

## Article

# Entrepreneurial Leadership and Sustainable Performance of Manufacturing SMEs in Malaysia: The Contingent Role of Entrepreneurial Bricolage

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**Abstract:** The purpose of this research is to delve into the effect of entrepreneurial leadership (EL) on the economic, environmental, and social aspects of sustainable performance; the research also focuses on the contingency role of entrepreneurial bricolage (EB). The increasing concern focused on the triple bottom line (TBL) issues has triggered enthusiasm and inspiration in the field of sustainable entrepreneurship, especially amongst the small medium enterprise (SME) owners or leaders who are directly responsible for organizational sustainable performance. This research examines the relationships between EL and economically sustainable performance (ECSPF), environmentally sustainable performance (ENSPF), and social sustainable performance (SOSPF); these relationships are contingent upon EB through the lens of Upper Echelons Theory (UET) and Effectuation Theory (ET). A total of 146 responses from a cross-sectional survey from Malaysian manufacturing SMEs were investigated using Partial Least Squares-Structural Equation Modeling (PLS-SEM). The findings reveal that EL has significant effects on ENSPF and SOSPF, but has an insignificant effect on ECSPF. Meanwhile, EB does not play the contingent role in strengthening the relationships between EL and ECSPF, EL and ENSPF, and EL and SOSPF. This research highlights the importance of EL and shows that SME owners or leaders should embrace and develop their skills as a crucial step towards achieving sustainable performance for their companies. The implications and limitations of the research are discussed and recommendations for future research are also presented.

**Keywords:** entrepreneurial leadership; entrepreneurial bricolage; manufacturing SMEs; sustainable performance; sustainability

## 1. Introduction

The ecosystem is currently facing massive economic, environmental, and societal pressures. Economic crisis, inequalities of chances, unemployment, diseases, conflicts, natural disasters, climate change, and poverty have been placed on the top of universal agenda for sustainable development. Sustainable development refers to the fulfilment of the needs of the present generation without compromising the ability of future generations to meet their own needs [1]. Back in 2015, 190 countries including Malaysia had pledged to achieve 17 Sustainable Development Goals (SDGs) and 169 targets to preserve a better living for the future generation. The resolution aims to transform the world and formulate strategic actions over the next 15 years for good of the planet and its people [2]. The

Eleventh Malaysia Plan (11MP) for 2016–2020 outlined the Malaysian government's commitment to place people at the center piece of all development efforts and pursue green growth initiatives for a better quality of life [3]. Most recently, the government conducted a mid-term review and included the 17 SDGs in their six strategic thrusts as priorities and support for the Sustainable Development 2030 Agenda [4]. The government has also formulated the Shared Prosperity Vision 2030 (SPV 2030) to tackle the challenges of economic disparities and provide a decent standard of living for all Malaysians [5].

Literature on sustainability has appeared since the 1990s. The topic has become the interest of academics and practitioners after 2006 and remains a mainstream research until now [6]. Elkington [7] first introduced the integration of sustainable development into the business setting as the management of the "triple bottom line" (TBL) to achieve economic, environmental, and social goals. Recent scholars such as [8] defined sustainability as the balanced integration of economic performance, social inclusiveness, and environmental resilience, for the benefit of current and future generations. Unfortunately, entrepreneurial actions are conventionally associated with global warming, climate change, and negative social impacts. Current research by [9] indicated that industrial waste including paper, plastic, packaging, and bulky waste from the manufacturing sector form a large part of waste generation in Malaysia. A total of 95% of waste is being dumped into open area landfills, which lack proper protective measures. This undesirable phenomenon is projected to escalate in a few years corresponding to increased economic globalization, population growth, and urbanization. This is because Malaysia's population was expected to reach 33.4 million by the year 2020 and 37.4 million by the year 2030.

In this context, research on sustainability has been a subject of numerous studies but the results have not been conclusive. Some researchers debated whether the predominant drivers of sustainable performance are influenced by innovation and institutional quality [10]; sustainable orientation, intellectual capital, government support, and norms [11]; opportunity, necessity, and personal values [12]; strategic orientations, market orientation, and entrepreneurial orientation [13]; demographic background, work experience, education, and social factors [14]; the enterprise system [15]; or attitudinal and perceptual factors [16].

The importance of leaders has been acknowledged by past researchers such as [17]. They believed that sustainable entrepreneurship encourages leaders or business owners to manage their operations through an alignment between financial, environmental, and social objectives to create a unique TBL. According to [18], managers' environmental responsibilities play a vital role in developing a competitive advantage. However, the concept of entrepreneurial leadership (EL) has been underexposed in sustainability, and therefore needs further research attention [19,20].

In terms of sustainable performance, there are volumes of literature discussing the topic but most of the literature focuses on either environmental [18], social [21], or economic performance [22] separately. Hence, this research will integrate these three elements into one study to close the gap.

According to [23], entrepreneurial bricolage (EB) has both a positive and negative impact on organizational performance. Therefore, the present research is interested in exploring EB as a contingent or moderating variable in the relationship between EL and sustainable performance. Additionally, [24,25] argued that most contributions of sustainable entrepreneurship studies are merely conceptual and theoretical in nature, and require more practical evidence through empirical testing. Meanwhile, previous scholars claimed that most of previous studies give their attention to larger and public listed organizations, which do not reflect what is actually happening in small medium enterprises (SMEs) [13,26]. Therefore, present research will bridge the gaps by conducting empirical research on SMEs.

SMEs are well known as a significant contributor to the leaps and bounds of worldwide economies [27]. In a developing country like Malaysia, SMEs stand high as the backbone of economic growth, dominating 98.5% of total business establishments. SMEs contributed 37.1% to the country's Gross Domestic Product (GDP), 66% of employment, 17.3% of total exports, and assume a vital responsibility in supporting the local big established businesses [28]. SMEs in the manufacturing sector were selected for this research for three reasons. Firstly, manufacturing SMEs in Malaysia

constitute a dominating 97.14% (47,698 companies) of total manufacturing in the country [28]. Secondly, the manufacturing sector is one of the biggest contributors to the national economy; however, its actions currently cause environmental harm [29]. Finally, the majority of SMEs still use obsolete technologies, manage resources inefficiently, and lack pollution control infrastructure [26]. Therefore, they are the primary focus of this research because if they still overlook the concept of sustainability, their legacy will be jeopardized by increasing demand within a short period of time.

This paper is a novel conception due to a lack of focus on certain research areas in prior studies. Much past research did not focus on the relationship between EL and sustainable performance holistically in a way which integrates ECSPF, ENSPF, and SOSPF, contingent upon the EB of manufacturing SMEs in Malaysia. This paper has four main research questions. They are as follows: RQ1: Does EL play a significant role in ECSPF among manufacturing SMEs?; RQ2: Does EL play a significant role in ENSPF among manufacturing SMEs?; RQ3: Does EL play a significant role in SOSPF among manufacturing SMEs?; and RQ4: Does EB strengthen the relationship between EL and sustainable performance (economic, environment, social performance) among manufacturing SMEs? The paper is organized as follows. First, we review the literature of the constructs in a theoretical model and develop a series of hypotheses. Second, we provide explanations for the methods used in this study. Third, we present the results; finally, we discuss the results and implications of the research.

## 2. Literature Review

### 2.1. Entrepreneurial Leadership

The field of EL is very much in its embryonic stage. It has been inadequately defined, and many of the ideas and debates have yet to be accepted in entrepreneurship and small business management studies [19,20]. According to [30], EL involves distinguished leaders who create visions that are essential for actualizing and moving a group of committed followers who execute the vision to achieve strategic value creation. Meanwhile, [31] mentioned that EL recognizes the elements of environment and ethics while making decisions. He found that EL has a legitimate role in the development, growth, and sustainability of non-profit enterprises.

Greenberg, McKone-Sweet, and Wilson [32] illustrated that EL are leaders who show empathy towards themselves and their workplaces, take action, and shape opportunities that generate value for their firms, stakeholders, and broader society. They formulated The Three Principles of EL that encompass Cognitive Ambidexterity (CA), Social, Environmental, and Economic Responsibility (SEERS), and Self and Social Awareness (SSA). The Babson College team adopted these principles in their breakthrough curriculum to teach future entrepreneurs how to think and react critically and rationally, to attempt to achieve a superior self and social consciousness, and to attain outstanding outcomes [33]. In addition, entrepreneurial leaders are required to not only promote new products and processes, but also to endorse new strategic directions and solve complex business, social, and environmental problems [34].

Renko, El Tarabishy, Carsru, and Brännback [35] reinforced that EL entails the influencing and directing of the performance of group members toward the achievement of organizational goals; this involves the recognition and exploitation of entrepreneurial opportunities. Rather than giving rewards and punishments, bold and innovative entrepreneurial leaders trigger their followers with empowerment. The consequence of such opportunity-focused behavior makes their followers feel more in control of their firms' future. When evaluated by their employees, EL is more predominant among founder leaders than among non-founder leaders in organizations. A mixed-method study by [19] agreed that entrepreneurial leaders possess distinct characteristics and are explicitly perceived as persons with a vision, passion, integrity, and self-confidence. Indeed, EL plays a pivotal role in organizations facing a turbulent environment, and therefore requires greater research attention. Another recent study by [36] defined EL as a unique leadership style that focuses on creating heterogeneous talents; it also involves working creatively and innovatively on shared processes in an organization

to respond to an ambiguous business environment (innovation process), as well as to make coherent strategies and obtain novel results (innovation performance).

According to Sklaveniti [37], EL arises from the co-action of venture's participants that intersects between entrepreneurship and leadership fields through the processes of creativity and direction. These processes drive the new venture forward and EL is conceptualized in this context as fluid, open to participation, and accomplished in relationality. Meanwhile, [38] believed that EL opens the pathway to sustainability growth and always seeks to identify creative means and methods to improve organizational performance. A recent study by Newman et al. [39] confirmed that innovative behavior will be more persuasive when employees work under a robust entrepreneurial leader.

Based on the above various standpoints, EL in this research refers to the influencing and directing of the performance of group members toward the achievement of organizational goals that involve recognizing and exploiting entrepreneurial opportunities [37]. Additionally, it also involves the endorsement of new strategic directions and solves complex business, social, and environmental problems [36].

## 2.2. Sustainable Performance

According to Gong et al. [6], sustainability is always associated with environmental protection and welfare activities that lead to sustainable performance. Carter and Rogers [40] defined sustainable performance as the integration of economic, environmental, and social performance that does not only positively affect the natural environment and society, but also results in long-term economic benefits and competitive advantage for a firm. Similarly, [41] referred to sustainable performance as a firms' activities that focus on the achievements of their objectives, which encompasses environmental, economic, and social performance. Ahmad et al. [11] classified sustainable performance into two categories: financial performance or profit; and non-financial performance or profit, which is inclusive of employee, supplier, and customer satisfaction, and also involves control of the firms and firms' image. According to the AA1000AS standard, "sustainability performance is measured to an organization's entire performance, which might contain its strategies, decisions, and activities that produce environmental, economic, and/or social outcomes" [42]. The present research views sustainable performance in a holistic manner that encompasses economic, environmental, and socially sustainable performance.

ECSPF is one of the most significant bottom lines in sustainability. It occurs when firms increase their profitability, productivity, and sales, and achieve cost reduction [43]. According to [44], positive economic outcomes of ECSPF include improved market share, development of a green company image, an improved position in the marketplace, and increased profit. The implementation of sustainability initiatives might not increase profit and sales performance in the short term. However, it does prepare companies for superior long-term performance due to initial upfront investment in managing sustainability initiatives [45].

ENSPF depicts the positive outcome of sustainability practices towards the natural environment of a firm, both internally and externally [46]. It specifically refers to compliance to environmental standards, as well as a reduction in air-pollutant emissions, resource consumption, and the consumption of hazardous materials [43,45,46]. According to [47], it includes the decrease of air-pollutant discharge, energy consumption, material utilization, and obedience towards environmental standards. Meanwhile, [44] depicted ENSPF as involving a reduction of CO<sub>2</sub> emissions, wastewater, solid wastes, energy consumption, hazardous substances, and material usage, as well as better compliance with environmental standards.

Last but not least, Paulraj [48] defined SOSPF as the ability of a firm to enhance their social well-being, as well as the health and safety of both their employees and the public. Hence, entrepreneurs or SMEs should not only develop profit-making businesses, but also serve the welfare of communities at large and conserve the ecosystem for future generations [40]. With a similar view, [44] agreed that SOSPF enhances the relationships between the community and stakeholders, work safety, the work environment, and living standards of the surrounding community.

### 2.3. Entrepreneurial Bricolage

The concept of ‘Bricolage’ was first used by Lévi-Strauss [49] with reference to “someone who works with his hand” and uses whatever resources and repertoires he has to perform whatever tasks he faces. Weick [50] described a “bricoleur” as being creative under a chaotic condition and said that he or she will proceed using whatever materials are at hand, leading to novel combination. Baker, Miner, and Eesley [51] defined bricolage as “making do by applying combinations of the resources at hand to new problems or opportunities”. In a similar notion, [52] wrote that bricolage is associated with the creative adoption and manipulation of human and social capital, materials, or financial resources to overcome problems and create new opportunities.

According to Vanevenhoven et al. [53], there are two types of bricolage that are crucial to maintaining an excellent business performance. First, external bricolage involves activities that enhance the pool of potential resources available to entrepreneurs in the external environment such as social relationships, physical assets, or functional assets. For example, entrepreneurs build relationships through external networking as a resource to gain quick access to a crucial market for which they have no knowledge and experience. Second, external bricolage involves an entrepreneur’s internal resources such as their life experiences, credentials, prior knowledge, education, and certifications that can be used, improvised, manipulated, and deployed in their operation and management processes. As part of this notion, entrepreneurial bricolage innovates, adapts, and recombines existing or available resources in an organization such as human capital and materials to achieve sustainable performance.

### 2.4. Hypotheses Development

#### 2.4.1. Entrepreneurial Leadership and Sustainable Performance

Under the Upper Echelon Theory (UET), managers’ background partially affects organizational outcomes, strategic choices, and performance levels [54]. Therefore, this theory helps to explain that leadership plays a significant role in determining organizational performance [55,56], which consequently affects the sustainability of an organization. In this context, EL characteristics are expected to play a key role in determining a firm’s sustainable performance (economic, environmental, and social performance).

Extant literature is confined to examining the relationship between EL and innovative behavior. For instance, [36] confirmed that EL plays an important role in developing and pursuing innovative organizations through the innovation process (idea generation, idea selection, idea development, and idea diffusion). Entrepreneurial leaders are required to promote new products and processes, as well as to endorse new strategic directions and solve complex business, social, and environmental problems [34]. However, there has been no direct investigation on the role of EL in influencing sustainable performance.

Most previous studies relate sustainable performance with sustainable manufacturing practices [44,57], green supply chain practices [43–47], environmental management systems i.e., the international standard ISO 14001 and the European EMAS scheme [58], strategic purchasing, and sustainable supply management [48]. Thus, empirical research that examines the relationship between sustainable performance and EL is scarce.

According to [35], entrepreneurial leaders energize their followers to support profit and non-for-profit organizations. Fernald Jr. et al. [59] outlined that EL involves being a risk taker, a visionary, and achievement oriented in sustaining progress. A mixed-method study conducted by [19] agreed that entrepreneurial leaders possess distinct characteristics and are explicitly perceived as visionaries and as being passionate, as well as possessing high-integrity and self-confidence. Indeed, EL plays a pivotal role in organizations during a turbulent environment, and therefore requires greater research attention.

In addition, there is supporting literature that had examined managers’ environmental responsibility towards organizational behavior and the culture of SMEs in South Africa [18], the important role of top management and leadership in pursuing environmental commitment [60], and the idea that CEOs are

the most important drivers in sustainability implementation [61]. Therefore, the role of EL needs to be explored further. As such, this study hypothesizes that:

**Hypothesis 1 (H1).** *Entrepreneurial leadership has a positive effect on economically sustainable performance.*

**Hypothesis 2 (H2).** *Entrepreneurial leadership has a positive effect on environmentally sustainable performance.*

**Hypothesis 3 (H3).** *Entrepreneurial leadership has a positive effect on socially sustainable performance.*

#### 2.4.2. Contingency Role of Entrepreneurial Bricolage between Entrepreneurial Leadership and Sustainable Performance

EB is the agent of change or innovation, especially when there is inadequate institutional support or resource scarcity during uncertainty [52]. Bricolage is a crucial pathway to innovativeness when nascent organizations engage in bricolage rather than using resource constraints as an excuse to give up [62]. When SMEs are innovative, risk-taking, and proactive, they will be able to adapt or improvise using their existing and available resources to create solutions that achieve TBL [17].

Previous research had revealed significant and insignificant effects of entrepreneurial bricolage on entrepreneurship. Hooi et al. [17] revealed that EB mediates the relationship between entrepreneurial orientation and sustainable entrepreneurship; however, it does not mediate the relationship between sustainability orientation and sustainable entrepreneurship. Halim et al., [63] discovered that factors underpinning business uncertainty (such as globalization and climate change) have a positive relationship with EB. Nevertheless, a hostile environment (stiff competition in the industry) has a negative relationship with entrepreneurial bricolage among SMEs in the manufacturing sector.

Moreover, EB has been examined as a mediating variable [17,52], independent variable [23,62], and dependent variable [63]. Therefore, the present research intends to explore EB as a contingent variable between EL and sustainable performance based on its economic, environmental, and social aspects. As such, this research hypothesizes that:

**Hypothesis 4 (H4).** *The positive relationship between EL and ECSPF will be stronger when EB is high.*

**Hypothesis 5 (H5).** *The positive relationship between EL and ENSPF will be stronger when EB is high.*

**Hypothesis 6 (H6).** *The positive relationship between EL and SOSPF will be stronger when EB is high.*

#### 2.5. Theoretical Background

Two key theories, namely Upper Echelon Theory (UET) and Effectuation Theory (ET), were applied in this research. EL can be associated with UET since [54] found that top management heterogeneity in observable background characteristics such as the age of top executives, functional tracks, other career experiences, education, and socioeconomic background affect numerous organizational outcomes such as a firm's competitive behavior, level of diversification, innovativeness, corporate strategic changes, and ultimately its performance. The UET remains relevant and applicable until today since the top management of a business continues to play an important role in determining its organizational performance [55,56], which consequently affects the sustainability of an organization. In this context, EL characteristics are expected to play a key role in affecting sustainable performance.

Unlike larger organizations, SMEs should effectively utilize their limited resources, knowledge, technical skills, and experience to deal with environmental problems [64–66]. Thus, ET explains EB as involving the act of combining resources at hand to create new strategic goals [52]. EB may help firms to 'make do' with whatever resources that they currently possess to enhance their performance, especially for manufacturers operating with limited resources. Furthermore, Sarasvathy, [67] discovered that effectuation explains why individuals end up conducting new types of business activities, even when those are not part of their original goals. They pursue new business opportunities and take risks to the extent they are prepared to experience losses and retain their capability to adapt to changes in an uncertain environment.

Therefore, the present research tries to conceptualize EL where it leads to sustainable performance with the contingent role of EB using the lens of UET and ET.

## 2.6. Research Framework

The novelty of the current research is the examination of the link between Entrepreneurial Leadership (EL) and sustainable performance (economic, environmental, social performance) being contingent on Entrepreneurial Bricolage (EB) that are governed by Upper Echelon Theory (UET) and Effectuation Theory (ET). Figure 1 illustrates the proposed research framework.

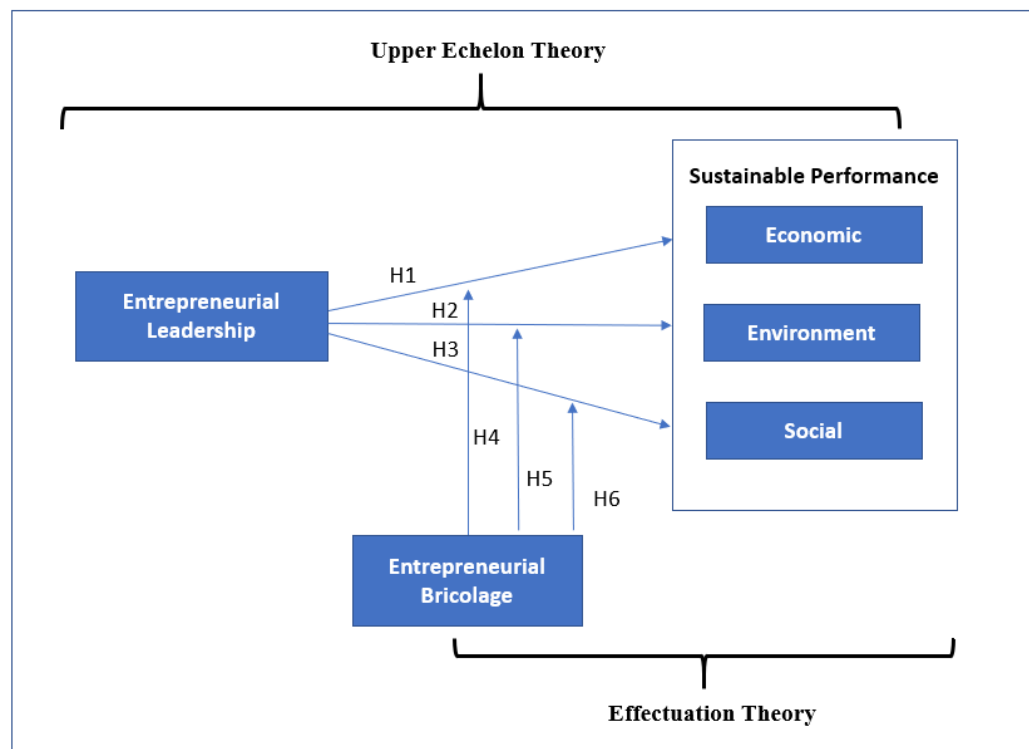


Figure 1. Research Framework.

## 3. Methodology

### 3.1. Survey and Data Collection

In Malaysia, SMEs in the manufacturing sector are defined as firms with a sales turnover that is less than RM50 million or that have a number of full-time employees that is less than 200 [68]. Purposive sampling was used to select the respondents based on the following criteria: (1) the business must be a manufacturing company; (2) the business must have more than 5 and less than 200 employees; (3) the business's sales turnover is more than RM300,000 and up to RM50 million; and (4) the business's location is in one of the twelve states of Peninsular Malaysia. This research excludes two other states, i.e., Sabah and Sarawak because the composition of manufacturing SMEs is not as significant in these states as in Peninsular Malaysia. In the context of geographical location, the majority of the SMEs are concentrated in Peninsular Malaysia (87.1%) particularly in Selangor, Wilayah Persekutuan Kuala Lumpur, Johor, and Perak. Meanwhile, SMEs in Sabah and Sarawak only represents 12.9% of the total SMEs in Malaysia [28]. It was determined by [69] that most manufacturing companies in Malaysia are located on the West Coast of Peninsular Malaysia. We also determined that the key respondents must be the business owners or managers who are actively managing the businesses. The research excluded the SMEs from the micro category, which have less than 5 employees or less than RM300,000 in annual sales [68]. This is due to their financial and technological inability [41] to adopt business

sustainability. From the 2800 members registered in the Federation of Malaysian Manufacturer (FMM) Directory 2017, the final sampling frame that fulfilled our requirements was 1709.

The data collection was carried out for over a period of three months from June 2019 until September 2019. Using the simple random sampling technique, e-mails attached with an online link for Google Forms were sent to 1000 companies to complete the survey. In the event of bounced e-mails, the companies were contacted via phone or website to check for their valid e-mails. To get their quick response and full cooperation, follow up calls and gentle reminders were sent via e-mail after one week, one month, and two months. After three months, 146 companies responded to the survey with a response rate of 14.6%. According to [27], a response rate of around 10% is common from the SMEs and is equivalent to other research on SMEs in Malaysia. This is supported by [70], where they specified that the ideal response rate range for social science studies is between 5% and 35%. Furthermore, this sample size is sufficient based on G\*Power analysis. The test would initially require a minimum of 92 samples, yielding a statistical power of 0.80. Therefore, the sample size of 146 in this research has exceeded the requirement and is adequate to represent the population.

### 3.2. Measurements

The measurement for EL was adopted from [35] by using the ENTRELEAD scale, which consists of 8 items. The measurement of sustainable performance contains 14 items adopted from [43,46,71–73] for economic measures, [47] for environment measures, and [48] for social measures. Meanwhile, the measurement for EB comprises of 9 items, adopted from [24,52]. A 5-point Likert scale ranging from (5) strongly agree to (1) strongly disagree was applied to answer each item. Table 1 demonstrates the measurements used in this research.

**Table 1.** Items used in the questionnaire.

| Construct                               | No      | Items                                                                                                       | Adopted from                                                                             |
|-----------------------------------------|---------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Entrepreneurial leadership              | EL1     | The leader of this company ... often comes up with radically improved ideas for the products we are selling | Renko et al., 2015                                                                       |
|                                         | EL2     | often comes up with ideas of completely new products that we could sell                                     |                                                                                          |
|                                         | EL3     | takes risks                                                                                                 |                                                                                          |
|                                         | EL4     | has creative solutions to problems                                                                          |                                                                                          |
|                                         | EL5     | demonstrates passion for his/her work                                                                       |                                                                                          |
|                                         | EL6     | has a vision for the future of our business                                                                 |                                                                                          |
|                                         | EL7     | challenges and pushes us to act in a more innovative way                                                    |                                                                                          |
|                                         | EL8     | wants us to challenge the current ways we do business                                                       |                                                                                          |
| Economically sustainable performance    | ECSPF1  | Our company ... has improved its market share                                                               | Eltayeb et al. (2011), Klassen & McLaughlin, (1996), Rao and Holt (2005), Wagner, (2005) |
|                                         | ECSPF2  | has improved its image                                                                                      |                                                                                          |
|                                         | ECSPF3  | has improved its position in the marketplace                                                                |                                                                                          |
|                                         | ECSPF4  | has increased its profits                                                                                   |                                                                                          |
| Environmentally sustainable performance | ENSPF5  | has improved compliance with environmental standards                                                        | Laosirihongthong et al., (2013)                                                          |
|                                         | ENSPF6  | has reduced CO <sup>2</sup> emissions                                                                       |                                                                                          |
|                                         | ENSPF7  | has reduced energy consumption                                                                              |                                                                                          |
|                                         | ENSPF8  | has reduced material usage                                                                                  |                                                                                          |
|                                         | ENSPF9  | has reduced the consumption of hazardous materials                                                          |                                                                                          |
| Socially sustainable performance        | SOSPF10 | has improved or enhanced the overall stakeholder welfare                                                    | Paulraj, (2011)                                                                          |
|                                         | SOSPF11 | has improved the community's health and safety                                                              |                                                                                          |
|                                         | SOSPF12 | has reduced environmental impacts and risks to the general public                                           |                                                                                          |
|                                         | SOSPF13 | has improved occupational health and safety of employees                                                    |                                                                                          |
|                                         | SOSPF14 | has improved the awareness and protection of the claims and rights of the community served                  |                                                                                          |

Table 1. Cont.

| Construct                    | No  | Items                                                                                                                                            | Adopted from                                  |
|------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Entrepreneurial<br>bricolage | EB1 | In this company ...<br>we are confident in our ability to find workable<br>solutions to new challenges by using our existing<br>resources        | Gundry et al. (2011)<br>Senyard et al. (2010) |
|                              | EB2 | we gladly take on a broader range of challenges than<br>others without resources                                                                 |                                               |
|                              | EB3 | we use any existing resources that seem useful as<br>a response to a new problem or opportunity                                                  |                                               |
|                              | EB4 | we deal with new challenges by applying<br>a combination of our existing resources and other<br>resources that are inexpensively available to us |                                               |
|                              | EB5 | when dealing with new problems or opportunities,<br>we act by assuming that we will find<br>a workable solution                                  |                                               |
|                              | EB6 | by combining our existing resources, we take on<br>a surprising variety of new challenges                                                        |                                               |
|                              | EB7 | when we face new challenges, we put together<br>workable solutions from our existing resources                                                   |                                               |
|                              | EB8 | we combine resources to tackle new challenges; in<br>which those are not the resources' original purposes                                        |                                               |
|                              | EB9 | we acquire resources at low or no cost and combine<br>them with what we already have to deal with<br>new challenges                              |                                               |

## 4. Results

### 4.1. Demographic Profile

Out of the 146 respondents, 53.4% were female while 46.6% were male. Most of them were 36 to 45 years old (37%), followed by 25 to 35 years old (30.1%), 46 to 55 years old (24%), and above 55 years old (8.9%). Most of the respondents were Upper Management (46.6%), Chief Executive Officers or Managing Directors (30.8%), and Managers (22.6%). Most of the manufacturing SMEs had been established for more than 20 years (42.5%), followed by 16 to 20 years (18.5%), 11 to 15 years (17.1%), 6 to 10 years (17.1%), and 1 to 5 years at only 4.8%. The majority of them were small sized companies (65.1%) with 5 to 75 employees, and 34.9% were from medium sized companies with 75 to 200 employees. In terms of annual sales turnover, 61.6% were small sized companies with RM300,000 to RM15 million in sales turnover, followed by 38.4% medium sized companies with RM15 million to RM50 million in sales turnover. Meanwhile, for the type of industry, most of the companies were from the food and beverages industry (24%), followed by fabricated metal products (16.4%), machinery and equipment (12.3%), electrical and electronic goods (11.6%), rubber and plastic products (8.2%), textiles and clothing apparel (6.2%), chemicals and chemical products (3.4%), non-metallic mineral products (2.7%), medical devices (2.7%), cosmetics and toiletries (2.7%), oil and gas (2.1%), furniture (2.1%), wood products (1.4%), pharmaceuticals (1.4%), automotive (1.4%), printing (0.7%), and paper and paper products (0.7%).

### 4.2. Data Analysis

The PLS-SEM technique using SmartPLS 3.2.8 software was selected to examine the research model. This approach was employed since PLS can manage complex structural equation models with a large number of constructs and a non-normal distribution of data [74]. Table 2 portrays Mardia's multivariate skewness ( $\beta = 7.189$ ,  $p < 0.01$ ) and kurtosis ( $\beta = 47.525$ ,  $p < 0.01$ ). According to Kline [75], if the b value for multivariate skewness is greater than  $\pm 3$  and the b value for multivariate kurtosis is greater than  $\pm 20$ , then the data distribution is not normal. Besides that, total sample size of 146 was insufficient for the use of CB-SEM. Therefore, PLS-SEM was applied as suggested by [76].

**Table 2.** Multivariate Skewness and Kurtosis.

|          | <b>b</b> | <b>Z</b> | <b>p-Value</b> |
|----------|----------|----------|----------------|
| Skewness | 7.189    | 174.925  | $p < 0.01$     |
| Kurtosis | 47.525   | 9.044    | $p < 0.01$     |

#### 4.2.1. Common Method Variance (CMV)

Since the data in this research were collected via self-report questionnaires, particularly from only one single source and from common scale properties, there is a tendency for statistical and method biases to develop [77]. One of the approaches used to detect this problem is a full collinearity test. According to Kock and Lynn [78], two or more variables are considered to be collinear if they measure the same attribute of an object or a construct. In SPSS Statistic 25 software, linear regression analysis was employed by assigning a dummy variable as the dependent variable and other latent variables as independent variables to measure the Variance Inflation Factor (VIF) values. The cut off point for the VIF values was determined at 3.3 [78]. Since the VIF values (refer to Table 3) are below the threshold values, CMV has been not a major concern and is unlikely to cause any problem for the findings of the current research.

**Table 3.** Collinearity.

| <b>Construct</b> | <b>EB</b> | <b>ECSPF</b> | <b>EL</b> | <b>ENSPF</b> | <b>SOSPF</b> |
|------------------|-----------|--------------|-----------|--------------|--------------|
| VIF              | 1.933     | 1.499        | 2.073     | 2.022        | 2.671        |

Note: EB—Entrepreneurial Bricolage; ECSPF—Economically Sustainable Performance; EL—Entrepreneurial Leadership; ENSPF—Environmentally Sustainable Performance; SOSPF—Socially Sustainable Performance.

#### 4.2.2. Bivariate Correlation Matrix

Table 4 presents the bivariate correlation matrix with Pearson Correlation Coefficients ( $r$ ) of all the variables in this research. By using SPSS Statistic 25 software, the Pearson's  $r$  ranges from  $-1.0$  to  $1.0$  was analyzed to measure the strength of linear relationship [79]. The results showed the highest correlation was for SOSPF and ENSPF at  $0.704$  ( $p < 0.01$ ), followed by EB and EL at  $0.663$  ( $p < 0.01$ ), and by SOSPF and EL at  $0.574$  ( $p < 0.01$ ). The lowest correlation was between EL and ECSPF at  $0.348$  percent.

**Table 4.** Correlation Matrix.

|       | <b>ECSPF</b> | <b>EL</b> | <b>ENSPF</b> | <b>SOSPF</b> | <b>EB</b> |
|-------|--------------|-----------|--------------|--------------|-----------|
| ECSPF | 1.000        |           |              |              |           |
| EL    | 0.348 **     | 1.000     |              |              |           |
| ENSPF | 0.446 **     | 0.461 **  | 1.000        |              |           |
| SOSPF | 0.552 **     | 0.574 **  | 0.704 **     | 1.000        |           |
| EB    | 0.407 **     | 0.663 **  | 0.412 **     | 0.513 **     | 1.000     |

Note: EB—Entrepreneurial Bricolage; ECSPF—Economically Sustainable Performance; EL—Entrepreneurial Leadership; ENSPF—Environmentally Sustainable Performance; SOSPF—Socially Sustainable Performance.  
\*\*  $p < 0.01$ .

#### 4.2.3. Measurement Model

All the constructs were modeled as reflective; thus, the indicators represent the effect instead of the cause of the underlying constructs [76,80]. Table 5 displays all the loading factors, the average variance extracted (AVE), and composite reliability (CR). The findings show that the loadings and AVE values for all the constructs exceeded  $0.5$  and the CR values of all construct exceeded  $0.7$ . Therefore, convergent validity has been achieved.

Table 5. Model.

| Construct                               | Item    | Loading | CR    | AVE   |
|-----------------------------------------|---------|---------|-------|-------|
| Entrepreneurial Bricolage               | EB1     | 0.801   | 0.952 | 0.688 |
|                                         | EB2     | 0.801   |       |       |
|                                         | EB3     | 0.846   |       |       |
|                                         | EB4     | 0.805   |       |       |
|                                         | EB5     | 0.859   |       |       |
|                                         | EB6     | 0.893   |       |       |
|                                         | EB7     | 0.848   |       |       |
|                                         | EB8     | 0.859   |       |       |
|                                         | EB9     | 0.743   |       |       |
| Economically Sustainable Performance    | ECSPF1  | 0.885   | 0.908 | 0.713 |
|                                         | ECSPF2  | 0.816   |       |       |
|                                         | ECSPF3  | 0.900   |       |       |
|                                         | ECSPF4  | 0.770   |       |       |
| Entrepreneurial Leadership              | EL1     | 0.874   | 0.947 | 0.692 |
|                                         | EL2     | 0.841   |       |       |
|                                         | EL3     | 0.711   |       |       |
|                                         | EL4     | 0.830   |       |       |
|                                         | EL5     | 0.797   |       |       |
|                                         | EL6     | 0.867   |       |       |
|                                         | EL7     | 0.895   |       |       |
|                                         | EL8     | 0.825   |       |       |
| Environmentally Sustainable Performance | ENSPF5  | 0.827   | 0.858 | 0.548 |
|                                         | ENSPF6  | 0.773   |       |       |
|                                         | ENSPF7  | 0.709   |       |       |
|                                         | ENSPF8  | 0.690   |       |       |
|                                         | ENSPF9  | 0.691   |       |       |
| Socially Sustainable Performance        | SOSPF10 | 0.782   | 0.913 | 0.678 |
|                                         | SOSPF11 | 0.864   |       |       |
|                                         | SOSPF12 | 0.808   |       |       |
|                                         | SOSPF13 | 0.837   |       |       |
|                                         | SOSPF14 | 0.822   |       |       |

Next, Table 6 verifies that this model has achieved discriminant validity, as the HTMT value [81] is below the threshold of 0.85 that was suggested by [75].

Table 6. Validity.

| Construct                                  | 1     | 2     | 3     | 4     | 5 |
|--------------------------------------------|-------|-------|-------|-------|---|
| 1. Entrepreneurial Bricolage               |       |       |       |       |   |
| 2. Economically Sustainable Performance    | 0.448 |       |       |       |   |
| 3. Entrepreneurial Leadership              | 0.705 | 0.380 |       |       |   |
| 4. Environmentally Sustainable Performance | 0.455 | 0.526 | 0.525 |       |   |
| 5. Socially Sustainable Performance        | 0.558 | 0.634 | 0.627 | 0.834 |   |

#### 4.2.4. Structural Model

The structural model explains the hypothesized relationship between the constructs. To check the significance level, t-statistics for all paths were evaluated using a complete bootstrapping procedure with 5000 samples, a significance level of 5 percent ( $\alpha = 0.05$ ), and a one-tailed test [80]. The findings are summarized in Table 7; revealing that EL is positively associated with ENSPF ( $\beta = 0.335$ ,  $t = 2.856$ ) and SOSPF ( $\beta = 0.417$ ,  $t = 3.626$ ), while ECSPF is insignificant ( $\beta = 0.139$ ,  $t = 1.171$ ). Thus, H2 and H3 are supported while H1 is not supported. According to [76], when the coefficient value ( $\beta$ ) is closer to +1, it means that there is a strong positive relationship. Additionally, when the coefficient value is

closer to  $-1$ , it means there is a strong negative relationship. Therefore, the effect of EL is stronger on SOSPF (41.7%) than on ENSPF (33.5%)

**Table 7.** Testing the Direct Relationship.

| Hypothesis | Relationship | Std Beta | Std Error | t-Value | p-Value | BCI LL | BCI UL | f <sup>2</sup> | Decision      |
|------------|--------------|----------|-----------|---------|---------|--------|--------|----------------|---------------|
| H1         | EL → ECSPF   | 0.139    | 0.119     | 1.171   | 0.121   | −0.053 | 0.340  | 0.013          | Not Supported |
| H2         | EL → ENSPF   | 0.335    | 0.117     | 2.856   | 0.002   | 0.124  | 0.511  | 0.082          | Supported     |
| H3         | EL → SOSPF   | 0.417    | 0.115     | 3.626   | 0.000   | 0.228  | 0.606  | 0.153          | Supported     |

Note: EL—Entrepreneurial Leadership; ECSPF—Economically Sustainable Performance; ENSPF—Environmentally Sustainable Performance; SOSPF—Socially Sustainable Performance.

R<sup>2</sup> was analyzed to examine the amount of variance in the endogenous constructs explained by exogenous constructs [76]. The range of the effect is from 0 to 1, which assumes that the higher the value, the higher the predictive accuracy level [80]. This research used the rule of thumb developed, where 0.26 means substantial predictive accuracy, 0.13 means moderate predictive accuracy, and 0.02 means weak predictive accuracy. The R<sup>2</sup> values for ECSPF, ENSPF, and SOSPF are 0.176 (moderate), 0.233 (moderate), and 0.360 (substantial), respectively. Thus, the highest predictive accuracy is 36% of SOSPF can be explained by EL.

To measure the effect size (f<sup>2</sup>), [82] proposed that the value of 0.02 is small, 0.15 is medium, and 0.35 is large. As observed in Table 6, EL has no effect on ECSPF (f<sup>2</sup> = 0.013), a small effect on ENSPF (f<sup>2</sup> = 0.082), and a medium effect on SOSPF (f<sup>2</sup> = 0.153). The findings also verify that the value of 0 does not straddle in between the Confidence Intervals Bias corrected at Upper and Lower Limits. Therefore, all results are significant [81].

#### 4.2.5. Testing the Contingency Effect

In examining the interaction effects of moderators using PLS-SEM, this study applied the Orthogonalization Approach as suggested by Hair et al. [76] and Ramayah et al. [80] to minimize the level of collinearity and yield a high prediction accuracy. The contingent effect of EB was assessed using a bootstrapping re-sampling with 5000 re-samples. Based on the results in Table 8, the interactions between EB\*ECSPF, EB\*ENSPF, and EB\*SOSPF are negative (the *t*-values are below the threshold of 1.645 and *p*-value > 0.05). This indicates that the positive relationships between EL and ECSPF, EL and ENSPF, as well as EL and SOSPF will be weaker when EB is higher. The findings are verified by the value of 0 that does not straddle in between the confidence intervals bias corrected at upper and lower limits [81]. Therefore, H4, H5, and H6 are not supported.

**Table 8.** Testing the Contingent Relationship.

| Hypothesis | Relationship     | Std Beta | Std Error | t-Value | p-Value | BCI LL | BCI UL | f <sup>2</sup> | Decision      |
|------------|------------------|----------|-----------|---------|---------|--------|--------|----------------|---------------|
| H4         | EB*ECSPF → ECSPF | −0.294   | 0.205     | 1.439   | 0.075   | −0.397 | 0.660  | 0.071          | Not Supported |
| H5         | EB*ENSPF → ENSPF | −0.270   | 0.248     | 1.088   | 0.138   | −0.385 | 0.531  | 0.057          | Not Supported |
| H6         | EB*SOSPF → SOSPF | −0.241   | 0.277     | 0.870   | 0.192   | −0.350 | 0.779  | 0.059          | Not Supported |

Note: EB—Entrepreneurial Bricolage; EL—Entrepreneurial Leadership; ECSPF—Economically Sustainable Performance; ENSPF—Environmentally Sustainable Performance; SOSPF—Socially Sustainable Performance.

In addition, this research employed PLS Predict with 10 folds and 10 repetitions to mimic how the model will finally be used to predict a new observation. PLS Predict is a holdout-sample-based technique developed by [83] to generate case-level predictions on an item or a construct level to attain predictive model assessment in PLS-SEM. Unlike R<sup>2</sup> and Predictive Relevance (Q<sup>2</sup>), PLS Predict proposes a method to measure a model's out-of-sample predictive power or model's accuracy in predicting the result [84]. Since the PLS LV Prediction Residuals in present research were non-symmetric,

as suggested by [84] mean absolute error (MAE) was used instead of root mean squared error (RMSE) to compare PLS with LM.

Table 9 shows that all endogenous variables' items in PLS exhibited a  $Q^2$  value above 0 and outperformed the naïve linear regression (LM) benchmark that describes a high predictive power. Moreover, the rule of thumb states that when all indicators in the PLS-SEM analysis have lower MAE (or RMSE) values compared to the naïve LM benchmark, then the model has high predictive power. As observed, all indicators in PLS are exhibiting a lower MAE value compared to LM. Hence, it is concluded that this model has a high predictive power and can eventually be used to predict new cases.

**Table 9.** Predict Assessment.

| Items   | PLS   |                        | LM    |                        | PLS-LM |
|---------|-------|------------------------|-------|------------------------|--------|
|         | MAE   | $Q^2_{\text{predict}}$ | MAE   | $Q^2_{\text{predict}}$ |        |
| ECSPF2  | 0.489 | 0.104                  | 0.584 | −0.128                 | −0.095 |
| ECSPF4  | 0.676 | 0.089                  | 0.697 | −0.072                 | −0.021 |
| ECSPF1  | 0.597 | 0.071                  | 0.616 | −0.058                 | −0.019 |
| ECSPF3  | 0.563 | 0.102                  | 0.617 | −0.078                 | −0.054 |
| ENSPF5  | 0.505 | 0.163                  | 0.552 | 0.065                  | −0.047 |
| ENSPF6  | 0.710 | 0.067                  | 0.732 | −0.017                 | −0.022 |
| ENSPF9  | 0.614 | 0.092                  | 0.685 | −0.106                 | −0.071 |
| ENSPF8  | 0.661 | 0.069                  | 0.654 | −0.024                 | 0.007  |
| ENSPF7  | 0.655 | 0.063                  | 0.695 | −0.099                 | −0.040 |
| SOSPF11 | 0.550 | 0.229                  | 0.596 | 0.060                  | −0.046 |
| SOSPF14 | 0.480 | 0.243                  | 0.524 | 0.107                  | −0.044 |
| SOSPF10 | 0.520 | 0.179                  | 0.546 | 0.027                  | −0.026 |
| SOSPF13 | 0.467 | 0.228                  | 0.545 | 0.025                  | −0.078 |
| SOSPF12 | 0.556 | 0.196                  | 0.613 | −0.010                 | −0.057 |

*Note:* ECSPF—Economically Sustainable Performance; ENSPF—Environmentally Sustainable Performance; SOSPF—Socially Sustainable Performance.

## 5. Discussion

The main target of this research is to examine the relationship between EL and sustainable performance (economic, environment, social performance) contingent upon EB. To the best of the authors' knowledge, this is the first empirical research analyzing the relevant theoretical framework in Malaysia.

### 5.1. Theoretical Contribution

The main theoretical contribution of this research lies within its analysis on the relationship of EL and sustainable performance, namely economic, environmental, and social performance contingent upon EB. The current issue of sustainability has encouraged entrepreneurs and leaders from all over the world to respond urgently, particularly those of the manufacturing SMEs, which are one of the biggest contributors to the Malaysian national economy. While EL involves influencing and directing the group's performance towards organizational goals, the relationship between EL and sustainable performance is yet to be explored. The present research has derived six crucial conclusions from the findings.

First, the result confirms that EL and ECSPF have an insignificant relationship. Although there is no empirical support for the direct relationship between EL and ECSPF, this finding is in contrast with [85], who stated that EL is positively influencing acquisition performance, which indirectly influences economic performance through returns on investment, sales, and equity. This finding also contradicts the previous literature which stated that sustainable practices positively enhance economic performance [22,57,86]. The authors found that by being friendly to the environment and responsible to employees, society, as well as suppliers, a better market position and business performance may be attained for a business. An interesting finding by [41] explained that economic performance

is significant when organizations voluntarily embed sustainable practices. However, sustainable practices become insignificant when companies are pressured into developing them to comply with environmental regulations.

The present finding aligned with the past study by [87], who identified that overall cost will increase when sustainable practices are implemented. However, the significant role of the CEOs in sustainable manufacturing implementation remains relevant and vital. The insignificant relationship between EL and ECSPF in this research could probably be due to several reasons. Previous researchers [45] found that the implementation of sustainability might not increase profit and sales performance in the short-term period. However, it will prepare organizations for superior long-term performance due to encouraging initial upfront investment in managing sustainability initiatives. According to [31], entrepreneurial risk occurs when leaders give too many rewards to their employees such as high salaries, bonuses, and compensation; risk also occurs when leaders invest highly in innovation and green technology, as well as in employees' training and development. As a result of these decisions, they can face financial risk that will affect their cash flow performance. Nevertheless, that risk is only temporary. Evidently, over the long run, high-sustainability organizations outperformed others in the stock market and accounting measures [88]. A study by [44] showed that economic performance is low when there is little demand for sustainable or green products. This is because these types of products' prices are relatively high and consumers can opt for a cheaper price in the market, thereby disregarding the huge sustainability efforts and initiatives taken to develop them.

Second, EL is found to have a positive influence on ENSPF. This finding agrees well with the results of previous study conducted by [87]. The study described that leaders play a significant role in driving sustainable practices where this leads to organizational efficiency and a reputable green image. Most prior research agreed that sustainability has a positive relationship with environmental performance through reduction of waste, resources, product defects, and pollution [57,86]. According to [47], legislation and regulation focusing on sustainability drive environmental performance. Research by [41] also mentioned that unlike economic performance, organizations will still achieve environmental performance, even when there is mandatory pressure from a relevant authority. In other research, [44] found that sustainable product design and development influence environmental performance, but not economic and social performance. This is because eco-design products have a positive impact on intangible outcomes such as product reputation, brand value, and green publicity.

Third, EL is found to have a significant relationship with SOSPF. The result of current research agreed with prior research by [38] who found a significant relationship between dimensions of EL style and organizational effectiveness, which comprises of job involvement, organizational commitment, organizational attachment, job satisfaction, consensus, legitimization, need for independence and self-control. The result is also consistent with research conducted by [36], who discovered that EL plays an important role in developing innovative organizations through an innovation process (idea generation, idea selection, idea development, and idea diffusion). A study by [57] revealed that sustainability practices improve social well-being for customers, suppliers, employees, and society at large.

Fourth, despite the brilliant outcomes of EB, this research finds that the contingent role of EB weakens the relationship between EL and ECSPF. In other words, the more entrepreneurial leaders make do with whatever resources are available to create a new opportunity, the more their economic performance will drop. This conclusion aligns with previous authors [23] who suggested that bricolage is associated with the second-best solution and inefficiency because its outcomes are hybrid and imperfect. Similarly, [52] supported the idea that organizations that applied EB offer products that are simpler, cheaper, and have a more modest quality, which may dissatisfy customers and therefore affects these organizations' sales and profit. However, this finding is in contrast with [62], who believed that EB creates a vital trail to innovativeness that leads to economic performance. This is also inconsistent with prior research which revealed that organizations applying the concept of bricolage appear to be in a better position in terms of economic performance. The approach also plays a crucial role

during turbulent and uncertain business environment contexts such as experiencing globalization, rapid innovation, and new technology; however, the approach does not play such a role in a hostile environment [19,63].

Fifth, the findings of this research also show that EB weakens the relationship between EL and ENSPF as contingent variables. This result echoes [23], who believed that EB could lead to deviation from environmental standards and regulations. For instance, when green technology cars cannot perform in terms of their speed, EB could involve substituting some parts of the car with substandard materials, leading to better performance and cost savings. However, this would increase CO<sub>2</sub> emissions and air pollution that would affect the green image or environmental performance of the car maker. This finding is also consistent with [63], who found that EB is insignificant in a hostile environment where the competition is stiff, harsh, and overwhelming, while there is a lack of exploitable resources and opportunities. Furthermore, [17,87] highlighted that organizational efficiencies and green images are critically dependent upon the role of CEOs. This is due to the self-confidence and unique capability of ELs in moving their dedicated followers to execute a sustainability vision [30] and endorsing new strategic directions to solve complex environmental problems [34] that have nothing to do with EB.

Sixth, the result also confirms that the contingent role of EB weakens the relationship between EL and SOSPF. According to [23], the use of bricolage in a primary school had resulted in low academic performance for the students. That suggests that if EB is applied in the manufacturing industry, the quality of the products developed will be affected when employees make do with whatever resources are in hand. As mentioned before, companies can choose to offer products that are simpler, cheaper, and of a more modest quality under these circumstances [52]. This may consequently affect the health and safety of customers and the standard of living of society.

Additionally, this research provides several theoretical contributions with respect to the Upper Echelon Theory (UET) and Effectuation Theory (ET). The result supports UET, which posits that managers' backgrounds affect organizational outcomes, strategic choices, and performance levels [55]. Meanwhile, ET explains why individuals end up creating new business activities even when those are not their original goals. They pursue new business opportunities and take risks to the extent that they are prepared to experience losses and retain their capability to adapt to changes in an uncertain environment [67]. In recent years, very few scholars have investigated the connection between both UET and ET. In line with this finding, EL is a significant contributor to ENSPF and SOSPF, but insignificantly contributes to ECSPF. Meanwhile, EB weakens the relationships between EL and ECSPF, EL and ENSPF, and EL and SOSPF.

Besides these results, this research assists in filling the gap in the context of SMEs in a developing country (Malaysia). This is because most previous research had focused on larger organizations in developed countries. Hence, it is crucial to bridge the research gap since SMEs are important for economic, environmental, and social sustainability performance. Thus, this research contributes to the existing literature by examining and investigating the manufacturing SMEs through the lenses of EL, sustainable performance (economic, environmental and social performance), and EB. Last but not least, the present research contributes to methodological contribution when PLS Predict confirms that the model has a high predictive power and can eventually be used to predict new cases.

## 5.2. Managerial Implications

Apart from theoretical contributions, this research provides several managerial implications. The conceptual framework proposed in this research can be used as a guide to help manufacturing SME owners to understand the impacts of EL on ECSPF, ENSPF, and SOSPF, as well as the contingent role of EB. Previous literature discovered that SME owners considered sustainable practices to be attractive and they had positive attitude towards them [17]. By using this model, SME owners should act as leaders with visions, passion, integrity, and self-confidence while facing a turbulent environment and business uncertainty. To put it differently, SME owners should acquire, develop and embrace the skills of EL in recognizing and exploiting entrepreneurial opportunity to maneuver their team

members towards achieving sustainable goals. Moreover, the result of this research reveals that EL has a positive impact on ENSPF and SOSPF.

Since the relationship between EL and ECSPF is insignificant, SME owners should understand that their investment in sustainability initiatives might not increase their profit in the short term, but they will provide benefits and superior economic performance in long run [45]. Therefore, SME owners should be prudent while making investment decisions. In the short-term, instead of rewarding their employees with financial rewards, SME leaders could give non-financial rewards such as recognition of their success and motivation in moving their teams towards achieving sustainable goals. Simultaneously, investments could be made in innovation, skills, or technology to improve process efficiency and the quality of products to gain customer loyalty, which would lead to an increase in economic performance.

However, the present research finds that the contingent role of EB weakens the relationships of EL and ECSPF, EL and ENSPF, and EL and SOSPF. Since SMEs are well known for their limited resources, skills, and knowledge, as well as for having inefficient infrastructure [26], the outcome of EB may deviate from initial plans and differ from in larger organizations. The new products that businesses produce from recombining existing resources may have reduced quality [52], and therefore fail to achieve sustainable performance in their economic, environmental, and social aspects. Therefore, SME owners should take note that when they apply EB, the existing resources in hand that they make do with must be in good condition so that high quality products can be produced to delight and retain loyal customers. In addition, SME owners should implement sustainable practices such as reusing and recycling goods, waste management, creating job opportunities for local communities, and providing extra services to achieve sustainable performance.

Furthermore, the finding of present research may help other stakeholders such as employees, customers, and the community to be cognizant that they have to play their roles in supporting and complementing the leaders or SME owners who face sustainability challenges. The employees can contribute innovative ideas and skills at their workplace, while the customers and community can give constructive feedback to SME owners to improve their products for the achievement of sustainable performance. At the end, they will all enjoy the reciprocal benefits and an improved quality of life.

In addition, the government or policy makers should formulate appropriate programs that may enhance leaders' competencies in managing their businesses. Since training programs are too conventional nowadays, other collaborative programs or benchmarking activities can be arranged amongst the SMEs, large or multinational companies, and business associations. Through this networking, the process of transferring knowledge and skills will be faster and more effective. Last but not least, the present research may inspire schools and higher learning institutions in Malaysia or other countries to use the Babson College's practices as a benchmark. The college has adopted the principles of EL in their curriculum [33] to provide early and practical knowledge and skills to future leaders and entrepreneurs.

### 5.3. Limitations of the Study

Even though this research makes valuable theoretical and practical contributions, it faces several limitations. Firstly, the data collection process depends merely on self-report questionnaires. This technique, despite being criticized by some scholars, was deemed to be necessary due to difficulties associated with the independent assessment of each of these variables. Moreover, a full collinearity test had been tested and the VIF values proved that CMV has not been a problem in this research. Nevertheless, future research should consider identifying means to obtain data from multiple informants to minimize the possibility of response bias. Secondly, this research applied one-shot or cross-sectional data that cannot compare sustainable performance before and after SME owners embraced the EL concept. Therefore, a longitudinal study or qualitative interview with the top management is proposed for future research where more comprehensive findings can be generated after changes are accomplished. Thirdly, this research was conducted solely in Malaysia, with a focus on the country's SME manufacturing sector. As such, the findings cannot be generalized to less developed countries or

more economically advanced countries, or to other sectors. Despite some limitations, the findings still contribute new insights into EL and ECSPF, ENSPF, and SOSPF, contingent upon EB in the Malaysian manufacturing SMEs' setting.

#### 5.4. Directions for Future Research

In spite of the above mentioned limitations, this research can be extended in numerous directions. Firstly, future research should consider obtaining data from multiple informants such as business owners and operational employees. The business owners can answer the items involving the ECSPF, ENSPF, and SOSPF; operational employees can rate the EL and EB items. Secondly, future research can replicate this approach for other developed or underdeveloped countries, as well as in other sectors such as the construction and agro-based industries to see the role of EL in sustainable performance in a global setting. Finally, it would be interesting if EB can be considered as an independent variable to see its effect on sustainable performance.

#### 5.5. Conclusions

There is no doubt that sustainability is the key highlight of local and global attention in the twenty-first century business landscape. This phenomenon leads to the questions of how entrepreneurial leaders can encourage their followers to exploit entrepreneurial opportunities towards sustainable performance (economic, environmental, social performance), and whether EB strengthens the relationship of these variables within manufacturing SMEs in Malaysia.

The main contribution of the present research is its proof concerning the negative effect of EL on ECSPF, but positive effects of EL on ENSPF and SOSPF. Nonetheless, EB weakens the relationship between EL and sustainable performance. This signals that EL is very important in driving organizations and the external environment towards sustainability. The EL sustainability initiatives will: result in superior quality products and services; increase sales and profits; improve environmental degradation; satisfy customers and employees' needs; give reciprocal benefits to the community; and eventually contribute to the sustainable development of Malaysia.

In summary, the overall findings indicate that EL and EB represent an interesting area of research and practice, hence requiring more research to understand their substantial impact on sustainable performance. As such, the SME owners or leaders should engage in skills development as a critical first phase towards business success. This research attempts to set a solid theoretical and empirical basis for this area of research. Thus, future studies are encouraged to make use of this research to further the investigation of this interesting and important topic, namely on EL and sustainable performances that are contingent upon EB.

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