ISSN: 2042-5961 (Print) • 2042-597X (Online)

WJEMSD

World Journal of ENTREPRENEURSHIP, MANAGEMENT AND SUSTAINABLE DEVELOPMENT

VOLUME 18 • NUMBER 2 • 2022

WJEMSD is published by the World Association for Sustainable Development (WASD) in the United Kingdom (4 Issues per year)
WJEMSD is abstracted and indexed by: Scopus; Thomson Reuters Emerging Sources Citation Index; INSPEC; ReadCube Discover; ABI/Inform (ProQuest); Cabell's Directory of Publishing Opportunities; British Library; and Crossref and is ranked by the Australian Business Deans Council (ABDC) and the Norwegian Centre for Research Data (NSD).

WASD
WORLD ASSOCIATION FOR SUSTAINABLE DEVELOPMENT

www.wasd.org.uk

WJEMSD V18 N2 2022

WJEMSD

Annexing a Smart Sustainable Business Growth Model for Small and Medium Enterprises (SMEs)

WASD
WORLD ASSOCIATION FOR SUSTAINABLE DEVELOPMENT

WJEMSD

WASD
WORLD ASSOCIATION FOR SUSTAINABLE DEVELOPMENT

World Journal of
ENTREPRENEURSHIP, MANAGEMENT
AND SUSTAINABLE DEVELOPMENT

ISSN: 2042-5961 (Print) | 2042-597X (Online)

WJEMSD V18 N2 2022

OPEN ACCESS

DOI: 10.47556/J.WJEMSD.18.2.2022.2

CONCEPTUAL PAPER

Annexing a Smart Sustainable Business Growth Model for Small and Medium Enterprises (SMEs)

Ariful Islam
PhD Candidate
University of Putra Malaysia (UPM)
Putra Business School (AACSB-Accredited)
E-mail: farhan_ctg2012@yahoo.com

Sazali Abd Wahab
Professor (Director-Thesis Based Programme)
University of Putra Malaysia (UPM)
Putra Business School (AACSB-Accredited)
E-mail: sazali@putrabs.edu.my

Ahmad Shaharudin Abdul Latiff
Senior Lecturer
University of Putra Malaysia (UPM)
Putra Business School (AACSB-Accredited)
E-mail: shaharudin@putrabs.edu.my

ABSTRACT

PURPOSE: For SMEs, the rate of business failure is alarmingly high. At the same time, the digital revolution has substantially changed the present business environment and put pressure on SMEs to reflect on their current strategy to achieve sustainable business growth. This study therefore attempts to conceptualise an advanced technology-oriented Triple Bottom Line (TBL) layout to configure a smart sustainable business growth model for SME's long-term survival.

DESIGN/METHODOLOGY/APPROACH: A systematic analysis of the literature has been executed to analyse the smart sustainable growth configuration triggered by recent technological advancements, in which over 355 publications have been read and reviewed by the authors. The study explores the concept of digital performance to fill the void of "technological advancement for a sustainable solution" as an element in TBL, which is seen as an obstacle that prevents SMEs from being smartly sustainable. Here, validity was aimed at through sampling articles based on established guidelines.

CITATION: Islam, A., Wahab, S.A. and Latiff, A.S.A. (2022): Annexing a Smart Sustainable Business Growth Model for Small and Medium Enterprises (SMEs). *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 18, No. 2, pp. 185–209.

RECEIVED: 1 March 2021 / **REVISED:** 30 May 2021 / **ACCEPTED:** 30 May 2021 / **PUBLISHED:** 15 December 2021

FINDINGS: The outcomes of the study successfully established an adjusted paradigm, the SQBL (Smart Quadruple Bottom Line), with the inclusion of digital performance. The study showed that the strategic convergence of social, economic, environmental, and digital performances has the potential to enable SMEs to survive in the long term. In addition, the analysis detected probable measurements for digital performance.

RESEARCH LIMITATIONS/IMPLICATIONS: Prior empirical attempts are subsequently required to inquire about the proposed conceptualisation from different perspectives.

PRACTICAL IMPLICATIONS: This study also indicates that decision-makers, with the efficient implementation of the SQBL, could use the understanding given for their required actions to retain SMEs' strategic edge or even competitive advantage in terms of economic, social, environmental, and digital (advance technology) concerns. This could prove to be beneficial for guiding SMEs to enhance business efficiency and use data-driven decision-making.

SOCIAL IMPLICATIONS: It may encourage building a community of agility, innovation, and collaboration based on the concept of the SQBL, and guide the attainment of the objectives related to climate change.

ORIGINALITY/VALUE: This article is the first to analyse digital performance as a new dimension of the TBL layout to achieve smart sustainable growth for SMEs. The SQBL platform promises to contribute significantly to the success of more comprehensive and sustainable SMEs, as well as to extend the current literature on sustainability and digitalisation.

KEYWORDS: *Innovation; Digital Performance; SDGs; Society 5.0; SME; Sustainable Growth; TBL*

INTRODUCTION

The importance of small and medium-sized enterprises (SMEs) in economic growth is becoming more widely recognised. According to the World Trade Organization (WTO) (2016), SMEs account for more than 90% of business establishments, around 70% of jobs, and 55% of GDP in advanced economies. In this regard, this segment also contributes up to 40% of GDP in developing economies and provides 70% of occupational opportunities (World Bank, 2018). SMEs also make up more than 99% of all enterprises in the EU-27 and contribute more than 66% of total jobs (Rotar *et al*., 2019). Therefore, it is important for this segment to remain smartly competitive in the current market and achieve long-term survival. Unfortunately, although there is a massive establishment of SMEs, the rate of failure is also alarmingly high. According to several reports, nearly half of SMEs fail within the first five years of operation, with nearly two-thirds failing within the first ten years (SBA, 2014; DeGeest *et al*., 2017). Yusoff *et al*.'s (2018) review also indicates, even in the absence of credible evidence, the failure rate of SMEs is extremely concerning for the economy. In addition, a significant increase in the failure rate of SMEs under the COVID-19 pandemic of almost 9 percentage points is recorded in the latest Kalemli-Özcan *et al*. (2020) report. At this juncture, academic debate is focused on the quest for an acceptable growth paradigm for SMEs (Islam *et al*., 2021a; Salder *et al*., 2020).

Considering the scenario, many scholars emphasise the idea of sustainability in business strategy that can promote innovation, mitigate risks, and develop values for both SMEs and the community (Moore and Manring, 2009; Porter and Derry, 2012; Schaltegger and Wagner, 2017). We believe that integration of the idea of sustainability inside vision, mission, goals, and objectives is critical for the formulation of competitive advantage leading to a firm's business success (Cantele and Zardini, 2018). At this juncture, sustainability in business is rooted in the idea that implementing such strategies enhances a firm's longevity (Depken and Zeman, 2018)

without compromising the requirements of the near future (Gimenez *et al*., 2012). Because of this direction, at present, consideration of Triple Bottom Line (TBL), which is basically an accounting theory, is a core component of almost every sustainable business model aiming for a firm's long-term survival (Tarnanidis *et al*., 2016; Tate and Bals, 2018). In reality, TBL is a transformation framework for organisations that expands business success metrics to embrace approaches to ecological health, communal wellbeing, and economic success (Slaper and Hall, 2011). Here, the strategy of reinforcing the natural, social, and economic structures within the success mechanism of SMEs is the essence of a sustained form of business growth. Many studies, such as Khan and Naeem (2018), Hussain *et al*. (2018), and Muñoz-Pascual *et al*. (2019) have used the TBL layout to analyse the sustainable growth or performance of SMEs, but most of them are only able to scratch the top of the entire scenario. In fact, a smart structural conceptualisation, capable of untangling prospective directions applicable to the achievement of a strategic competitive gain of SMEs in terms of the convergence of sustainability and advanced technology, has not, in reality, yet been delivered to our best understanding.

John Elkington (1994) framed the TBL to demonstrate that an enterprise should be run in a manner that not only makes a profit but also benefits the lives of people and the world. Interestingly, the idea of a TBL-oriented sustainable business outline has been extensively debated, particularly with an emphasis on three bottom lines that define sustainable business achievements (Islam and Wahab, 2021). Norman and MacDonald (2004) argue that the TBL cannot be saved merely by softening its claims: the direction is deceptive and can serve as a smokescreen for companies to avoid more positive communal and ecological results. Later, Elkington (2018) also indicates a major limitation of TBL that it can sometimes be difficult to turn gears or set priorities between social, economic, and environmental requirements or goals. At this point, the study of Sridhar and Jones (2013) also agrees about the weaknesses of the TBL approach, which is the absence of an effective adjustment mechanism between those dimensions. The authors also condemn the lack of emphasis on processes in the TBL approach and highlight the need for more integrated output representation. In addition, Osburg (2017) claims that, in the future, the communal dimension will become at least as important as the ecological dimension, and the explanation for this is our world's continuing digitalisation. In reality, we are running towards an economy powered by advanced technology that is increasingly governed and operated by digital algorithms. On a different note, the TBL-focused business model also faces criticism and calls for smart renewal regarding the strategic shortcomings to endure the COVID-19 pandemic (Di Vaio *et al*., 2020; Hakovirta and Denuwara, 2020). As an outcome of debates, the scholastic works of Alibašić (2018), Bertella (2019), and Zawawi and Wahab (2019) contend the requirement for the explicit inclusion of the new dimensions of TBL; however, none of them considers the incorporation of the dynamics dependent on advanced technology in the outline.

We have seen a growing and pressing need for conventional firms to move to smarter methods of process execution (Caputo *et al*., 2021). In this direction, using digital technology, such as

Cloud Computing, Artificial Intelligence, IoT, Big-data Analytics, Blockchain, Augmented Reality, and Social Networks with the information and automation, SMEs may explore new business markets and optimisation possibilities leading to their success or growth (Bharadwaj *et al*., 2013; Fitzgerald *et al*., 2014; Khin and Ho, 2019). Here, different digital technology can help minimise costs and save time and energy, especially for businesses struggling with lower manufacturing volumes, confronting reduced demand and bargaining power, and having less internal competence to cope with dynamic business conditions. In fact, many decision-makers in various sectors have recognised that their companies' potential success or loss would be determined by how they react to recent digitalisation challenges (Bughin, 2017). By 2023, IDC (2019) hopes that at least 50% of global GDP will be digitalised. To drive these new digital projects forward, organisations will spend an unprecedented US$2.3 trillion in suitable next-generation technologies over the next five years alone. Latest initiatives by OECD governments to strengthen the level of SME expertise for technology adoption develop digital connectivity and strengthen SME links to global technology, and innovation networks have converged (OECD, 2019).

Kiron and Unruh's (2018) review lays the groundwork for our conceptualisation that digitalisation and sustainability are two of the most important industry platforms in today's corporate setting. Examples of these two trends interacting within the organisational premise range from clean innovation to greening manufacturing practices to shaping a firm's brand image as a sustainable enterprise. Furthermore, the digitalisation of SMEs can have an effect on the achievement of the United Nations' Sustainable Development Goals (SDGs) (Zhanna and Yana, 2020). From one perspective, it will provide firms with the resources they need to ensure the implementation and incorporation of economic, social, and environmental dimensions, as well as ensure and increase effectiveness, operational accountability, and system quality (Kardos, 2012; Pucihar *et al*., 2019). This direction demands to embrace the synergy of digital technology with the strategic outline of SMEs in terms of sustainable outcomes. However, the recent digitalisation process is the nethermost exciting sustainability-oriented transition to counter the sustainable business accomplishments (Isensee *et al*., 2020; Knudsen *et al*., 2021). We cannot neglect the fact that the wider influence of digital technology as a driver for the smart transition within SMEs is radically altering our understanding of the TBL as a guiding principle for achieving balanced and inclusive growth. The study of Shdifat *et al*. (2021) clearly explains how using digital technology (e.g., Big-data Analytics, IoT) could aid in the establishment of long-term growth outcomes based on the TBL approach. Simply put, greater resource connectivity through digital technologies provides greater insight into activities and allows for improved decision-making, effectively assisting business firms in achieving a larger picture of sustainability end objectives. In reality, the nexus between the digital form of technology and sustainable business layout shows excellent, yet not exposed, possibilities to promote a transition towards sustainable business growth configurations.

However, very limited attempts have been made to incorporate multiple strategic considerations, such as TBL's sustainable business layout and technological complexities, to provide

a more appropriate and coherent overview of the long-term survival or growth phase of SMEs. Therefore, in developing a consensus of the mentioned arguments, the objective of this paper is to enhance the TBL concept by introducing the fresh idea of integrating the dimension of digital performance leading to the adjusted paradigm of sustainable business growth: the Smart Quadruple Bottom Line (SQBL). We believe that analysis of the above mentioned objective will satisfy our research question on how the integration of digital performance inside the TBL layout can help to achieve sustainable business growth. This study argues that this recently evolved SQBL paradigm may provide SMEs with a more effective, detailed, resilient, and smart sustainable business growth model to achieve success in today's demanding climate. Here, the word "Smart" essentially refers to its adjusted compatibility with digital technology in this conceptualisation.

The overriding motivation of this article, however, is to introduce an holistic socio-technical direction to the ongoing array of studies on transdisciplinary approaches to business sustainability. Here, we try to galvanise the entire framing of this paper from the essence of Society 5.0 promoted by the Japanese Government in April 2016 (Fukuda, 2020). It is about building a world that blends digital transition with higher values and resources, aiming to create a richer existence that will support the community in a structure that incorporates cyberspace and physical space in a fully interconnected fashion (Deguchi, 2020). The idea of Society 5.0 can create a digital performance-oriented framework that creates SMEs with new opportunities to compete in the global economy, innovate and expand in the face of greater sustainable achievements.

The section that follows will examine the study's methodology before delving into the ideas of sustainable business growth, the conceptualisation of digital performance, and measurements. The study question will then be resolved using a recently invented paradigm known as the Smart Quadruple Bottom Line (SQBL), which acts as a direction for SME's long-debated sustainable growth outline. Aligned with the note, we, the authors, are also seeking to clarify the contribution of our proposed SQBL concept to the SDGs and Paris Agreement prism. In addition to the application of this conceptualisation, the value of adaptive governance has also been examined.

METHODOLOGY

This systematic literature review-based conceptualisation embraces more than 500 peer-reviewed articles in the methodological process. Recommended directions for a systematic literature review have also been followed (Hart, 2001) by (a) identifying information sources, (b) identifying related research articles, and (c) identifying reviews of focused items. We started by selecting several major databases, such as Web of Science (WoS), SCOPUS, Emerald, ScienceDirect, Springer, JSTOR, Sage, Wiley, and MDPI. The database selection process was influenced by some previous review studies on a similar context. This variation of databases helped us to compile a detailed list of articles that were important. At this juncture, selective keywords, such as firm growth, SME, sustainability, digitalisation, advanced technology, and TBL (Triple Bottom Line), assisted search engines in finding related articles. However, searches were not limited to these keywords.

We then classified all the papers into five sections:

(a) keywords;
(b) unit of analysis;
(c) data collection approach;
(d) technique (conceptual vs. empirical); and
(e) theory.

We screened the papers based on their subject importance as determined by reading their abstracts and, in some cases, reading the complete articles. We established that 355 articles had a reasonable connection with the direction of study. Following the systematic evaluation process, we established several pertinent themes:

(a) sustainable business growth;
(b) technology in business;
(c) sustainability in business;
(d) digitalisation in SMEs;
(e) technology-driven business sustainability;
(f) Sustainable Development Goals and SMEs; and
(g) miscellaneous.

Reliability was sought in this literature review by addressing Hart's (2001) methodological measures. Three researchers conducted the literature review and each phase was addressed before and after to improve inter-rater reliability during the analysis (Seuring and Müller, 2008). At the same time, validity was targeted by sampling papers based on existing criteria (Hart, 2001; Okoli, 2015), and constructs were compared inside and outside the field of study from previously published literature reviews (Fagerberg *et al*., 2012). In addition, continuing academic work on this analysis was also discussed at conferences and workshops, encouraging other scholars to comment on the work-in-progress process.

SUSTAINABLE BUSINESS GROWTH

As a sign of achievement, the concept of growth is an important focus in entrepreneurship studies or investigations, in the field of economic research as a further contribution to the economic outline, and strategic management studies as the firm's primary objective. Sustainable growth from a financial point of view denotes growth under the financial limits of the company (Alayemi and Akintoye, 2015) without increasing the financial leverage outline (Ross *et al*., 2010). Harmon *et al*. (2009) characterise it as the potential of the firm to accomplish its aims and the worth of shareholders by a deliberate attempt to implement policies related to economic, financial, and social

practices. Stefanikova *et al*. (2015) describe sustainable growth as a long-term view of a company's sustainability. Again, research by Yusoff *et al*. (2018) aims to conceptualise sustainable growth of SMEs as growth in self-sufficiency by achieving financial targets and results that are consistent over time within the abilities or capacities of the businesses, while affirming and preserving potential achievements without jeopardising their long-term existence.

Sustainable SME growth implies sustainable business practices in the economy. It is also a significant predictor of SME progress (Sälojarvi *et al*., 2005) and social stability. To facilitate the firm's reliable, long-lasting existence and continuous improvement, it is important to recognise the factors that both impede and promote successful growth in the sector. Regrettably, a sustained form of growth is low, with most businesses not improving appropriately (Dobbs and Hamilton, 2007). Sustainable business growth, maybe with technical innovations, requires long-term digital investment to reshape the entire approach of SMEs to business (Knudsen *et al*., 2021). In particular, consensus on the most suitable model of sustainable growth for small and medium-sized businesses, taking into consideration the scope of Society 5.0, is not close to being established. Therefore, the critical need for a sustainable growth strategy for SMEs that focuses on digital dynamics is clear.

CONCEPTUALISATION OF DIGITAL PERFORMANCE

Recently, much research effort has been made to incorporate digital technology, also known as digitalisation, especially in the domain of SMEs (Kergroach, 2020). Information and Communication Technology (ICT) frameworks that standardise information and allow organisations to easily code, store, formalise, and spread increasing volumes of knowledge are focused on digital technologies, which are becoming more and more critical for organisations (Markus *et al*., 2006). For two decades, research has explored how emerging technology can enhance profitability through organisational quality changes (e.g., via improved resource management) and consumer focus (e.g., through more precisely meeting business needs) (Brynjolfsson and McAfee, 2014; Melville *et al*., 2004). At this point, Gamache *et al*. (2019) also found that research on digitalisation covers vision and policy, expertise learning and growth, agile structures and growth, cybersecurity, digital resources incorporation, connectivity and networking, and strategic use of technology inside the organisation. We cannot ignore that digital transformation has now transitioned from a theoretical paradigm to a practice, altering the whole face of social infrastructure, and reformatting business processes.

The idea of digitalisation reflects the change from one state to another. As a consequence, with a related indicator that tracks the effect of business decisions and directs efforts to enhance the indicator, it becomes important to measure progress. Here, the term "digital performance" will replace the notion of organisational performance at this stage. This is based on the explanations of Gamache *et al*. (2019) and Zaied *et al*. (2015) regarding organisational performance and the direction of this paper, and will be characterised by the measure to determine the progress of the implementation of a digital transformation according to the various dimensions associated with it. In fact, digital performance is generated from digital technology-based ICT activities and

human-machine interfaces (interactivity). The insight of digital performance therefore allows the strategic direction, the risks, the internal and external background, and the availability of resources, both human and technical, to guide the goals, commitments, and vectors of importance in an organisation.

The authors explicitly formulate and describe the concept of digital performance contributing to digitalisation based on the combination of two essential paradigms: Digital Leadership Theory (DLT) and Dynamic Capability View (DCV). The direction of DLT is part of the "Upper Echelon Theory" of Hambrick and Mason's (1984) investigation on leadership. According to the DLT, managers or leaders with digital performance are expected to stimulate advanced technology-based initiatives within an organisation. It should be noted here that having a leader or manager with a digital background contributes to improved technology or information management capability, and this leads to superior organisational efficiency (Chege *et al*., 2020). In reality, this style of leadership can arise from IT (Information Technology), academic premises, technological experience, and connections with society's various stakeholders (Osburg and Lohrmann, 2017). It is also becoming apparent that, regardless of the scale or form of organisation, decision-makers cannot continue to neglect or assign their responsibility for digitalisation-focused programmes (Valentine and Stewart, 2015).

A number of experts agree that developing new technology-oriented strategies at all levels, with digital leadership and competitive positioning from decision-makers, leads to organisational success and improved business value (Caputo *et al*., 2019; De Haes and Van Grembergen, 2010; Dijkstra, 2020). Interestingly, corporate initiatives for long-term market success or sustainable achievements necessitate exceptional leadership (Metcalf and Benn, 2013). According to this note, digital leaders have the competencies to function and foresee across complex challenges, involve groups in dynamic operations, and interpret how the business's sustainability "ties" to the larger systems. Simply placed, through digital leadership development, organisations can adopt novel approaches to potentially intractable sustainable business challenges (George *et al*., 2021). These are referred to broadly as managers' or decision-makers' digital performance leading to a sustainable digital transformation process. At the moment, digitalisation is a critical strategic challenge for businesses, and they need digital leaders to navigate this digital transition in accordance with sustainable business goals (Ross *et al*., 2017). Therefore, the accomplishments of digital leaders will determine which companies can succeed in the future business environment (Kane *et al*., 2019).

The DCV theory defines dynamic capabilities as the ability to create, incorporate, and reconfigure internal and external resources in the face of a constantly evolving business climate (Teece, 2007). This direction is recognised as one of the most important tools available to organisations for creating and sustaining value (Lin and Wu, 2014). At this point, digitalisation through dynamic capabilities enables businesses to reconfigure their resources in response to a demanding market scenario. In reality, digitalisation increases the scope, scale, and versatility of

firms' available resources (Guo *et al*., 2020). However, the dynamic technology capabilities that contribute to an organisation's digital performance are, in fact, a subset of all dynamic capabilities (McLaughlin *et al*., 2017; Wilden and Gudergan, 2015). As a result, the performance and emphasis on both dynamic technology capabilities and dynamic capabilities remain the same—to reinforce an organisation's strategic positioning. Here, managers may improve firm performance by using dynamic technology capabilities, regardless of the level of business and technical change they face (Li and Chan, 2019). In reality, effective digital transformation necessitates the development of a diverse set of capabilities leading to business outputs that vary based on the market context and the needs of the individual enterprise (Witschel *et al*., 2019).

Dibia *et al*. (2014) identify two categories of processes based on the DCV and the hierarchy of capabilities: a) capability-building actions, and b) competitive-action-generating actions. In this sense, we conclude that capability contributing to digital performance, a low-order capability, allows the higher-order capability of corporate agility, allowing the firm to fundamentally adjust its products, processes, or business configurations to endure the digital era. More specifically, we believe that the participation of aligned digital leadership negotiates the process of effectively evolving higher-order capabilities from lower-order capabilities (Schoemaker *et al*., 2018). Moreover, several scholars have also concluded that sustainable business performance can be tackled by a continuous adjustment mechanism, which can be aided by a firm's dynamic capability (Eikelenboom and de Jong, 2019). Here, the strategic directions serve to create long-term business prospects from increasingly evolving stakeholder demands, as well as to reconfigure internal functional capabilities for responsible digitalisation.

The advancement of digital performance can aid in the creation of new concepts or ideas, smart solutions, and novel offerings that are among the most essential efficiencies for SMEs to have in today's competitive business market. It can also help SMEs easily change their processes while keeping costs down. As a consequence, digital performance-guided innovation programmes could have the desired ability to pave the way for SMEs to progress towards a sustainable growth process. This form of smart value generated from digitalisation would reinforce the direction of the sustainable business outline of SMEs and therefore needs to be given special attention by researchers.

Because of the complexities of digitalisation and long-term business success, gaining a strategic edge solely by digital performance is impossible (Pagani, 2013). As a result, to maintain a sustainable relationship and create value networks with the right partners, it could be important to acquire collaborative effectiveness (Amit and Han, 2017). In this note, the concept of digital performance may help with the growth of value propositions within long-term business strategies that combine environmental, social, and economic value. In reality, the current path of digitalisation in SMEs is a critical enabler of business transformation (Isensee *et al*., 2020), and it must be carefully driven by digital performance to optimise its long-term or sustainable benefits.

MEASUREMENT OF DIGITAL PERFORMANCE

In terms of attempts to determine digital efficiency, the measurements of Elbashir *et al*. (2008) are regarded as very important. An initial list of measurement items was planned, driven by Porter's method, following a wide analysis of both the scholarly and technical literature on the business process and the effect of ICT on organisational efficiency, with a particular emphasis on Business Intelligence (BI) structures. In order to classify candidate items, 50 cases published in the *Business Intelligence Journal* during the period 1999-2004 were reviewed (Eckerson, 2004; Edwards, 2003; Grecich, 2000). Digital technologies and digital capability are important evaluation metrics of digital innovation-centred organisational success or performance, according to the latest Khin and Ho (2019) report. With regard to digital capacity, Paladino's (2007) steps are suggested in this report. Again, in 2017, the HUB Institute created a blueprint to help organisations achieve a digital transition (Vivier and Ducrey, 2019). According to the HUB, for the sense of corporate strategic planning six main digital aspects need to be discussed. They are leadership, philosophy and organisation, technical management, data management, evaluation framework (decision-making), and customer engagement. However, Gamache *et al*. (2019), associated with Vivier and Ducrey (2019), devised a digital performance evaluation framework that incorporates the literature's 24 sub-dimensions, arranged according to the concept of the HUB Institute.

In order to enhance its efficiency at both the corporate and operational levels, digital performance, based on the notion of organisational performance, is described as the application of appropriate intelligent business practices. We initially consider using four critical measurements to calculate digital performance based on the calculation specifics of the above study. We suggest that leadership, infrastructure, data management, and decision-making can be the key aspects of the measurement process. They are the most valuable means of evaluating the credibility of decision-makers towards digital transformation and productivity for the purpose of this paper, taking into account positive dedication to their staff and organisations. Any of these aspects, all posed by literature on the subject of digital transformation, is itself broken down into a multitude of parameters. Therefore, the next step is to validate the model using a questionnaire to recognise the most important components of digital performance in the sustainable business configuration of SMEs.

THE SMART QUADRUPLE BOTTOM LINE (SQBL)

At the same time, firms must mitigate inflexibility in order to better equip themselves in the face of business uncertainties. In this sense, digital dynamics-related innovation initiatives are necessary for firms to gain flexibility, overcome business obstacles, and achieve a sustained form of growth. We also note that if firms want to stay competitive in the future, the need for new or adapted paradigms in complex resource-based business processes is well established (Chaharbaghi and Lynch, 1999; Salder *et al*., 2020). Any innovative business outline must foster sustainability and competitive

advantage; this requires that its owners or managers acknowledge transition favourably and that the Triple Bottom Line is regularly taken into account in their operational strategies (Anwar, 2018; Islam and Wahab, 2021; Ojo *et al*., 2015). Here, decision-makers with the potential to ensure digital performance-related success are expected to still have good values and the integrity needed to make data-driven effective decisions regarding sustainable business achievements (Aksin-Sivrikaya and Bhattacharya, 2017; Isensee *et al*., 2020; Provost and Fawcett, 2013). Given the nature of its evolution, it is anticipated that the sustainable business outline will adapt to the new opportunities of the digital age, or vice versa: digitalisation is the force that alters the configuration of sustainability (Seele and Lock, 2017).

Since the current TBL-oriented sustainability layout does not contain any aspect of workers' or managers' digital dynamics, it may be argued that it lacks a smart technological component. This smart aspect actually promotes the integrity, competence, digital leadership, IT knowledge, innovation, and successful decision-making that are central to formulating a more robust and advanced sustainable business configuration (Aksin-Sivrikaya and Bhattacharya, 2017; Seele and Lock, 2017; Sheninger, 2019). In fact, all aspects of global cultures and economies are fundamentally altered by digital disruption, and the understanding of the sustainability paradigm itself is likely to shift (El Hilali and Manouar, 2018). In the current times, sustainable business growth needs modern technology, new psychology, and new tactics. Therefore, innovative techniques of empirically assessing digital performance in future analysis need to be implemented by strategic management in order to increase business sustainability at a more systematic level. For these purposes, this study contends that digital performance, as a fourth dimension, must be incorporated into the TBL configuration. This conceptualisation has been severely influenced by the studies of del Río Castro *et al*. (2020), Di Vaio *et al*. (2020), Saarikko *et al*. (2020), and Zawawi and Wahab (2019). Here, an informed decision-making process based on data-driven insights and operational accuracy as the output of digital performance can assist owners and managers in creating superior advantages over long-term survival for SMEs. It may be said that these essential competencies explicitly foster smart sustainability in SMEs on the basis of TBL values.

To sum up, the interactive component of digitalisation serves as an integrative mechanism for TBL harmony in SMEs. Therefore, the calculated inclusion of the digital performance with environmental, social, and economic aspects forms a new conceptualisation: The Smart Quadruple Bottom Line or SQBL. The authors describe SQBL here as a smart concept that combines digital performance in SMEs to serve as a systemising mechanism that enhances TBL performance, resulting in sustainable business growth leading to the achievement of SDGs. The SQBL is actually calculated by four components: a) environmental performance, b) social performance, c) economic performance, and d) digital performance, combining all aspects of the TBL-focused business outline. Therefore, the proposed new SQBL paradigm builds a foundation to configure smart sustainable growth models of SMEs, as shown in Figure 1.

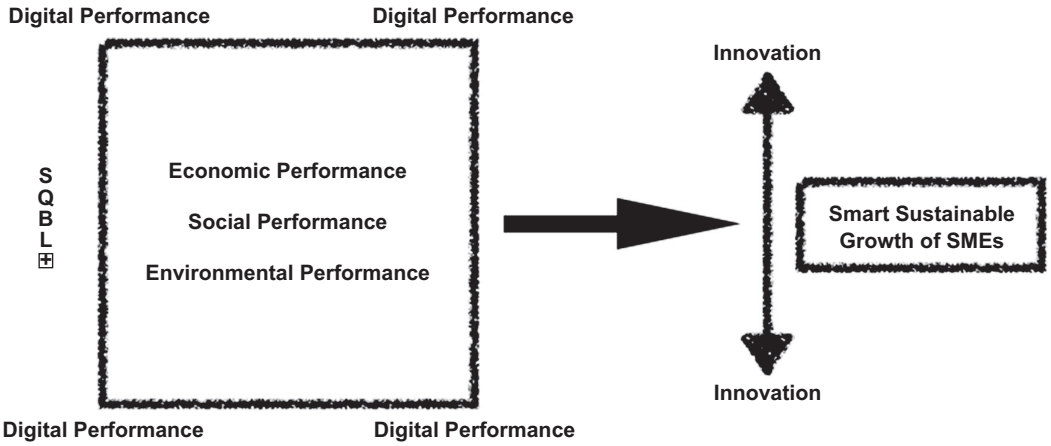

Figure 1: The Proposed SQBL: A Model of Smart Sustainable Growth of SME
Source: Formulated by authors

ADAPTIVE GOVERNANCE OUTLINE FOR THE SQBL

More than ever, past and prospective government approaches to the innovation ecosystem and the development of sustainable business outlines focused on digital technology need to be recognised today. Every government is normatively responsible for selecting the best business digitalisation governance strategy based on the society, customs, and economic requirements of the country (Garzoni *et al*., 2020; Kergroach, 2020). However, irrespective of the governance strategy adopted within a given country, a sustainable business growth model based on digital performance would inevitably entail scalable and agile governance frameworks that enable stakeholders in the industry, government, and society at large to iteratively change their best practises and codes of conduct to derive the smart benefits of digitalisation. In other words, it would be crucial for policy-makers to iteratively develop and evolve their policies in collaboration with other players in the business, academia, non-governmental organisations (NGOs), and the general public. In order to balance technological gains against the potential for social and environmental disruption and externalities, this can regulate the inclusion of the digital component in the sustainable growth model of SMEs, especially as new knowledge and expertise are acquired over time (Linkov *et al*., 2018).

Here, adaptability is required to iteratively counter adversarial challenges relevant to digital transformation as framed by the SDGs, given the regulatory authorities and initiatives adopted by a given government (Islam *et al*., 2020b; Seele and Lock, 2017). Adaptive governance can be explained in this sense as the adaptation of regulatory rules and procedures to implement new knowledge and to balance the costs and advantages of a defined behaviour (Trump, 2017). The need for sustainable governance frameworks and processes to ensure that the possible risks of digitalisation are mitigated by steps to benefit those adversely impacted by potential economic

and/or social problems has been reflected by numerous institutions in the USA, the EU, and the OECD (Linkov *et al*., 2018). A legislative decision to track risks and review current regulatory systems in the context of changing landscapes and risks will, for example, promote adaptive governance. Alternatively, adaptive governance can also be guided by voluntary agreements among the key players concerned, including resources such as codes of ethics (e.g., soft law) that can be updated as appropriate to resolve evolving problems raised by the inclusion of complexities of digital transformation in sustainable SME endeavours. Again, agile governance will be of primary significance in tackling challenges under which SMEs need to change their defences to properly absorb, rebound from and adjust to cybersecurity risks, i.e., to create higher resilience (Marchese *et al*., 2018; Trucco and Petrenj, 2017). Adversarial risk control to eliminate or minimise risks from cyberattacks must be agile and adaptive to help address evolving challenges, as with counter-terrorism (Ganin *et al*., 2017). The scope of digitalisation within a sustainable business configuration remains unclear, but it is anticipated it will have a profound effect on social and environmental practices. It is clear that adaptive governance methods are required to enable policy-makers to iteratively adapt their strategies and best practices to match the advantages of technology, considering the multimode and complex existence of digitalisation throughout sustainable business growth configuration.

THEORETICAL CONTRIBUTIONS

The research has built a revolutionary growth platform for long-term business survival by taking into account the interaction between digital technology and business sustainability. In this regard, we have defined "digital performance" as a measurable component of the present digitalisation process. The findings from our analysis also explain the role of digital performance to increase TBL (economic, social, and environmental) outputs and serves as an important foundation for the configuration of a smart sustainable growth outline. The specific need for the inclusion of digital performance in the sustainable business context has been shown by systemic research. Moreover, we have established a solid ground for future digital sustainable entrepreneurship studies.

Indeed, both objectives (sustainability and digitalisation) have forced significant changes in our business environment and how we envision it (Kergroach, 2020; Seele and Lock, 2017). As a result, our paradigm has implications for openness and accountability that offer up totally new avenues for shaping, monitoring, communicating, and governing sustainable business practices (Heemsbergen, 2016). In addition, researchers can get a learning opportunity to build an intelligent and responsible competitive edge for business firms, taking into account the partnership between these two mega-trends. In reality, it enables researchers to exploit the theoretical foundation of the digitalisation process in the face of the COVID-19 crisis and develop advanced tech-powered sustainable business configurations to endure uncertainties. Applying the theoretical lens of DLT and DCV, we have provided a research gateway that can be an underlying foundation to devise the future business success strategy of SMEs considering a

communal outline driven by advanced technologies (e.g., Society 5.0). At this point, our analysis expands the strategic management, crisis management, market transformation, entrepreneurship, and digitalisation literature by incorporating multi-discipline theories to establish a paradigm of smart sustainable growth, the SQBL.

The prospect of emerging digital technology enabling a disruptive revolution for a sustainable business future is also a further concern (Islam and Wahab, 2020). Digitalisation's arguable dynamics threaten the absorptive capacities of communities or enterprises and may multiply the already troubling patterns of social stability degradation. Our proposed configuration presents researchers with a unique opportunity to enhance their efforts to recognise and clarify the various consequences of digital systems and to predict far-reaching structural adjustments in order to establish a framework for transitions in sustainability. We note, however, that as the future is increasingly unknown, there is no magic bullet to shape and rule the digital transition towards sustainability. So, the goal for researchers is to establish accountable, resilient, agile, and inclusive knowledge-based networks.

PRACTICAL IMPLICATIONS

The growing interest in digital technology and sustainability has substantial management implications for organisational performance, design, and development. In this sense, this study is essential regarding the development of managers' systems-thinking competencies for coping with societal transformation processes and issues (Satalkina and Steiner, 2020). Moreover, the obtained results can serve as a configuration to reinforce business differentiation and competitiveness (Ferreira *et al*., 2019). From a strategic standpoint, the study can provide managers with a digital technology-focused smart roadmap for developing, implementing, and modifying a sustainable competitive edge over competitors. In this digital age, the current paradigm emerges to propose a potentially viable company strategy to satisfy the current market requirements.

Broadly, the study suggests that experimenting with digital technologies that are linked with sustainable business practices can generate greater corporate value and provide greater prospects for success. Furthermore, many firms consistently remark on the significance of competitive value gains through the application of business intelligence and analytics (Božič and Dimovski, 2019). In this direction, the proposed SQBL paradigm may hold the ability to promote, a) Data Intelligence, b) Artificial Intelligence, c) Collective Intelligence, and d) Embodied Intelligence tools for SME managers to enhance their decision-making effectiveness founded on sustainable values (Mezghani and Aloulou, 2019). It may also have an immediate and long-term impact on resource allocation and the resource utilisation conundrum of SMEs. In reality, the smart configuration created will provide managers with greater consistency and credibility when making decisions concerning various sustainable corporate objectives.

In today's environment, characterised by technological advancements, SMEs are compelled to explore innovative solutions in order to survive (Guerrero-Villegas *et al*., 2018). Firms are actually

seeking sustainable innovation initiatives to boost their performance (MacGregor *et al*., 2017). Our suggested paradigm can serve as a solid framework for embracing principles of sustainable innovation. Here, tools and apps based on digital technology may drive SMEs to embrace new digital processes and their repercussions in terms of sustainable innovation performance. This would increase business sustainability and productivity by introducing more creative or innovative approaches and developments in small and medium-sized firms (Gobble, 2013), resulting in increased business advantages, investor interest, and growth. This research also contributes to a better understanding of how policy-makers may best offer firm-level smart sustainable growth in terms of advanced technology, innovation, excessive energy usage, resource depletion, waste to landfills, emissions, and wealth creation. It may be used as a major guideline for effective policy-creation to help SMEs improve their business success rates while reducing their environmental footprint.

INPUTS TO SDGS AND PARIS AGREEMENT

The direction of our study will help SMEs to make a substantial contribution to meeting the Sustainable Development Goals (SDGs) (de Sousa Jabbour *et al*., 2020), while government regulations or internal policies are the key impetus that drives sustainable accomplishments (Islam and Wahab, 2021) based on a digital context. Our configuration offers the introduction of 'Society 5.0' in such a way that it aims to reduce the environmental effects of industry (SDGs 14 and 15) and provides us with quality jobs (SDG 8). It should be noted that the necessary interplay between the proposed paradigm and SDGs will contribute to the creation of sustainable processes of industrialisation and innovation (SDG 9) and the production of affirmative incentives for improved quality of life, good education, and well-being for all (Prostean *et al*., 2020). In addition, the introduction of SDG 12 measures to attain safe combustion activities will also reduce businesses' operating expenses. SDG 17, on the other hand, promotes strategic alliances or partnerships with SMEs to achieve a sustainable growth strategy within the context of responsible business objectives.

According to a wide scientific discussion (Dalby, 2019), by the turn of the 21st century, the World will experience global warming of 3-6° Celsius relative to pre-industrial ages. This degree of climate change, as calculated based on natural science and economics, has the potential to cause significant economic disruption, major waves of refugees, ecological risks to millions of people, and eventually, violent clashes over dwindling commodities such as food and water (Dimitrov, 2016). A new global climate agreement dubbed the Paris Agreement (PA) on the topic of climate change (Dalby, 2019) was accepted by nations worldwide in December 2015. Our proposed direction would create a PA support network where creative players would utilise emerging technology to solve essential problems in terms of global warming. Furthermore, the purpose of these activities is aimed at generating socio-ecological benefit as an integral part of an economic plan, thus disarming the trade-off between benefit and intent. It will also help to introduce new financial and contractual frameworks that will encourage SME-level climate-resilient activities.

FINAL THOUGHTS

In the digital era, it is necessary for both digital strategy and sustainability strategy to be included in SME's corporate strategy to obtain business success. As previously argued, corporate strategy in this century will rely on rich information exchanges among various parties and extend business ideals to dynamic ecosystems that expand beyond traditional business and industry borders. As a result of this shift in corporate strategy, a new form of business growth paradigm is unavoidable. By assimilating the principle of digital performance inside TBL, this paper has effectively developed a reorientation of the conventional sustainable business growth paradigm for future academic study. Here, digital performance is not only a mechanism that can be used to address the problems of sustainability, it is also important as a catalyst for transformative change at different levels. Nevertheless, this evolved paradigm, known as the SQBL, is designed to help SMEs respond intelligently to today's modern challenges faced by competitive and unpredictable business environments. Here, the technological advancements and the destabilising impact of complex and unpredictable market conditions make continual progress a must for SMEs, rendering Society 5.0 (Islam *et al*., 2020a) the expected smart sustainable growth outline a source of progress itself. Indeed, the rapid acceptance of digitalisation, combined with the need to make business practices more sustainable, provides SMEs with significant opportunities to devise new value propositions.

The conceptualisation appreciates the move towards sustainability associated with the trends of the new transition driven by digitalisation, the aims of the SDGs, and the Paris Agreement. It is possible to optimise potential and mitigate the risks of digitalisation through adaptive governance in the path of a prosperous world for everyone. In addition, the authors of the paper conclude that successful SMEs will not only be mindful of ethical or moral principles such as trust, transparency, justice, confidentiality, and responsibility, but will also consciously follow them to do the right thing and make the above-reproached decisions. In view of the emergence of the digital age since COVID-19 (Islam *et al*., 2021), the key principles for SMEs that drive responsible conduct must be transparency and responsible behaviour. The business tactics of today, however, are arguably short-term and loosely oriented, lacking market insights that benefit from rational long-term thought (Islam and Wahab, 2021). The study does not disregard the hidden challenge involved in their suggested smart sustainable growth outline guided by the SQBL at this stage. They entail societal moral decline, economic change without taking social goals into consideration, cyber-crime, unrestricted access to personal data, and power misuse (Chowdhry *et al*., 2020; Khandii, 2019). In this regard, the study also highlights the tremendous need for effective regulatory strategies, incentives or benefits, and paradigm adjustments.

Therefore, future research recommendations also include the request to analyse the contribution of spiritual or ethical dynamics within the proposed outline to obtain better responsible outcomes. In fact, technological developments in history have often required us to rethink laws at some stage after their integration into society, but also ethical or moral value structures and limits in particular.

Again, the development of talent agility is probably the greatest secret to stopping a back-slide regarding the adoption of this model inside SMEs. Therefore, different aspects related to talent agility must be examined. More development within the conceptualisation may be done in future studies by integrating motivation, competency, and innovation variables from entrepreneurial viewpoints. Because this is a conceptual research work focusing on a number of review studies, no adequate empirical evidence to extend the idea is gathered. Furthermore, in regard to earlier research, the case framing is self-constructed.

REFERENCES

Aksin-Sivrikaya, S. and Bhattacharya, C.B. (2017): Where digitalization meets sustainability: opportunities and challenges. In: Osburg T., Lohrmann C. (Eds): *Sustainability in a Digital World. CSR, Sustainability, Ethics & Governance*. Springer, Cham.

Alayemi, S.A. and Akintoye, R.I. (2015): Strategic management of growth in manufacturing companies in sub-saharan africa: a case study of Nigeria. *British Journal of Economics, Management & Trade*, Vol. 6, No. 2, pp.151-160.

Alibašić, H. (2018): *Sustainability and resilience planning for local governments: The quadruple bottom line strategy*. Springer.

Amit, R. and Han, X. (2017): Value creation through novel resource configurations in a digitally enabled world. *Strategic Entrepreneurship Journal*, Vol. 11, No. 3, pp.228-242.

Anwar, M. (2018): Business model innovation and SMEs performance—Does competitive advantage mediate? *International Journal of Innovation Management*, Vol. 22, No. 7, p.1850057.

Bertella, G. (2019): Adding an ethical and spiritual dimension to sustainable business models. *Journal of Sustainability Research*, Vol. 1, No. 2, pp.1-18.

Bharadwaj, A., El Sawy, O.A., Pavlou, P.A. and Venkatraman, N. (2013): Digital business strategy: toward a next generation of insights. *MIS Quarterly*, Vol. 37, No. 2, pp.471-482.

Božič, K. and Dimovski, V. (2019): Business intelligence and analytics for value creation: The role of absorptive capacity. *International Journal of Information Management*, Vol. 46, (June), pp.93-103.

Brynjolfsson, E. and McAfee, A. (2014): *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. WW Norton & Company.

Bughin, J. (2017): The best response to digital disruption. *MIT Sloan Management Review*, Vol. 58, No. 4, pp.80-86.

Cantele, S. and Zardini, A. (2018): Is sustainability a competitive advantage for small businesses? An empirical analysis of possible mediators in the sustainability–financial performance relationship. *Journal of Cleaner Production*, Vol. 182, No. 1, pp.166-176.

Caputo, A., Pizzi, S., Pellegrini, M.M. and Dabić, M. (2021): Digitalization and business models: Where are we going? A science map of the field. *Journal of Business Research*, Vol. 123, (Feb), pp.489-501.

Caputo, F., Cillo, V., Candelo, E. and Liu, Y. (2019): Innovating through digital revolution: The role of soft skills and Big Data in increasing firm performance. *Management Decision*, Vol. 58, No. 8, pp.2032-2051.

Chaharbaghi, K. and Lynch, R. (1999): *Sustainable competitive advantage: towards a dynamic resource-based strategy. Management Decision*, Vol. 37, No. 1, pp.45-50.

Chege, S.M., Wang, D. and Suntu, S.L. (2020): Impact of information technology innovation on firm performance in Kenya. *Information Technology for Development*, Vol. 26, No. 2, pp.316-345.

Chowdhry, D.G., Verma, R. and Mathur, M. (Eds) (2020): *The Evolution of Business in the Cyber Age: Digital Transformation, Threats, and Security.* CRC Press.

Dalby, S. (2019): Canadian geopolitical culture: Climate change and sustainability. *The Canadian Geographer/ Le Géographe Canadien*, Vol. 63, No. 1, pp.100-111.

De Haes, S. and Van Grembergen, W. (2010): Analysing the impact of enterprise governance of IT practices on business performance. *International Journal of IT/Business Alignment and Governance (IJITBAG)*, Vol. 1, No. 1, pp.14-38.

de Sousa Jabbour, A.B.L., Ndubisi, N.O. and Seles, B.M.R.P. (2020): Sustainable development in Asian manufacturing SMEs: Progress and directions. *International Journal of Production Economics*, Vol. 225, (July), p.107567.

DeGeest, D.S., Follmer, E.H., Walter, S.L. and O'Boyle, E.H. (2017): Retracted: The benefits of benefits: A dynamic approach to motivation-enhancing human resource practices and entrepreneurial survival. *Journal of Management*, Vol. 43, No. 7, pp.2303-2332.

Deguchi, A. (2020): From Smart City to Society 5.0. In *Society 5.0* (pp.43-65). Springer, Singapore.

del Río Castro, G., Fernández, M.C.G. and Colsa, Á.U. (2020): Unleashing the convergence amid digitalization and sustainability towards pursuing the Sustainable Development Goals (SDGs): A holistic review. *Journal of Cleaner Production*, Vol. 280, No. 1, p.122204.

Depken, D. and Zeman, C. (2018): Small business challenges and the triple bottom line, TBL: Needs assessment in a Midwest State, USA. *Technological Forecasting and Social Change*, Vol. 135, (Oct), pp.44-50.

Di Vaio, A., Boccia, F., Landriani, L. and Palladino, R. (2020): Artificial intelligence in the agri-food system: Rethinking sustainable business models in the COVID-19 scenario. *Sustainability*, Vol. 12, No. 12, p.4851.

Dibia, V., Kang, L., Hassna, G., Wei, S. and Lowry, P.B. (2014, December). How does information technology capability enable digital transformation? Considering the mediating roles of agility. In *JAIS Theory Development Workshop, International Conference on Information Systems (ICIS 2014), Auckland, New Zealand, December* (pp.14-17).

Dijkstra, J. (2020): *Digital Leadership and Firm Performance: a Meta-Analysis* (Doctoral dissertation).

Dimitrov, R.S. (2016): The Paris agreement on climate change: Behind closed doors. *Global Environmental Politics*, Vol. 16, No. 3, pp.1-11.

Dobbs, M. and Hamilton, R.T. (2007): Small business growth: recent evidence and new directions. *International Journal of Entrepreneurial Behavior & Research*, Vol. 13, No. 5, pp.296-322.

Eckerson, W. (2004): Best practices in business performance management. *Business and Technical Strategies*, Vol. 101, pp.8-23.

Edwards, M. (2003): 2003 Best Practices Awards Winners: innovators in business intelligence and data warehousing. *Business Intelligence Journal*, Vol. 8, No. 4, pp.17-24.

Eikelenboom, M. and de Jong, G. (2019): The impact of dynamic capabilities on the sustainability performance of SMEs. *Journal of Cleaner Production*, Vol. 235, (October), pp.1360-1370.

El Hilali, W. and El Manouar, A. (2018, October): Smart companies: digital transformation as the new engine for reaching sustainability. In *The Proceedings of the Third International Conference on Smart City Applications* (pp.132-143). Springer, Cham.

Elbashir, M.Z., Collier, P.A. and Davern, M.J. (2008): Measuring the effects of business intelligence systems: The relationship between business process and organizational performance. *International Journal of Accounting Information Systems*, Vol. 9, No. 3, pp.135-153.

Elkington, J. (1994): Noted author and global authority on sustainable development and corporate responsibility, is credited with originating the concept for the term "triple bottom line" in his article "Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development". *California Management Review*, Vol. 36, No. 2, pp.90-100.

Elkington, J. (2018): 25 years ago I coined the phrase "triple bottom line." Here's why it's time to rethink it. *Harvard Business Review*, Vol. 25, (June), pp.2-5.

Fagerberg, J., Landström, H. and Martin, B.R. (2012): Exploring the emerging knowledge base of 'the knowledge society'. *Research Policy*, Vol. 41, No. 7, pp.1121-1131.

Ferreira, J.J., Fernandes, C.I. and Ferreira, F.A. (2019): To be or not to be digital, that is the question: Firm innovation and performance. *Journal of Business Research*, Vol. 101, pp.583-590.

Fitzgerald, M., Kruschwitz, N., Bonnet, D. and Welch, M. (2014): Embracing digital technology: A new strategic imperative. *MIT Sloan Management Review*, Vol. 55, No. 2, p.1-16.

Fukuda, K. (2020): Science, technology and innovation ecosystem transformation toward society 5.0. *International Journal of Production Economics*, Vol. 220, p.107460.

Gamache, S., Abdul-Nour, G. and Baril, C. (2019): Development of a Digital Performance Assessment Model for Quebec Manufacturing SMEs. *Procedia Manufacturing*, Vol. 38, Special Issue, pp.1085-1094.

Ganin, A.A., Quach, P., Panwar, M., Collier, Z.A., Keisler, J.M., Marchese, D. and Linkov, I. (2020): Multicriteria decision framework for cybersecurity risk assessment and management. *Risk Analysis*, Vol. 40, No. 1, pp.183-199.

Garzoni, A., De Turi, I., Secundo, G. and Del Vecchio, P. (2020): Fostering digital transformation of SMEs: a four levels approach. *Management Decision*, Vol. 58, No. 8, pp.1543-1562.

George, G., Merrill, R.K. and Schillebeeckx, S.J. (2021): Digital sustainability and entrepreneurship: How digital innovations are helping tackle climate change and sustainable development. *Entrepreneurship Theory and Practice*, Vol. 45, No. 5, pp.999-1027.

Gimenez, C., Sierra, V. and Rodon, J. (2012): Sustainable operations: Their impact on the triple bottom line. *International Journal of Production Economics*, Vol. 140, No. 1, pp.149-159.

Gobble, M.M. (2013): Big data: The next big thing in innovation. *Research-Technology Management*, Vol. 56, No. 1, 64-67.

Grecich, D.G. (2000): 1999 best practices in data warehousing awards winning summaries. *Journal of Data Warehousing*, Vol. 5, No. 1, pp.2-10.

Guerrero-Villegas, J., Sierra-García, L. and Palacios-Florencio, B. (2018): The role of sustainable development and innovation on firm performance. *Corporate Social Responsibility and Environmental Management*, Vol. 25, No. 6, pp.1350-1362.

Guo, H., Yang, Z., Huang, R. and Guo, A. (2020): The digitalization and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey. *Frontiers of Business Research in China*, Vol. 14, No. 1, pp.1-25.

Hakovirta, M. and Denuwara, N. (2020): How COVID-19 redefines the concept of sustainability. *Sustainability*, Vol. 12, No. 9, p.3727.

Hambrick, D.C. and Mason, P.A. (1984): Echelons: of the reflection its organization as top management. *Academy of Management Review Management*, Vol. 9, No. 2, pp.193-206.

Harmon, J., Fairfield, K.D. and Behson, S. (2009): A comparative analysis of organizational sustainability strategy: Antecedents and performance outcomes perceived by US and Non-US based managers. In *Proceedings of the International Eastern Academy of Management Conference*, Rio de Janeiro, Brazil (pp.21-25).

Hart, C. (2001): *Doing a literature search: a comprehensive guide for the social sciences*. Sage.

Heemsbergen, L. (2016): From radical transparency to radical disclosure: reconfiguring (in)voluntary transparency through the management of visibilities. *International Journal of Communication*, Vol. 10, Special Issue, pp.138-151.

Hussain, N., Rigoni, U. and Orij, R.P. (2018): Corporate governance and sustainability performance: Analysis of triple bottom line performance. *Journal of Business Ethics*, Vol. 149, No. 2, pp.411-432.

IDC (2019): Worldwide Spending on Digital Transformation. Framingham: IDC Corp USA. Retrieved from https://www.idc.com/getdoc.jsp?containerId=prUS45612419.

Isensee, C., Teuteberg, F., Griese, K.M. and Topi, C. (2020): The relationship between organizational culture, sustainability, and digitalization in SMEs: A systematic review. *Journal of Cleaner Production*, Vol. 275, p.122944.

Islam, A. and Wahab, S. (2020): Does Covid-19 help Sustainable Business Configuration through Big-Data Analytics (BDA)? *Journal of Arts & Social Sciences*, Vol. 4, No. 1, pp.18-30.

Islam, A. and Wahab, S.A. (2021): The intervention of strategic innovation practices in between regulations and sustainable business growth: a holistic perspective for Malaysian SMEs. *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 17, No. 3, pp.396-421. https://doi.org/10.1108/WJEMSD-04-2020-0035.

Islam, A., Islam, M., Hossain Uzir, M.U., Abd Wahab, S. and Abdul Latiff, A.S. (2020a): The panorama between COVID-19 pandemic and Artificial Intelligence (AI): Can it be the catalyst for Society 5.0? *International Journal of Scientific Research and Management*, Vol. 8, No. 12, pp.2011-2025.

Islam, A., Anum, K., Dwidienawati, D., Wahab, S. and Abdul Latiff, A. (2020b): Building a post COVID-19 Configuration between Internet of Things (IoT) and Sustainable Development Goals (SDGs) for Developing Countries. *Journal of Arts & Social Sciences*, Vol. 4, No. 1, pp.45-58.

Islam, A., Jerin, I., Hafiz, N., Tali Nimfa, D. and Abdul Wahab S. (2021): Configuring a blueprint for Malaysian SMEs to survive through the COVID-19 crisis: The reinforcement of Quadruple Helix Innovation Model. *Journal of Entrepreneurship, Business and Economics*, Vol. 9, No. 1, pp.32-81.

Islam, A., Zawawi, N.F.M. and Wahab, S.A. (2021a): Rethinking survival, renewal, and growth strategies of SMEs in Bangladesh: The role of spiritual leadership in crisis situation. *PSU Research Review*, in press. https://doi.org/10.1108/PRR-02-2021-0010.

Kalemli-Özcan, Ş., Gourinchas, P.O., Penciakova, V. and Sander, N. (2020): *COVID-19 and SME Failures*. IMF Working Paper No. 20/207, 55pp. Available at: https://www.imf.org/en/Publications/WP/Issues/2020/09/25/COVID-19-and-SME-Failures-49753.

Kane, G.C., Phillips, A.N., Copulsky, J. and Andrus, G. (2019): How digital leadership is(n't) different. *MIT Sloan Management Review*, Vol. 60, No. 3, pp.34-39.

Kardos, M. (2012): The Relationship between entrepreneurship, innovation and sustainable development. Research on European Union Countries. *Procedia Economics and Finance*, Vol. 3, Special Issue, p.1030-1035.

Kergroach, S. (2020): Giving momentum to SME digitalization. *Journal of the International Council for Small Business*, Vol. 1, No. 1, pp.28-31.

Khan, B.A. and Naeem, H. (2018): The impact of strategic quality orientation on innovation capabilities and sustainable business growth. *International Journal of Quality & Reliability Management*, Vol. 35, No. 8, pp.1568-1598.

Khandii, O. (2019): Social threats in the digitalization of economy and society. In *SHS Web of Conferences*, Vol. 67, p.06023. EDP Sciences.

Khin, S. and Ho, T.C. (2019): Digital technology, digital capability and organizational performance. *International Journal of Innovation Science*, Vol. 11, No. 2, pp.177-195.

Kiron, D. and Unruh, G. (2018): The convergence of digitalization and sustainability. *MIT Sloan Management Review*, 17 January 2018.

Knudsen, E.S., Lien, L.B., Timmermans, B., Belik, I. and Pandey, S. (2021): Stability in turbulent times? The effect of digitalization on the sustainability of competitive advantage. *Journal of Business Research*, Vol. 128, pp.360-369.

Li, T.C. and Chan, Y.E. (2019): Dynamic information technology capability: Concept definition and framework development. *The Journal of Strategic Information Systems*, Vol. 28, No. 4, p.101575.

Lin, Y. and Wu, L.Y. (2014): Exploring the role of dynamic capabilities in firm performance under the resource-based view framework. *Journal of Business Research*, Vol. 67, No. 3, pp.407-413.

Linkov, I., Trump, B.D., Poinsatte-Jones, K. and Florin, M.V. (2018): Governance strategies for a sustainable digital world. *Sustainability*, Vol. 10, No. 2, p.440.

MacGregor, S.P., Fontrodona, J. and Hernandez, J. (2017): Towards a sustainable innovation model for small enterprises. In Louche, C. and Idowu, S. (Eds): *Innovative CSR: From risk management to value creation*, (pp.305-330). Routledge.

Marchese, D., Reynolds, E., Bates, M.E., Morgan, H., Clark, S.S. and Linkov, I. (2018): Resilience and sustainability: Similarities and differences in environmental management applications. *Science of the Total Environment*, Vol. 613, pp.1275-1283.

Markus, M.L., Steinfield, C.W. and Wigand, R.T. (2006): Industry-wide information systems standardization as collective action: the case of the US residential mortgage industry. *MIS Quarterly*, Vol. 30, Special Issue, pp.439-465.

McLaughlin, S.A. (2017): Dynamic capabilities: taking an emerging technology perspective. *International Journal of Manufacturing Technology and Management*, Vol. 31, Nos 1-3, pp.62-81.

Melville, N., Kraemer, K. and Gurbaxani, V. (2004): Information technology and organizational performance: An integrative model of IT business value. *MIS Quarterly*, Vol. 28, No. 2, pp.283-322.

Metcalf, L. and Benn, S. (2013): Leadership for sustainability: An evolution of leadership ability. *Journal of Business Ethics*, Vol. 112, No. 3, pp.369-384.

Mezghani, K. and Aloulou, W. (Eds) (2019): *Business Transformations in the Era of Digitalization.* IGI Global.

Moore, S.B. and Manring, S.L. (2009): Strategy development in small and medium sized enterprises for sustainability and increased value creation. *Journal of Cleaner Production*, Vol. 17, No. 2, pp.276-282.

Muñoz-Pascual, L., Curado, C. and Galende, J. (2019): The triple bottom line on sustainable product innovation performance in SMEs: A mixed methods approach. *Sustainability*, Vol. 11, No. 6, pp.1689.

Norman, W. and MacDonald, C. (2004): Getting to the bottom of "triple bottom line". *Business Ethics Quarterly*, Vol. 14, No. 2, pp.243-262.

OECD (2019): *The OECD digital for SMEs global initiative: Harnessing the digital revolution for SMEs and entrepreneurs*. Paris, France. Available at: https://www.oecd.org/cfe/smes/digital-smes.htm.

Ojo, E., Mbohwa, C. and Akinlabi, E. (2015, September): Sustainability-competitive advantage. In *Proceedings of the 2015 International Conference on Operations Excellence and Service Engineering, Florida* (pp.592-600).

Okoli, C. (2015): A guide to conducting a standalone systematic literature review. *Communications of the Association for Information Systems*, Vol. 37, No. 1, pp.879-910.

Osburg, T. (2017): Sustainability in a digital world needs trust. In Osburg, T. and Lohrmann, C. (Eds): (pp.3-19). Springer International.

Osburg, T. and Lohrmann, C. (Eds) (2017): *Sustainability in a Digital World*. Springer International.

Pagani, M. (2013): Digital business strategy and value creation: Framing the dynamic cycle of control points. *MIS Quarterly*, Vol. 37, No. 2, pp.617-632.

Paladino, A. (2007): Investigating the drivers of innovation and new product success: a comparison of strategic orientations. *Product Innovation Management*, Vol. 24, No. 6, pp.534-553.

Porter, T. and Derry, R. (2012): Sustainability and business in a complex world. *Business and Society Review*, Vol. 117, No. 1, pp.33-53.

Prostean, G., Villahoz, J.J.L., Brancu, L. and Bakacsi, G. (2020): *Innovation in Sustainable Management and Entrepreneurship.* Springer International Publishing.

Provost, F. and Fawcett, T. (2013): Data science and its relationship to big data and data-driven decision making. *Big Data*, Vol. 1, No. 1, pp.51-59.

Pucihar, A., Lenart, G., Kljajić Borštnar, M., Vidmar, D. and Marolt, M. (2019): Drivers and outcomes of business model innovation—Micro, small and medium-sized enterprises perspective. *Sustainability*, Vol. 11, No. 2, p.344.

Ross, J.W., Beath, C.M. and Sebastian, I.M. (2017): How to develop a great digital strategy. *MIT Sloan Management Review*, Vol. 58, No. 2, pp.7-9.

Ross, S.A., Westerfield, R.W. and Jordan, B.D. (2010): *Fundamentals of Corporate Finance (9th ed.)*. McGraw-Hill/Irwin, New York.

Rotar, L.J., Pamić, R.K. and Bojnec, Š. (2019): Contributions of small and medium enterprises to employment in the European Union countries. *Economic Research-Ekonomska Istraživanja*, Vol. 32, No. 1, pp.3296-3308.

Saarikko, T., Westergren, U.H. and Blomquist, T. (2020): Digital transformation: Five recommendations for the digitally conscious firm. *Business Horizons*, Vol. 63, No. 6, pp.825-839.

Salder, J., Gilman, M., Raby, S. and Gkikas, A. (2020): Beyond linearity and resource-based perspectives of SME growth. *Journal of Small Business Strategy*, Vol. 30, No. 1, pp.1-17.

Salojärvi, S., Furu, P. and Sveiby, K.E. (2005): Knowledge management and growth in Finnish SMEs. *Journal of Knowledge Management*, Vol. 9, No. 2, pp.103-122.

Satalkina, L. and Steiner, G. (2020): Digital entrepreneurship and its role in innovation systems: A systematic literature review as a basis for future research avenues for sustainable transitions. *Sustainability*, Vol. 12, No. 7, p.2764.

SBA (2014): *Frequently Asked Questions about Small Business*. SBA Office of Advocacy. March 2014. Available at: https://www.sba.gov/sites/default/files/advocacy/FAQ_March_2014_0.pdf.

Schaltegger, S. and Wagner, M. (Eds) (2017): *Managing the business case for sustainability: The integration of social, environmental and economic performance.* Routledge.

Schoemaker, P.J., Heaton, S. and Teece, D. (2018): Innovation, dynamic capabilities, and leadership. *California Management Review*, Vol. 61, No. 1, pp.15-42.

Seele, P. and Lock, I. (2017): The game-changing potential of digitalization for sustainability: possibilities, perils, and pathways. *Sustainability Science*, Vol. 12, No. 2, pp.183-185.

Seuring, S. and Müller, M. (2008): From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, Vol. 16, No. 15, pp.1699-1710.

Shdifat, B., Kozanoglu, D.C. and Erfani, S. (2021): Achieving the Triple Bottom Line Through Big Data Analytics. In Park, S.H., Gonzalez-Perez, M.A. and Floriani, D.E. (Eds): *The Palgrave Handbook of Corporate Sustainability in the Digital Era* (pp.631-649). Palgrave Macmillan, Cham.

Sheninger, E. (2019): *Digital leadership: Changing paradigms for changing times*. Corwin Press.

Slaper, T.F. and Hall, T.J. (2011): The triple bottom line: What is it and how does it work? *Indiana Business Review*, Vol. 86, No. 1, pp.4-8.

Sridhar, K. and Jones, G. (2013): The three fundamental criticisms of the Triple Bottom Line approach: An empirical study to link sustainability reports in companies based in the Asia-Pacific region and TBL shortcomings. *Asian Journal of Business Ethics*, Vol. 2, No. 1, pp.91-111.

Stefanikova, Ľ., Rypakova, M. and Moravcikova, K. (2015): The impact of competitive intelligence on sustainable growth of the enterprises. *Procedia Economics and Finance*, Vol. 26, pp.209-214.

Tarnanidis, T., Papathanasiou, J. and Subeniotis, D. (2016): Critical success factors in the TBL concept of sustainable entrepreneurship. *International Journal of Decision Support Systems*, Vol. 2, Nos 1-3, pp.38-53.

Tate, W.L. and Bals, L. (2018): Achieving shared triple bottom line (TBL) value creation: toward a social resource-based view (SRBV) of the firm. *Journal of Business Ethics*, Vol. 152, No. 3, pp.803-826.

Teece, D.J. (2007): Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, Vol. 28, No. 13, pp.1319-1350.

Trucco, P. and Petrenj, B. (2017): Resilience of Critical Infrastructures: benefits and challenges from emerging practices and programmes at local level. In Linkov, I. and Palma-Oliveir, J.M. (Eds): *Resilience and Risk* (pp.225-286). Springer, Dordrecht.

Trump, B.D. (2017): Synthetic biology regulation and governance: Lessons from TAPIC for the United States, European Union, and Singapore. *Health Policy*, Vol. 121, No. 11, pp.1139-1146.

Valentine, E. and Stewart, G. (2015): Enterprise business technology governance: Three competencies to build board digital leadership capability. In *2015 48th Hawaii International Conference on System Sciences* (pp.4513-4522). IEEE.

Vivier, E. and Ducrey, V. (2019): *Le Guide De La Transformation Digitale.* Eyrolles.

Wilden, R. and Gudergan, S.P. (2015): The impact of dynamic capabilities on operational marketing and technological capabilities: investigating the role of environmental turbulence. *Journal of the Academy of Marketing Science*, Vol. 43, No. 2, pp.181-199.

Witschel, D., Döhla, A., Kaiser, M., Voigt, K.I. and Pfletschinger, T. (2019): Riding on the wave of digitization: Insights how and under what settings dynamic capabilities facilitate digital-driven business model change. *Journal of Business Economics*, Vol. 89, No. 8, pp.1023-1095.

World Bank (2018): *Improving SMEs' access to finance and finding innovative solutions to unlock sources of capital*. Geneva: WB. Available at: https://www.worldbank.org/en/topic/smefinance.

World Trade Organization (2016): *World Trade Report 2016: Levelling the trading field for SMEs* (177pp.). Geneva: WTO. Available at: https://www.wto.org/english/res_e/publications_e/wtr16_e.htm.

Yusoff, T., Wahab, S.A., Latiff, A.S., Osman, S.I., Zawawi, N.F. and Fazal, S.A. (2018): Sustainable Growth in SMEs: A Review from the Malaysian Perspective. *Journal of Management and Sustainability*, Vol. 8, No. 3, pp.43-54.

Zaied, R.M.B., Affes, H. and Hikkerova, L. (2015): Sources externes de connaissances, Innovation organisationnelle et Performance organisationnelle. *Gestion 2000*, Vol. 32, No. 5, pp.81-98.

Zawawi, N.F.M. and Abd Wahab, S. (2019): Organizational sustainability: a redefinition? *Journal of Strategy and Management.* Vol. 12, No. 3, pp.397-408.

Zhanna, B. and Yana, L. (2020): The Impact of Digitalization and Sustainable Development Goals in SMEs' Strategy: A Multi-Country European Study. In Thrassou, A., Vrontis, D., Weber, Y., Riad Shams, S.M. and Tsoukatos, E. (Eds): *The Changing Role of SMEs in Global Business* (pp.15-38). Palgrave Macmillan, Cham.

BIOGRAPHY

Ariful Islam is an ongoing PhD candidate at the Department of Business Management, Putra Business School (PBS), a leading business school accredited by AACSB. He spent the early part of his career in IT/Telecoms before transitioning to academia. His recent research focuses on topics such as Sustainable Development, Entrepreneurship, Arts and Humanities, Qualitative Social Research, and Quantitative Social Research. His scholarly works have been published in different reputed international journals. His current project endeavour is his PhD thesis based on sustainable/strategic entrepreneurship practices among Malaysian entrepreneurs. Arif has also presented several insightful research papers and attended scholastic events in a number of regions.

Prof. Dr. Sazali Abd Wahab is a Professor of Management and Organizational Sustainability at Putra Business School (PBS). Prior to joining PBS, he was a Professor of Management at Universiti Malaysia Kelantan (UMK), the founding dean of the Centre for Postgraduate Studies (CPS-UMK), and the founding dean of the Malaysian Graduate School of Entrepreneurship and Business (MGSEB-UMK). He has been appointed as a committee member for various strategic and technical committees at national and university level.

Dr. Ahmad Shaharudin Abdul Latiff has many years of experience in the corporate and banking sector since 1988, involving internal and operational auditing as well as internal control reviews. He handled internal audit and corporate services responsibilities of several public-listed companies in Malaysia, and has been involved in entrepreneurial activities in the ICT industry since 1999. He has been awarded numerous projects by the government and private sector. Before joining PBS, he was a fellow of the Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan and taught entrepreneurship and IT-related subjects. He was also appointed as the Deputy Director of the university's entrepreneurship centre, UMK Entrepreneurship Institute, and organised and provided entrepreneurship training and activities for the university's students. He obtained his PhD in Information Technology and Quantitative Sciences at the Universiti Teknologi Mara, Shah Alam, Malaysia with his research on ontology development for Islamic banking using adapted software engineering approach.