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The Influences of Leaders' Sustainability Experience on Sustainable Procurement Practice Based on Decision Support System

Hazrieffendy Bakri*
Graduate School of Business
Universiti Sains Malaysia
Penang, Malaysia
hazrieffendy@usm.my

Yuvaraj Ganesan
Graduate School of Business
Universiti Sains Malaysia
Penang, Malaysia
yuvaraj@usm.my

Azlan Amran
Graduate School of Business
Universiti Sains Malaysia
Penang, Malaysia
azlan_amran@usm.my

Mohamed Azlan Ashaari
Graduate School of Business
Universiti Sains Malaysia
Penang, Malaysia
azlan@usm.my

Shahrizal Nazri
Graduate School of Business
Universiti Sains Malaysia
Penang, Malaysia
shahrizal@usm.my

***Abstract*—Human capabilities play an essential role in decision making regarding sustainable procurement practice (SPP). As tools in helping Higher Education Institutions (HEIs) to achieve Sustainable Development Goals (SDGs), SPP requires supports from top management in ensuring the proper practice. Additionally, the leaders' sustainability experience has the potential to influence the decision regarding SPP. Therefore, a decision support system is needed to help the HEIs' top management in making a proper decision regarding the SPP and can have a high impact on overall SDGs achievement. The study utilizes the Resource-Based Theory (RBT) in explaining the importance of human capabilities in practicing sustainable procurement.**

Keywords: sustainable development goals, sustainable procurement practices, higher education institutions, human capabilities

I. INTRODUCTION

The United Nations Sustainable Development Solutions Network (SDSN), in collaboration with Malaysian HEIs, has given support to the government through developing policies and promote practical problem-solving related SDGs [1]. The changing landscape on how organizations looking at the direct and indirect impact of business activity such pollution resulted from the manufacturing process, and carbon footprint is increasing over the years, and their executives increasingly recognize the importance of sustainability to their organizations [2]. However, to implement SPP, the organization faces barriers, especially such as inadequate knowledge, no support from top management, and high cost. According to the SDGs Index and Dashboard Report 2018, the SPP in Malaysia remained stagnant, and these conditions can obstruct the SDGs achievement [1]. Thus, leaders play a significant role in the organization to implement SPP. Leaders of an organization, which Board of Directors (BOD) and Chief Executive Officer (CEO), must play their managerial and monitoring part effectively in ensuring the implementation of SPP in their organization. With the right capabilities, data analytics able to produce more effective, efficient, and economical solutions using decision support systems [3]. In the context of HEIs, even though HEIs create many data from their activities (service, teaching, and research) and the size of the organization, data analytics has the potential to provide real-time information that can reshape the campus experience and practice [4] Additionally, the leaders' sustainability experience is vital towards SPP based on the decision support system.

Therefore, the subsequent section presents the literature review and related studies. Then, followed by the conceptual framework and the formulation of the hypotheses. The final section was the conclusion.

II. MATERIALS AND METHODS

In recent years, HEIs in Malaysia are being forced to change due to several factors such as stiff competition in the higher education market, academic reputation, ranking position, and quality of teaching and learning [5]. SPP is one of the tools that play an essential role in helping to achieve the SDGs. However, empirical research found that SPP implementation is fractional [6]. Based on this circumstance, the usage of technology by experienced leaders in higher education has become more critical towards improving the performance of HEIs.

A. The Resource-Based Theory (RBT) as the under-pinning theory

Commonly, studies on SPP draws on agency theory and stakeholder theory. The agency theory explains that the agent performs the work as delegated by the principal With the relationship, the agent must choose actions that have consequences for both the agent and the principal. While for stakeholder theory, as open systems, organizations are conscious of and respond to stakeholders ' requirements.

The resource-based theory examines efficiency based differences of organizations based on their resources, such as market influence or strategic behaviors [7]. The main assumptions of the resource-based theory are: (a) organizations may have different resources even though they are in the same industry, and (b) the resources are unique and may not suit other organizations. Therefore,

organizations compete against others with their resources and capabilities. The resource-based theory is tailored to the theoretical arguments for two purposes in this research. First, it acknowledges intangible resources such as organizational culture driven by vision and mission, leadership experiences, partnerships, and other intangible resources that help the organization gain competitive benefits. Secondly, as part of internal environmental forces, societal requirements are defined to drive an organization to create its unique resources [8]. As such, drawing on the implementation of SPP and providing a sensible explanation for evaluating the amount of SPP, the resource-based theory is a suitable theory.

In the context of SPP, the resource-based theory explains on strategic management perspective [9]. For instance, in the procurement process, an organization resource will affect a decision on how often to seek out tender and contracts related to sustainability, as well as the type and cost of contracts [10,11,12]. Therefore, this study uses the resource-based theory in explaining the relationship between leaders' sustainability experience and SPP.

B. Sustainable Procurement Practice by Malaysian HEIs

Sustainable procurement is a process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money regarding generating benefits not only to the organization but also to society and the economy while minimizing damage to the environment throughout the supply chain. SPP is used to pursue the sustainable development objective of organizations and ensure it in line with the SDGs principle in which, having a better society, a better environment, and better governance [13]. SPP can be considered as the primary contributor of SDGs as it can impact the organizations' policies and strategies towards the environment, local economy, and society within the supply chain [14]. Subsequently, a sustainable organization is an organization that drives for a profit while considering the impact of its activities on the environment and society in order to satisfy the stakeholder's needs. The sustainable organization considers sustainability issues seriously when developing strategies and making decisions [15]. Sustainable procurement practices can provide sustainable economic growth and promote sustainable consumptions as listed in the SDGs goals. Sustainable procurement also being used as one of the tools in strategic activities to achieve sustainable development objectives through the purchasing and supply process by considering the elements of environmental, social, and economic objectives [16].

Malaysian Government initiated a pilot SPP program in several Ministries to study and monitor demand and supply activities for green products and services. The GGP initiative has the underpinning principle of the environment, economic, and societal [17]. However, Malaysian HEIs is struggled to deal with sustainability issues caused by institutional bureaucracy, an unclear chain of responsibilities, and a high turnover of staff. Previous studies recommend that to enhance the chance of successful sustainability project relies on strong leadership, the support of senior administrators and the adoption of a clear sustainability policy [18–20]. Several reasons explain why socially, and environmentally responsible procurement practices have yet to become a fully established practice at the organizational level and why it struggles to gain the status of a mainstream management concept. First, such practices, at least at the front end, are perceived to be resource-intensive and costly [21]. Second, evidence regarding the tangible benefits of environmentally responsible procurement remains unclear. As a result, leaders, who typically are more interested in the 'bottom-line, are reluctant to dedicate significant organizational capital to actions that are not guaranteed to generate concrete benefits [21]. Third, implementing sustainable procurement can be quite challenging, both regarding technical aspects as well as regarding navigating the politics of the organization. It requires strategic management regarding resources to the process [21]. Fourth, political factors and organizations often approach sustainability in 'fragmented' ways, which are 'disconnected' from the overall organizational strategy [21]. Even though the SPP receives growing publicity, the practices are fractional, in which focusing only on the societal and environmental aspects of sustainability [10,22]. The SPP should be conceptually framed and understood within a three-dimensional framework: social/societal, environmental, and economic [6,7]. Therefore, this study focuses on the influence of the leader's sustainability experience and the strategy on SPP based on the decision support system.

C. Influence Of Leaders Sustainability Experience

In the age of big data, establishing a data-driven organization has become imperative for HEIs. A data-driven organization offers an institution with the instruments to make valuable, more informed decisions [23]. The capacity to utilize data analytics and tools for decision support systems, and to make strategic decisions based on outcomes, is highly dependent on the skills and knowledge of the human resources [24].

The leaders of an organization or such as CEO and BOD, are responsible for ensuring the business process aligned with the objective and direction of stakeholders' interest. As leadership identified as the driver of sustainability practices in the organizations, leaders with sustainability-related experiences can help organizations to successfully achieve SDGs through channeling trained peoples, resources, and stimulate improvement [25,26]. Even though the CEO and BOD were the top management of organizations, the responsibilities of the CEO and BOD are different from each other. The CEO is responsible for the development and implementing the strategy, making corporate decisions, managing resources and operations, and disseminating information from BOD to the operational level and vice versa [22,27]. As for the BOD, as representative of stakeholders, they were responsible for establishing policies, formulate strategy, and advising the CEO [28]. The previous study on sustainability practice found that the success of sustainability practices largely depends on the characteristic of decision-makers such as CEO and BOD environmental knowledge, expertise, and attitude of top management. For instance, the cognitive influence of leaders may lead to the change in the interpretation of institutional pressures relating to sustainability practices [29–32]. The leaders with sustainability knowledge and experience can influence and become a useful catalyst in transforming his organizations'

activity into sustainability activities and foster environmental improvement [22]. The leaders' educational background has a significant impact on the sustainability issue. The more associated the leaders' educational background to the sustainability area, the leader's tendency to support the sustainable decision and sustainability practice is higher since the leaders are familiar with the issues. Familiarity with sustainability policies is an essential factor in influencing sustainable procurement practice [10,14,18]. Equipped with knowledge and experience, the leaders can align the business strategy and operations with vision and mission and shared it among all the workers in the organizations effectively. For instance, if the leaders can clarify the performance expectation, role expectation, and rewards from the accomplishment, the trust, commitment from the staff, and finally, performance will materialize [33]. Therefore, sustainability experience is an essential characteristic in helping the CEO to determine what specific issues regarding sustainability and to defend the proposal effectively.

The utilization of data to drive organizational decisions has been common in business and other sectors long before education. One of the main objectives of data analytics is to improve performance outcomes and guide the decision-making process of HEIs in ways that lead to accomplishing strategic institutional goals. Therefore, BDA serves as a valuable tool to help guide HEIs in ways that are feasible within the capacity of the institution to face change and resource constraints [34]. Data from the information systems of HEIs provide a transparent analysis and means for a shared understanding of the institution's successes and challenges. To fully collect and utilize data, HEIs will need to ensure that their key decision-makers have data literacy skills [35]. Additionally, the importance of developing people with high levels of data literacy and the ability to build a culture supportive of decision support systems was recognized by many scholars [34–36].

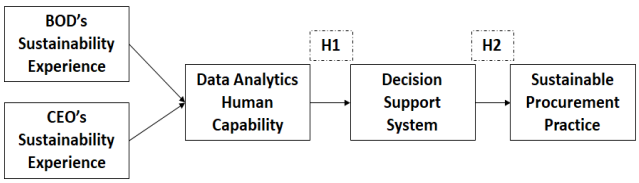

Fig. 1: Proposed conceptual framework.

III. Results

A. Conceptual Framework

The necessity of the decision support system to improve the SPP of Malaysian HEIs is required in this fast-changing environment. By leveraging on data analytics, it will further assist organizations in optimizing core processes, functions, and roles in order to meet stakeholder demands, thereby creating competitive advantages, managing risk, improving controls and, eventually strengthening organizational performance by converting information into intelligence [37]. Another critical element of data analytics in HEIs is how to utilize its capability to improve decision effectiveness further.

The lack of personnel with the appropriate skills and experiences was noted in numerous studies and constituted a significant constraint in realizing the full potential of these technologies [38]. The center of attention has been placed on human capabilities primarily due to the novelty of the role, other skills and knowledge sets are necessary for employees of firms engaging in data analytics for the decision support system [38]. Due to the fusion of business and IT departments in the firms, the importance of a liaison person has emerged; that is, a person capable of bridging the siloed departments and making them work collaboratively [34]. Many organizations have paid attention to the potential use of business intelligence systems to monitor, measure, and manage performance more efficiently than ever before, and performance management has become one of the most critical applications of business intelligence [4]. HEIs should build their data-driven decision-making process based on performance management, such as an SPP, to monitor processes and outcomes. In this study, SPP refers to the ability to practice sustainable procurement that encompasses the triple bottom line, develop systematic and appropriate monitoring, evaluating and control approach to observe and measure SPP performance, and then guide managerial actions accordingly upon the outcome [36].

Leaders' sustainability experiences play an essential managerial role in influencing the implementation of corporate sustainability and tackling sustainability issues as he is responsible for formulating a strategy for organizations. Based on the previous study, leaders' sustainability experiences have a significant positive effect on sustainability performance in terms of influencing decisions regarding sustainability [27,29,39,40]. Moreover, the leaders are known to play a significant role in catalyzing the sustainability practice in the organization [22,27,40]. From the resource-based view perspective, the leader is a part of internal resources that contribute to the organization's competitive advantage. As the leaders gain experience through its educational background, involvement with NGOs that promote sustainability and professional network, the leaders experience become unique as he or she is more exposed to a various aspect of sustainability [41].

Furthermore, leaders can identify and convey sustainability issues more effectively and efficiently. The leaders also can identify opportunities that come with the implementation of SPP. Also, the BOD and the CEO also able to use an external resource such as collaboration with industries and NGOs for the organization's benefit to create a competitive advantage for the HEI. In the context of decision support system and SPP, this study focuses on the role of the decision support system from the viewpoint of data analytics human capabilities, which was derived from the above discussion.

B. Formulation of Hypotheses

Based on the conceptual framework as shown in Fig.1, the researcher hypothesized that:

H1: Data analytics human capabilities have a significant positive effect on the decision support system.

H2: Decision support system has a significant positive effect on the sustainable procurement practice of Malaysian HEIs.

IV. CONCLUSION

This study aims to establish a conceptual framework for evaluating the influence of leaders' sustainability experience on SPP among HEIs in Malaysia based on a decision support system. Precisely, this study seeks to evaluate the relationship between the data analytics human capabilities and SPP of Malaysian HEIs in terms of the triple bottom line. Using the resource-based view as the underpinning theory, this study contributes to enrich the SPP literature by presenting a conceptual framework for the impact of SPP on HEIs in Malaysia. The findings will propose a guideline for the government or top management in the other fields who want to embrace SPP to gain competitive advantages. Also, this will enable them to develop policies and procedures for organizations' strategic decisions, operational and resources.

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