added that innovation supported sustainable business management. Firms encourage innovation to achieve production and marketing goals, improve product or service quality, lower operational costs, increase market share, attain production flexibility, and enhance management processes (Walker *et al.*, 2011). This study suggests that technology capabilities play an essential role in innovation. The readiness to upgrade and integrate new technology can enable design for product and service development, marketing, and management processes. Therefore, the following hypothesis is proposed:

H1: Technology and innovation capabilities are positively related to sustainable development.

Sustainability Orientation and Sustainable Development

Sustainability orientation refers to the commitment to integrating environmental and societal considerations in business operations (Kuckertz & Wagner, 2010). It demonstrates an organisation's readiness to implement sustainability-related initiatives (Prasad, 2015). An entrepreneur's sustainability orientation is defined as the embrace of goals or objectives that focus on preserving nature, life support, and community. It represents an opportunity to create future products, processes, and services to benefit individuals, the economy, and society, encompassing both economic and non-economic gains (Patzelt & Shepherd, 2011). Klewitz and Hansen (2011) stated that sustainability orientation includes generating intelligence about creating opportunities, being proactive, and managing risks. It is related to present and future economic, social, and environmental progression, the diffusion of that knowledge across departments and the organisation's self-renewal (Klewitz & Hansen, 2011).

Sustainability-oriented entrepreneurs manage the triple bottom line, which leads them to pursue opportunities that yield sustainability benefits even with limited profitability. According to Corral-Verdugo *et al.* (2009), social orientation and altruism are significant psychological elements of sustainability orientation. Additionally, Dacko *et al*. (2013) suggested that sustainable orientation fosters innovativeness in firms committed to viable business operations. Existing studies have also found sustainability orientation to be a reliable driver of sustainable business opportunities (Wagner, 2012). Moreover, Kuckertz and Wagner (2010) argued that an individual's sustainability orientation impacts sustainable entrepreneurship. Based on this discussion, the following hypothesis is proposed:

H2: Sustainability orientation is positively related to sustainable development.

Organisational Culture and Sustainable Development

As stated earlier, organisational culture is a crucial determinant of an enterprise's sustainability (Ulrich *et al*., 2016). In this context, leadership plays an integral role in foresting a strong organisational culture, influencing and guiding individuals to achieve organisational goals (Northouse, 2012). Influential leaders are needed because they contribute towards the success or failure of a group, organisation, or even a whole country (Fiedler, 1996). Previous studies have shown that effective leadership can enhance firm performance (Yang, 2008), increase employee satisfaction, and improve motivation (Papalexandris & Galanaki, 2009).

The role of small and medium enterprise entrepreneurs, managers, and employees is critical in building external relations. The larger the firm's top leader culture, the more intense the commitment and proactiveness of sustainable enterprise practices (Sumin *et al*., 2016). In this study, the construct of top leader culture includes, among others, managerial attitude and perspectives, top management support, and employee motivation. Therefore, SME managers can influence firms' rate of sustainable enterprise practice adoption and, in turn, which is related to the degree of their involvement in top leader culture and strategic sustainability orientation. As such, the following hypothesis is proposed:

H3: Organisational culture is positively related to sustainable development.

Government Support and Sustainable Development

A literature review revealed that a comprehensive framework has failed to place the government as the central actor in sustainable development. Various scholars adopt specific vantage points or focus on a single aspect of government and development. Santinha and Anselmo de Catro (2010), for example, highlighted the role of technology in facilitating urban resilience. In addition, Savage and Dasgupta

(2006) proposed a governance framework for urban development while Van der Waldt (2016) focused on government intervention in developmental states. Furthermore, Kemp *et al.* (2005) concentrated on the significance of good governance in sustainable development. Another study by Trainer (1995) and Adelman (1999) accentuated the role of government in stimulating economic growth towards sustainable development. Lastly, Foray (2009) underscored the policy-making role of the government in development.

It should be understood that the government's role in society, and in general, has expanded dramatically over the past century. In comparison to pre-20th-century functions, governments have taken on new and vast roles that typically comprise a modern state (Brown, 1991). Recognising that SMEs, especially private firms are the critical engine for economic growth, governments have set up supporting measures and issued various decrees. Although these policies cover multiple aspects of support for SMEs, difficulties in their implementation still exist due to unclear and unrealistic requirements (Le, 2010). Therefore, the following hypothesis is suggested:

H4: Government support is positively related to sustainable development.

Research Methodology

This study employed a quantitative approach, utilising self-administered survey questionnaires to gather data from a sample of Malaysian food and beverage SMEs. A total of 252 SMEs voluntarily participated in this study. The questionnaire was structured into three sections, each with clear headings to make it easy for respondents to follow and answer questions for related constructs. The first section required respondents to provide general company information, including the primary business area, annual total sales, number of full-time employees, duration of experience in the current industry, head office location, form of ownership, and business status. The second section consisted of questions about company characteristics, specifically focusing on technology and innovation capabilities, sustainability orientation, organisational culture, and government support. The third and final section asked respondents to assess sustainable development practices in their firms.

The Likert scale was selected over other scaling methods in this study as it is considered the preferred scaling method for obtaining attitudinal information (Fishbein & Ajzen, 1975), with respondents specifying their degree of agreement or disagreement with each statement in the questionnaire. The scale is particularly suitable for this study because it is a "subject-centred" scale designed to measure respondents' attitudes rather than objects (McIver & Carmines, 1981). The advantages of using the Likert scale include the ease of constructing the questionnaire, the clarity of the questions, and the simplicity of administration (Malhotra, 2007). Additionally, Likert scales provide robust information by minimising leniency biases (Meric, 1994). For this study, the six-point Likert scale was used to measure each construct, with response categories ranging from 1 (strongly disagree) to 6 (strongly agree). The six-point format allows for a shorter scale to assist respondents in completing the questionnaire. According to Hair *et al*. (2007), while a higher level of precision is desirable, it must be balanced with respondents' ability to process information associated with a larger number of categories. They observed that respondents exposed to scales less frequently may find it easier to respond to scales with fewer categories. Given that survey research among SMEs in Malaysia is relatively novel, especially in the context of sustainable development, utilising fewer Likert scale categories will most likely help respondents understand the information required, improving the response rate.

The data collection process started in September 2022 and finished in December 2022. The key informants in this survey were the owners or the highest-ranking officers of Malaysian food and beverage SMEs. They are considered to be the most knowledgeable about

their firms' characteristics, management style, operations, and performance (Carpano *et al*., 1994; Roth & O'Donnell, 1996). A stratified random sampling process was used to select the sample based on sector distribution. By responding to the questionnaires provided, it is assumed that the respondents gave their voluntary consent to participate in this study. Their personal information was kept confidential. A total of 1,200 questionnaires were distributed, of which 252 were returned. Due to incomplete data, 21 cases were discarded, resulting in 231 usable cases, which corresponds to a response rate of 19.25%. Following the study's objectives, descriptive statistics and structural equation modelling analysis were employed. The correlations among variables were investigated using Partial Least Squares Structural Equation Modelling (PLS-SEM). The method is often chosen when the goal is to examine intricate theoretical models or when prediction is more important than explanation. It also offers greater flexibility and robustness when dealing with small samples or non-normal data.

By contrast, covariance-based SEM is more suited to confirmatory research that aims to test established ideas using large sample sizes and normally distributed data (Hair *et al.*, 2019). In this study, the exogenous latent variables were organisational culture, government support, technology and innovation capabilities, and sustainability orientation while the endogenous latent variable was sustainable development.

Results

Descriptive Statistics

A descriptive analysis was conducted to ascertain the general background of the respondents who participated in this study. Of the 231 SMEs surveyed, 62% were made up of Bumiputera while 37.2% were non-Bumiputera. Small firms made up 84.4% of the respondents while 12.6% and 3.0% were medium and large businesses, respectively. As can be seen, the majority of SMEs are very small companies. Furthermore, 54.1% of the SMEs had been operating between one and five years while 15.6% had started even more recently. This suggests that the majority of the SMEs included in this study are relatively new and inexperienced. An overview of the respondent profiles is shown in Table 1.

Data Analysis

SmartPLS 4.0 was used to analyse the data in the study. After data screening, the reliability and validity of the measurement models were assessed. Then, the structural model was assessed using the PLS algorithm, bootstrap, and blindfolding procedures. The present study followed the guidelines of Hair *et al*. (2019), who suggested that factor loadings should be at least 0.70, Composite Reliability (CR) should be 0.70 or higher and Average Variance Extracted (AVE) should be greater than 0.5. Based on these criteria, the data were deemed valid and reliable.

Table 1: Profile of respondents

Demographics	Items	Frequency	Percentage (%)
Business status	Bumiputera	145	62.8
	Non-Bumiputera	86	37.2
Size of company	Small	195	84.4
	Medium	29	12.6
	Large	7	3.0
Age of company	< 1year	36	15.6
	1-5 years	125	54.1
	6-10 years	35	15.2
	11-15 years	19	8.2
	> 15 years	16	6.9

Measurement Model

Convergent validity was assessed using outer loadings, CR, and AVE. As shown in Table 2, all loadings exceeded 0.7, CR was above 0.7, and AVE was greater than 0.5. Therefore, the items were retained for conceptual purposes.

Table 2: Measurement model

Variables	Items	Loadings	CR	AVE
Technology and Innovation Capability (TIC).			0.971	0.783
Succession planning forms part of our knowledge management process.	TIC1	0.858		
Our organisation is exploiting captured technology creatively to add value to the organisation.	TIC2	0.818		
Job rotation is practised to transfer technology between the process lines.	TIC3	0.876		
We are successful in developing new products.	TIC4	0.818		
It is important for our company to make changes in the appearance, packaging, shape, and volume of our products.	TIC5	0.892		
We constantly benefit from technology to enhance the quality of products.	TIC6	0.933		
Our firm actively carries out its work in creating new products.	TIC7	0.906		
Our company actively works to adjust its business processes constantly.	TIC8	0.925		
Our company constantly looks for new ways to deliver our products to our customers.	TIC9	0.931		
Variables	**Items**	**Loadings**	**CR**	**AVE**
Sustainability Orientation (SO).			0.967	0.773
Compared to competitors, we are very often the first business to introduce new sustainable products.	SO1	0.835		
Compared to competitors, we are very often the first business to introduce new sustainable operating technologies.	SO2	0.847		
Compared to competitors, we are very often the first business to introduce new sustainable administrative techniques.	SO3	0.876		
We provide higher quality sustainable products than the competitors.	SO4	0.899		
We provide superior sustainable solutions to our customers' problems.	SO5	0.918		
We offer unique sustainable benefits to the customer, not offered by competitors.	SO6	0.877		
We respond quickly to environmental changes.	SO7	0.897		
We perceive new business opportunities more quickly than our competitors.	SO8	0.899		
In general, we have a strong preference for low-risk projects with normal and certain rates of return.	SO9	0.863		

Variables	Items	Loadings	CR	AVE
Organisational Culture (OC).			0.984	0.853
There is a clear set of values that governs the way we are doing business.	OC1	0.913		
Leaders set goals that are ambitious but realistic.	OC2	0.923		
The leadership has written down the objectives we are trying to meet.	OC3	0.933		
It is easy to reach a consensus, even on difficult issues.	OC4	0.918		
There is a good alignment of goals across levels.	OC5	0.937		
When disagreements occur, we work hard to achieve "win-win" solutions.	OC6	0.947		
Our approach to doing business is very consistent and predictable.	OC7	0.937		
Attempts to create change usually meet new resistance.	OC8	0.837		
There is a long-term purpose and direction.	OC9	0.951		
We have a shared vision of what the organisation will be like in the future.	OC10	0.941		
We can meet short-term demands without compromising our long-term vision.	OC11	0.927		
Variables	**Items**	**Loadings**	**CR**	**AVE**
Government Support (GS).			0.940	0.846
Conducive infrastructure helps us in achieving a sustainable development environment in our organisation.	GS1	0.908		
Appropriate support services encourage the practices of sustainable development in our organisation.	GS2	0.938		
Government policies influence the practices of sustainable development in our organisation.	GS3	0.949		
Government assists us in accessing unique resources that are useful for sustainable competitive advantages of our organisation.	GS4	0.883		
Variables	**Items**	**Loadings**	**CR**	**AVE**
Sustainable Development (SD).			0.988	0.888
A leader has the right talent to make a difference.	SD1	0.897		
A leader applies ways to respond rapidly to change.	SD2	0.948		
A leader can anticipate market expectations.	SD3	0.918		
A leader is open to feedback from all levels and functional areas of the organisation.	SD4	0.933		
A leader always seeks feedback from all levels in the organisation.	SD5	0.947		
A leader is aware of the environment that is outside of the organisation.	SD6	0.928		
A leader constantly improves the product.	SD7	0.960		

A leader can collaborate to network thinking around complexity.	SD8	0.968
A leader seed organisation with generative properties and uses for day-to-day performance.	SD9	0.953
A leader seeks out a clear direction.	SD10	0.959
A leader helps the team in synchronising efforts.	SD11	0.952

The next process was to test discriminant validity using the heterotrait-monotrait ratio of correlations (HTMT), as proposed by Henseler *et al*. (2015). Discriminant validity is accepted if the HTMT value is below 0.85. As shown in Table 3, all the HTMT values for each construct were below the threshold. Thus, it can be concluded that the measurements are valid and reliable, and all constructs in this study are distinct.

Structural Model

To calculate the standard deviation, t-values and p-values, a bootstrap method with 5,000 samples was employed (Hair *et al.*, 2019). First, the study's in-sample prediction was assessed by evaluating the R^2. The R^2 was 0.521, indicating that all four variables explain 52.1% of the variance in sustainable development.

The hypotheses were tested by processing values obtained from the bootstrapping procedure. The hypothesis test on direct effects in Table 4 indicates that technology and innovation capabilities ($b = 0.314$, $t = 2.985$, $p < 0.05$), sustainability orientation ($b = 0.118$, $t = 2.093$, $p < 0.05$), and organisational culture ($b = 0.431$, $t = 3.955$, $p < 0.05$) have a direct and significant effect on sustainable development. Therefore, H1, H2, and H3 are supported. However, there is insufficient statistical evidence to suggest government support ($b = 0.010$, $t = 0.159$, $p > 0.05$) is significantly related to sustainable development. As such, H4 is not supported.

Discussion

According to the study's findings, organisational culture, sustainability orientation, and technology and innovation capabilities all significantly contribute to sustainable development. These findings are in agreement with Onsel *et al.* (2008), De Medeiros *et al*. (2014), and Ulrich *et al.* (2016). A firm's

Table 3: Discriminant validity (HTMT ratio)

Variable	OC	GS	SO	TIC	SD
OC					
GS	0.420				
SO	0.391	0.377			
TIC	0.524	0.507	0.492		
SD	0.651	0.394	0.442	0.607	

Table 4: Results of hypothesis testing

Hypothesis	Path	Beta	Standard Error	t-value	p-value	Decision
H1	TIC-> SD	0.314	0.105	2.985	0.003	Supported
H2	SO-> SD	0.118	0.056	2.093	0.035	Supported
H3	OC-> SD	0.431	0.109	3.955	0.000	Supported
H4	GS-> SD	0.010	0.065	0.159	0.874	Not supported

competitive edge is influenced by potential technology in addition to research and development. The reality is that, due to the rapidly evolving nature of technology and condensed product life cycles, most businesses are unable to develop cutting-edge technology in-house.

In this case, firms must swiftly integrate, adjust, and upgrade their internal and external information retrieval, storage, and analytical tools related to essential work activities, and business and management functions, alongside external technologies and on-time product launches. In light of this, identifying internal characteristics that foster technological innovation capabilities may improve a firm's understanding of inventive processes (Kafetzopoulos & Psomas, 2015). Since actors in a network work together to innovate technology, networking and social skills are crucial for technological activities. Design can be accomplished by incorporating additional capabilities from outside sources (Becker & Dietz, 2004). Collaboration with academic and research institutions, in particular, has a positive impact on product creation (Nieto & Santamara, 2007). Specifically, through such partnerships, businesses can acquire new scientific information from universities and research facilities, which may aid in the development of innovative products or processes (Wu *et al.*, 2015).

Entrepreneurs who focus on sustainability manage the triple bottom line; thus, they are willing to seek possibilities that result in sustainability gains at the expense of profits. Social orientation and altruism are important components of a sustainable orientation at the psychological level, according to Corral-Verdugo *et al.* (2009). Additionally, a study by Dacko *et al.* (2013) suggested that organisations that are inclined to conduct profitable business operations will exhibit innovativeness as a result of their sustainable orientation. Sustainable development is viewed as a means to obtain a competitive edge by recognising sustainability as a new business opportunity, which results in creative and sustainable products, production methods, and business practices. One of the most important aspects of sustainable development is the mobilisation of individual and interconnected resource stocks that support and contribute to sustainability activities within their natural context. To promote sustainable development and achieve superior financial performance, SMEs must focus on their fundamental drivers and sustainable competitive advantage, namely technology and innovation competence and sustainability orientation.

Every organisation needs a strong culture because it affects how individuals and groups behave and perform (Ulrich *et al.*, 2016). Organisational culture was one of many possible sustainability drivers examined in this study. A variety of organisational phenomena are significantly influenced by culture and the values and ethics ingrained in different cultures may be especially crucial for understanding and motivating socially and ecologically conscious corporate activities (Linnenluecke & Griffiths, 2010).

However, sufficient data does not support a correlation between government support and sustainable development in the SME sector. These findings conflict with those of Anholon *et al.* (2007) and Hasna (2018). The majority of the SMEs in this study are still considered to be start-ups, as they were established less than 10 years ago, which may explain the low levels of engagement and commitment in management systems revealed in these findings. New enterprises are frequently impacted by the liabilities of newness and smallness (Aldrich & Auster, 1986), which restrict their access to resources that could assist their sustainable development initiatives.

Government support for business start-ups includes a comprehensive strategy comprising financial assistance, policy implementation, incentive programmes, and various support services (Choi *et al.*, 2021). Financial and credit assistance, including grants, loans, and subsidies is tailored to facilitate capital acquisition and offset operational expenses for entrepreneurs.

Policies and incentives are important for fostering a conducive business environment by providing tax benefits and regulatory support. Additionally, government contracts and projects offer individuals opportunities to engage in the public sector (Audretsch *et al.*, 2020). Technical and training assistance primarily focuses on skill development and knowledge enhancement, thereby equipping entrepreneurs with the essential resources for success.

In the context of this research, although government support for sustainable development is important, the lack of effective execution has hindered this relationship. Ineffective execution of government support significantly slows progress towards sustainable development. For instance, the ineffective selection process for SMEs eligible to benefit from these initiatives due to bias leads to inefficient allocation of resources and failure to target the most deserving and impactful businesses, thereby undermining the intended objectives of the government support initiatives (Tamm *et al.*, 2012; Bennett & Lemoine, 2014). Consequently, poor selection processes cause deserving SMEs to miss out on growth opportunities and the inability of the leaders with the VUCA approach to secure funds for expansion or innovation could impede their progress towards long-term success.

Theoretical and Practical Implication

This study identifies several gaps in prior research on sustainable entrepreneurship, as highlighted by various researchers. First, much work has focused on relatively conventional practices in developed countries with little emphasis on traditional industries. This emergent form of entrepreneurship seems to possess distinct features, and the process through which sustainability opportunities are pursued appears to be more complex than its traditional counterpart (Shepherd & Patzelt, 2011). Thus, knowledge of sustainable entrepreneurship in emerging economies is quite limited and less explored (Hall et al., 2010). This study investigates a sample of Malaysian SMEs in emerging economies with a focus on food and beverage industries to determine if the results are comparable with those from developed countries.

Previous research has not emphasised the importance of adopting the VUCA approach in leadership. This study introduces elements towards more sustainable practices such as initial knowledge related to management systems in the food and beverage industry, incorporating technology and innovation into manufacturing processes, cultivating sustainable practices in business, and approaching companies with entrepreneurship mentoring agencies (Jinil Persis *et al.*, 2021). As such, this research identifies a technique for improving the management of a firm, making it more sustainable, competitive, and resilient in the market.

If prior research has not fully clarified the determinants of sustainable development in emerging economies (Kautonen *et al.*, 2020), this study sheds light on the relationships among technology and innovation capabilities, sustainability orientation, organisational culture, government support, and sustainable development.

This study has vital business implications in terms of best practices for Malaysian SME to improve performance. The government may use the findings from this research to create or modify policies and regulations that should enhance the competitiveness of SMEs in Malaysia.

Research Limitations

One of the limitations of this research is its tendency towards bias in the sample. The study may not completely represent the broader SME community as it focused solely on the food and beverage sector. The results may not fairly reflect the diversity of enterprises or the whole spectrum of factors influencing sustainable development and performance in the sector if some type of SMEs are significantly over or underrepresented in the sample.

Another limitation is the use of self-reported data. Response bias may have been introduced

when SME owners and managers were surveyed or interviewed. It is possible that respondents provided socially acceptable answers or misreported their performance and sustainability practices, which would have affected the results. This limitation compromises the study's validity and reliability and could make it more difficult to draw inferences from the data.

Furthermore, the cross-sectional design of the study presents a constraint. As data was collected at a single point in time, the research may not accurately reflect the dynamic nature of sustainable development in the food and beverage sector. The relationships between determinants and sustainable development may change over time due to shifts in internal operations, market conditions, or external factors. Without longitudinal data or a longitudinal study design, the study's ability to determine causal relationships and account for changes in time is limited, which could otherwise enhance understanding of sustainability dynamics in SMEs.

Recommendations for Future Research

A mixed-method approach is recommended to enhance both the breadth and depth of research on factors influencing sustainable development among SMEs in the food and beverage sector. To obtain a full knowledge of the intricate dynamics involved, it would be beneficial to integrate qualitative and quantitative methods. By combining findings from both approaches, researchers can validate results, strengthen the reliability of their conclusions, and provide more nuanced recommendations for industry stakeholders and policymakers seeking to support sustainability in Malaysian SMEs within the food and beverages sector.

It is also suggested that future researchers explore this model in other industries to improve the applicability and generalisability of the findings from the current study. Examining the framework's suitability and effectiveness across diverse industries could provide important insights into the transferability of sustainable development methods and approaches. Researchers can find similarities, variances, and sector-specific issues by looking at how factors like organisational culture, government support, technological innovation, and sustainability orientation affect sustainable development in industries other than food and beverages.

Conclusions

Sustainable development is essential for the expansion and survival of SMEs. By adopting sustainable practices, SMEs can mitigate the risks associated with environmental, social, and economic issues. In the long term, SMEs can reduce operating expenses and their ecological footprint by implementing eco-friendly practices, including waste reduction, energy optimisation, and the utilisation of renewable resources. Customers often perceive sustainable practices favourably, gravitating towards companies that prioritise ethics, environmental stewardship, and social responsibility in today's ethical marketplace. SMEs may build a devoted clientele, improve brand recognition, and stand out in a competitive market by incorporating sustainability into their core principles. Furthermore, SMEs benefit from sustainable development in terms of efficiency and innovation. Promoting a sustainable culture encourages staff members to come up with and execute creative solutions, which boosts output, streamlines procedures, and eventually increases profitability. Adopting sustainable practices and technology can also open up new collaborations and markets, giving SMEs the chance to reach a wider audience and work with other like-minded businesses. In addition, SMEs can strengthen their resilience against market fluctuations, resource shortages, and social unrest by incorporating sustainable practices. This resilience is crucial for SMEs to overcome obstacles, adapt to changing market needs, and continue operating over time.

In the manufacturing sector, technology and innovation capacities are essential foundations that drive sustainable growth. They are crucial in transforming procedures, goods, and strategies towards environmental, social, and economic

sustainability. These capabilities facilitate a symbiotic relationship between industrial progress and sustainability. Technological innovations enable the manufacturing sector to optimise resource utilisation. Automation, data analytics, and machine learning are examples of innovations in industrial processes that enable the efficient use of raw materials, energy, and water, thereby reducing waste and environmental impact. By implementing smart manufacturing methods, businesses can reduce their carbon footprint, conserve resources, and improve overall operational efficiency. Furthermore, innovation in manufacturing fosters the development of eco-friendly materials and products. Manufacturing processes that incorporate renewable resources, biodegradable components, and sustainable materials ensure that products are environmentally responsible throughout their entire life cycle. This shift towards sustainable products not only meets consumer demand for environmentally friendly solutions but also greatly lessens the environmental impact of conventional production techniques.

Since it incorporates social, economic, and environmental factors into its operations, sustainability orientation is essential for the long-term viability and growth of SMEs. By adopting a sustainability-oriented approach, SMEs can reduce their environmental impact through the implementation of eco-friendly practices, waste reduction, and optimisation of resource consumption. This enhances market competitiveness and draws in environmentally conscious customers while also supporting the preservation of natural resources and catering to consumer preferences. A focus on sustainability promotes social responsibility among SMEs by encouraging fair salaries, ethical labour practices, and community involvement. SMEs make a beneficial impact on society by investing in their workers and local communities. This leads to stronger relationships with stakeholders and a more favourable business environment. Furthermore, efficiency and innovation can be stimulated by a sustainability mindset. SMEs that place a high priority on sustainability frequently seek cutting-edge technology and solutions that lower costs, boost output, and open up new market niches. In the face of resource constraints, legislative changes, and market swings, this promotes resilience.

One of the most important factors in supporting sustainable development in SMEs is organisational culture. Fundamentally, a strong organisational culture directs the activities, choices, and relationships of a business, impacting its sustainability strategy. SMEs may enhance their long-term profitability and resilience by fostering a culture that supports sustainability activities, which also has a good influence on society and the environment. Resource management that is conscientious and based on sustainability is encouraged by a robust culture. This includes reducing waste, using energy efficiently, and adopting eco-friendly behaviours. SMEs can minimise their environmental impact, cut expenses through resource optimisation, and improve their standing with environmentally sensitive customers by integrating sustainability into their daily operations. Moreover, a strong organisational culture focused on sustainability is likely to attract and retain top talent. Employers who share their values and provide a sense of purpose beyond financial achievement are increasingly appealing to prospective employees. A commitment to sustainability can raise staff morale, engagement, and productivity as it connects employees to a greater purpose. This cultivates a more driven and united workforce in SMEs.

Small and medium enterprises can only flourish when the government supports them with resources and an environment conducive to their growth while maintaining social, economic, and environmental stability. Firstly, financial aid and incentives like grants, low-interest loans, and tax breaks enable SMEs to invest in sustainable practices like implementing energy-efficient systems, adopting eco-friendly technologies, or creating environmentally conscious products. Governments can also provide specialised training programmes and consulting services

to educate SMEs on sustainable business practices and equip them with the knowledge and skills necessary to integrate sustainability into their operations successfully. Additionally, government-established frameworks and policies can compel or incentivise SMEs to adhere to environmental legislation and sustainability standards, which will promote a transition to more environmentally friendly and socially conscious business models. By enforcing regulations for waste management, pollution control, and the use of renewable energy, governments ensure that SMEs play a positive role in environmental preservation.

Furthermore, government support can facilitate knowledge-sharing and innovation in sustainable technologies and practices through partnerships and collaborations with larger firms, research institutes, or non-governmental organisations. Government incentives may also involve the establishment of networks or platforms that connect environmentally conscious investors, markets, and customers with sustainable SMEs. Facilitating market access helps these companies grow and become more visible, supporting their financial sustainability. Lastly, government-backed public awareness initiatives and certifications can enhance customer confidence and demand for products made sustainably, encouraging SMEs to view sustainability as a competitive differentiator.

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Conflict of Interest Statement

The authors declare that they have no conflict of interest.

References

Adelman, I. (1999). *The role of government in economic development*. CUDARE Working Papers 25039, University of California.

Aldrich, E. A., & Auster, E. R. (1986). Even dwarfs started small: Liabilities of age and size and their strategic implications. *Research in Organisational Behaviour*, *8*, 165-198.

Anholon, R., Rampasso, I. S., Ordonez, R. E. C., Da Silva, D., Quelhas, O. L. G., & Filho, W. L. (2018). Observed difficulties during implementation of quality management systems in Brazilian manufacturing companies. *Journal of Manufacturing Technology Management*, *29*(1), 149-167.

Apostolopoulos, N., Al-Dajani, H., Holt, D., Jones, P., & Newbery, R. (2018). Entrepreneurship and the sustainable development goals. *Contemporary Issues in Entrepreneurship Research*, *8*, 1-7.

Audretsch, David, Colombelli, A., Grilli, L., Minola, T., & Rasmussen, E. (2020). Innovative start-ups and policy initiatives. *Research Policy*, *49*(10), Article 104027.

Becker, W., & Dietz, J. (2004). R&D cooperation and innovation activities of firms - Evidence for the German manufacturing industry. *Research Policy, 33*(2), 209-223.

Bennett, N., & Lemoine, G. J. (2014). What a difference a word makes: Understanding threats to performance in a VUCA world. *Business Horizons*, *57*, 311-317.

Brown, L. R. (1991). *The state of the world*. Worldwatch Institute.

Browning, M. H. E. M., & Rigolon, A. (2019). School green space and its impact on academic performance: A systematic literature review. *International Journal of Environmental Research and Public Health*, *16*(3), Article 429.

Carpano, C., Chrisman, J. J., & Roth, K. (1994). International strategy and environment: An

assessment of the performance relationship. *Journal of International Business Studies*, *25*(3), 639-656.

Chang, A. Y., & Cheng, Y. T. (2019). Analysis model of the sustainability development of manufacturing small and medium-sized enterprises in Taiwan. *Journal of Cleaner Production*, *207*, 458-473.

Choi, S.-K., Han, S., & Kwak, K.-T. (2021). Innovation capabilities and the performance of start-ups in Korea: The role of government support policies. *Sustainability*, *13*(11), Article 6009.

Claudy, M. C., Peterson, M., & Pagell, M. (2016). The roles of sustainability orientation and market knowledge competence in new product development success. *Journal of Product Innovation Management*, *33*, 72-85.

Corral-Verdugo, V., Bonnes, M., Tapia-Fonllem, C., Fraijo-Sing, B., Frías-Armenta, M., & Carrus, G. (2009). Correlates of pro-sustainability orientation: The affinity towards diversity. *Journal of Environmental Psychology*, *29*(1), 34-43.

Dacko, S. G., Claudy, M., Garcia, R., & Wilner, S. J. (2013). Sustainability orientation as a driver of innovation within firms [Paper Presented]. *The ISPIM Conference Proceedings*.

De Medeiros, J. F., Ribeiro, J. L. D., & Cortimiglia, M. N. (2014). Success factors for environmentally sustainable product innovation: A systematic literature review. *Journal of Cleaner Production*, *65*, 76-86.

Delgado-Verde, M., Martín-De Castro, G., & Emilio Navas-López, J. (2011). Organisational knowledge assets and innovation capability: Evidence from Spanish manufacturing firms. *Journal of Intellectual Capital*, *12*(1), 5-19.

Desa, A., Kadir, N. B. A., & Yosoof, F. (2012). Waste education and awareness strategy: Towards solid waste management. *Procedia - Social and Behavioral Sciences*, *59*(1), 47-50.

Doheny, M., Nagali, V., & Weig, F. (2012). Agile operations for volatile times. *Quarterly*, *3*, 126-131.

Dyck, B., Walker, K., & Caza, A. (2019). Antecedents of sustainable organizing: A look at the relationship between organisational culture and the triple bottom line. *Journal of Cleaner Production*, *231*, 1235-1247.

Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st century business*. Capstone Publishing.

Fiedler, F. E. (1996). Research on leadership selection and training: One view of the future. *Administrative Science Quarterly*, *41*(2), 241-250.

Fishbein, M., & Ajzen, I. (1975). *Beliefs, attitudes*, *intention*, *and behavior*. Wesley Publishing.

Flamholtz, E. G., & Randle, Y. (2012). Corporate culture, business models, competitive advantage, strategic assets and the bottom line. *Journal of Human Resource Costing & Accounting*, *16*(2), 76-94.

Fonseca, J. P. C., Ferreira, F. A. F., Pereira, L. F., Govindan, K., & Meidutė-Kavaliauskienė, I. (2020). Analyzing determinants of environmental conduct in small and medium-sized enterprises: A sociotechnical approach. *Journal of Cleaner Production*, *12*(8), Article 120380.

Foray, D. (Ed.). (2009). *Innovation policy for development*: *A review*. Elgar.

Glavas, A., & Mish, J. (2015). Resources and capabilities of triple bottom line firms: Going over old or breaking new ground? *Journal of Business Ethics*, *127*(3), 623-642.

George, G., Wang, H., Tong, L., & Takeuchi, R. (2016). Corporate social responsibility: An overview and new research direction.

Academic of Management Journal, *59*(2), 1-24.

Gimenez, C., Sierra, V., & Rodon, J. (2012). Sustainable operations: Their impact on the triple bottom line. *International Journal of Production Economics*, *140*(1), 149-159.

Hair, J. F. J., Money, A. H., Samouel, P., & Page, M. (2007). *Research methods for business*. Wiley.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2-24.

Hall, J. K., Daneke, G. A., & Lenox, M. J. (2010). Sustainable development and entrepreneurship: Past contributions and future directions. *Journal of Business Venturing*, *25*(5), 439-448.

Harper, S. M., & Becker, S. W. (2004). On the leading edge of innovation: A comparative study of innovation practices. *Southern Business Review*, *29*(2), 1-15.

Hart, S. L. (1995). A natural-resources-based view of the firm. *Academy of Management Review*, *20*(4), 986-1014.

Hasna, A. M. (2007). Dimensions of sustainability. *Journal of Engineering for Sustainable Development: Energy*, *Environment*, *and Health*, *2*(1), 47-57.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135.

Holt, E., & Shattuck, A. (2011). Food crises, food regimes and food movements: Rumblings of reform or tides of transformation? *Journal of Peasant Studies*, *38*(1), 109-144.

Hsieh, M. H., & Tsai, K. H. (2007). Technological capability, social capital and the launch strategy for innovative products. *Industrial Marketing Management*, *36*(4), 493-502.

Jinil Persis, D., Venkatesh, V. G., Raja Sreedharan, V., Shi, Y., & Sankaranarayanan, B. (2021). Modelling and analysing the impact of Circular Economy; Internet of Things and ethical business practices in the VUCA world: Evidence from the food processing industry. *Journal of Cleaner Production*, *3*(1), Article 126871.

Kafetzopoulos, D., & Psomas, E. (2015). The impact of innovation capability on the performance of manufacturing companies the Greek case. *Journal of Manufacturing Technology Management*, *26*(1), 104-130.

Kautonen, T., Schillebeeckx, S. J. D., Gartner, J., Hakala, H., Salmela-Aro, K., & Snellman, K. (2020). The dark side of sustainability orientation for SME performance. *Journal of Business Venturing Insights*, *14*(5), Article e00198.

Kemp, R., Parto, S., & Gibson, R. B. (2005). Governance for sustainable development: Moving from theory to practice. *International Journal of Sustainable Development*, *8*(1-2), 12-30.

Klewitz, J., & Hansen, E. G. (2011, June 12-15). Sustainability-oriented innovation in SME's: A systematic literature review of existing practices and actors involved. *ISPIM Conference*, *Sustainability in Innovation: Innovation Management Challenges*.

Kuckertz, A., & Wagner, M. (2010). The influence of sustainability orientation on entrepreneurial intentions - Investigating the role of business experience. *Journal of Business Venturing*, *25*(5), 524-539.

Le, C. L. V. (2010). *Technical efficiency performance of Vietnamese manufacturing small and medium enterprises* [Doctoral thesis, University of Wollongong].

Liargovas, P., Apostolopoulos, N., Pappas, I., & Kakouris, A. (2017). SMEs and green growth: The effectiveness of support mechanisms and initiatives matters. In

Renko, S., & Peštek, A. (Eds.), *Green economy in the Western Balkans towards a sustainable future* (pp.79-108).

Linnenluecke, M. K., & Griffiths, A. (2010). Corporate sustainability and organisational culture. *Journal of World Business*, *45*(4), 357-366.

Lozano, R., Carpenter, A., & Huisingh, D. (2015). A review of "theories of the firm" and their contributions to corporate sustainability. *Journal of Cleaner Production*, *106*, 430-442.

Malhotra, N. K. (2007). *Marketing research, an applied orientation* (5th ed.). Pearson.

Manshor, M. & Saad, M. N. (2022). Determinants of sustainable development among Malaysian small and medium enterprises: A quality of work life approach. *Empirical Economics Letters*, *21*(2).

Manshor, M., & Saad, M. N. (2023). Determinants of sustainable development among Malaysian small and medium enterprises: A new conceptual framework. *Information Management and Business Review*, *15*(1), 94-105.

Mazutis, D., & Sweet, L. (2022). The business of accelerating sustainable urban development: A systematic review and synthesis. *Journal of Cleaner Production*, *1*(1), Article 131871.

Mcfadzean, E., O'loughlin, A., & Shaw, E. (2005). Corporate entrepreneurship and innovation part 1: The missing link. *European Journal of Innovation Management*, *8*(3), 350-372.

Mclver, J. P., & Carmines, E. G. (1981). Analyzing model with unobserved variable: Analysis of covariance structures. *Social Measure*, *1*(1), 65-115.

Mcwilliams, A., Parhankangas, A., Coupet, J., Welch, E., & Barnum, D. T. (2014). Strategic decision-making for the triple bottom line. *Business Strategy and the Environment*, *25*(3), 193-204.

Meric, H. (1994). The effect of scale from choice on psychometric properties of patient satisfaction measurement. *Health Marketing Quarterly*, *11*(3/4), 27-39.

Muñoz, P., & Cohen, B. (2018). Sustainable entrepreneurship research: Taking stock and looking ahead. *Business Strategy and the Environment*, *27*(3), 300-322.

Nematollahi, M., Hosseini-Motlagh, S. M., & Heydari, J. (2017). Coordination of social responsibility and order quantity in a two-echelon supply chain: A collaborative decision-making perspective. *International Journal of Production Economics*, *184*, 107-121.

Nieto, M. J., & Santamaría, L. (2007). The importance of diverse collaborative networks for the novelty of product innovation. *Technovation*, *27*(6-7), 367-377.

Northouse, P. G. (2012). *Leadership: Theory and practice.* Thousand Oaks, CA: Sage Publications..

Oke, A. (2007). Innovation types and innovation management practices in service companies. *International Journal of Operations and Production Management*, *27*(6), 564-587.

Onsel, S., Ulengin, F., & Kabak, O. (2008). A cluster-based approach for the innovation assessment of countries. *International Engineering Management Conference*, *Europe: Managing Engineering*, *Technology and Innovation for Growth*, pp. 1-5.

Oruc, I., & Sarikaya, M. (2011). Normative stakeholder theory in relation to ethics of care. *Social Responsibility Journal*, *7*(3), 381-392.

Papalexandris, N., & Galanaki, E. (2009). Leadership's impact on employee engagement: Differences among entrepreneurs and professional CEOs. *Leadership and Organisation Development Journal*, *30*(4), 365-385.

Patzelt, H., & Shepherd, D. A. (2011). Recognizing opportunities for sustainable development. *Entrepreneurship Theory and Practice*, *35*(4), 631-652.

Porter, M. E., & Linde, C. Van Der. (1995). Green and competitive: Ending the stalemate green and competitive. *Harvard Business Review*, *73*(5), 120-134.

Prasad, J. T. S. (2015). Cross cultural management. *International Journal Article Information*, *15*(1), 5-19.

Prashar, A., & Sunder M., V. (2020). A bibliometric and content analysis of sustainable development in small and medium-sized enterprises. *Journal of Cleaner Production*, *1*(1), Article 118665.

Roth, K., & O'donnell, S. (1996). Foreign subsidiary compensation strategy: An agency theory perspective. *Academy of Management Journal*, *39*(3), 678-703.

Saad, M. N., & Manshor, M. (2023). Determinants of sustainable development among Malaysian small and medium enterprises. *International Journal of Service Management and Sustainability*, *8*(1), 25-52.

Santinha, G., & De Castro, E. A. (2010). Creating more intelligent cities: The role of ICT in promoting territorial governance. *Journal of Urban Technology*, *17*(2), 77-98.

Sarango-Lalangui, P., Santos, J. L. S., & Hormiga, E. (2018). The development of sustainable entrepreneurship research field. *Sustainability*, *10*(6), 1-19.

Savage, D., & Dasgupta, S. (2006). *Governance framework delivery of urban services*. Oxford University Press.

Schick, A., Hobson, P. R., & Ibisch, P. L. (2016). Conservation and sustainable development in a vuca world: The need for a systemic and ecosystem-based approach. *Ecosystem Health and Sustainability*, *3*(4), 1-12.

Schwab, L., Gold, S., & Reiner, G. (2019). Exploring financial sustainability of SMEs during periods of production growth: A simulation study. *International Journal of Production Economics*, *212*(October 2018), 8-18.

Shambach, S. A. (2004). Strategic leadership primer. *Journal of Chemical Information and Modeling*, *53*(2), 1689-1699.

Shepherd, D. A., & Patzelt, H. (2011). The new field of sustainable entrepreneurship: Studying entrepreneurial action linking "what is to be sustained" with "what is to be developed". *Entrepreneurship: Theory and Practice*, *35*(1), 137-163.

Shepherd, T. (2004). Managing the future: Foresight in the knowledge economy. *Academy of Management Review*, *30*(4), 871-873.

Shi, L., Han, L., Yang, F., & Gao, L. (2019). The evolution of sustainable development theory: Types, goals, and research prospects. *Sustainability*, *11*(24).

Slotegraaf, R. J. (2012). Keep the door open: Innovating toward a more sustainable future. *Journal of Product Innovation Management*, *29*(3), 349-351.

SME Corp (2021). *SME Annual Report 2021*. SME Corporation Malaysia.

Sumin, V., Rezai, G., & Mohamed, Z. (2016). Factors affecting the implementation of green practices among traditional and complementary herbal-based entrepreneurs in Malaysia. *Journal of Food Products Marketing*, *1*(1), 79-87.

Tamm, L., Narad, M. E., Antonini, T. N., Obrien, K. N., Hawk, L. W., & Epstein, J. N. (2012). Reaction time variability in ADHD: A review. *Neurotherapeutics*, *9*(3), 500-508.

Terán-Yépez, E., Marín-Carrillo, G. M., Casado-Belmonte, M. Del P., & Capobianco-Uriarte, M. De Las M. (2020). Sustainable entrepreneurship: Review of its evolution and new trends. *Journal of Cleaner Production*, *252*, Article 119742.

Trainer, T. (1995). *Towards a sustainable economy: The need for fundamental change*. Jon Carpenter Publishing.

Ulrich, D., & Brockbank, W. (2016). Creating a winning culture: Next step for leading HR professionals. *Strategic HR Review*, *15*(2), 51-56.

Van Der Waldt, G. (2007). The role of government in sustainable development: Towards a conceptual and analytical framework for scientific inquiry. *Administratio Publica*, *24*(2), 49-72.

Van Kleef, J. A. G., & Roome, N. J. (2007). Developing capabilities and competence for sustainable business management as innovation: A research agenda. *Journal of Cleaner Production*, *15*(1), 38-51.

Wagner, M. (2012). Ventures for the public good and entrepreneurial intentions: An empirical analysis of sustainability orientation as a determining factor. *Journal of Small Business and Entrepreneurship*, *25*(4), 519-531.

Walker, R. M., Damanpour, F., & Devece, C. A. (2011). Management innovation and organisational performance: The mediating effect of performance management. *Journal of Public Administration Research and Theory*, *21*(2), 367-386.

World Commission on Environment and Development. (1987). *Report of the world commission on environment and development: Our common future.* United Nations.

Wu, K. J., Liao, C. J., Tseng, M. L., & Chou, P. J. (2015). Understanding innovation for sustainable business management capabilities and competencies under uncertainty. *Sustainability*, *7*(10), 13726-13760.

Yang, C. (2008). The relationships among leadership styles, entrepreneurial orientation, and business performance. *Managing Global Transitions International Research Journal, 6*(3), 257-275.

Yusoff, T., Wahab, S. A., Latiff, A. S. A., Osman, S. I. W., Zawawi, N. F. M., & Fazal, S. A. (2018). Sustainable growth in SMEs: A review from the Malaysian perspective. *Journal of Management and Sustainability*, *8*(3), Article 43.

Zeng, J. (2017). Fostering path of ecological entrepreneurship within big data network systems. *International Entrepreneurship and Management Journal*, *14*(1), 79-95.