Environment Sustainability Is a Corporate Social Responsibility

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Corporate social responsibility (both internal and external CSR) positively promotes SSCM practices and contributes to expanding dynamic capacity theory in the context of BDA capabilities. Big data analytical capabilities (BDAC) are also a key mediator between SSCM practices and organizational performance. These results contribute to and improve the research on stakeholder theory and SSCM practice and provide a new perspective for scholars to further study this issue.

CSR sustainable development sustainable supply chain

1. Corporate Social Responsibility

Corporate social responsibility (CSR) encompasses both internal and external CSR. Internal CSR refers to organizational practices that improve working conditions. On the other side, external CSR refers to "efforts that promote environmental preservation, community development, and sustainability" [1]. Organizations that engage in CSR (both internal and external CSR) are more likely to understand the demands of internal and external stakeholders, create value for the environment and society, and reduce the relapse of environmental challenges [2][3]. This, however, will facilitate environmentally friendly operations and the application of SSCM practices. Internal CSR refers to efforts to improve management practices toward employees, with employees as the primary beneficiaries of internal CSR initiatives [4]. By incorporating sustainable development activities into SCM, SSCM practices can assist organizations in reducing resource waste and increasing ecological efficiency throughout the SC [5][6]. Internal CSR and SSCM are inextricably intertwined. Internal CSR encourages employees to positively approach their employers, leading to employees optimizing business procedures [2]. As a result, organizations with internal CSR may positively transform existing SCM practices and foster the emergence of SSCM practices, among other things.

CSR efforts directed towards the management practices of external stakeholders are referred to as external CSR [4]. The companies that engage in external CSR activities and generate value for the environment and society can also consider them for strategic decision-making [7][8]. A study of [9] demonstrated that institutional and strategic perspectives of CSR can provide options for obtaining firm performance, which may add deeper insights in the context of emerging economies. A study of [10] empirically examined the impact of SSC practices on financial performance using Indian companies as an example and identified the potential for implementing environmental, social, and governance (ESG) practices to achieve organizational financial benefits and competitive advantage. Moreover, a comparative study [11] revealed that, in the advanced economies considered, CSR strategies are

significant predictors of corporate ESG performance. Because it is intended to benefit external stakeholders, external CSR drives organizations to adopt SSCM practices as part of their overall strategy [4]. Organizations may benefit from external CSR, since it might help them rethink their previous attitudes and establish SSCM practices. Meanwhile, organizations with external CSR can face intense pressure from external stakeholders, which may enforce proper methods to meet the requirements of external stakeholders [2], laying the groundwork for implementing SSCM practices. Even though numerous investigations have analyzed the influence of CSR activities on environmental sustainability [3][4][12][13][14][15], an empirical investigation is required to explore the effect of CSR (internal and external CSR) activities on SSCM practices.

2. SSCM Practices

Due to the dynamic and turbulent nature of the business environment, organizations must increase their profitability and sustainability in order to maintain a competitive edge [16]. In this case, sustainable supply chain management (SSCM) is an essential component of the organizations that assist in getting high performance and the achievement of SDGs. The study of [17] defined SSCM as integrating SCM and sustainable development. A study of [18] concludes the definition of SSCM as a management process that integrates environmental factors, social performance, and economic contributions to different customer needs, and complex product components leading to intense internal and global competition among companies. Organizations that approach SSCM place a significant emphasis on decision making as a means of orienting themselves to success in the management of their SC [19]. The body of knowledge on SSCM continues to increase [20][21][22] and now encompasses critical areas such as greening suppliers, risk management, stakeholder alignment, information sharing, prioritizing, and cooperation [23]. The link between innovative technology (e.g., BDA) and organizational performance, on the other hand, is significantly less focused.

Since SCM has made considerable use of various technologies, including sensors, barcodes, and the Internet of Things to integrate and coordinate each link in the chain. Therefore, it is unsurprising that BDA has transformed SCs, and its application in SCM has been documented in several special issues [24][25]. It works as a bridge between SCM practices and organizational performance. Big data application in SCM has been discussed as SC data science and SC analytics, which are fundamentally identical with advanced qualitative and quantitative analytics for SCM objectives by exploiting the massive amount of fast-moving and diversified data [26]. As a result, it is possible to predict that SSCM practices may facilitate the establishment and execution of exclusive BDACs, enhancing organizational performance.

Numerous studies asserted that SCM is also meant to boost operational and environmental performance [16][19][27]. Additionally, SSCM practices can assist the organization in reducing environmental impacts and increasing sustainable activities by requiring them to address sustainable performance [28]. A study of [29] examined an SSCM in which carbon emissions are regulated using a cap-and-trade system. Apart from these, an early study in SSCM focused primarily on environmental management/green SCM practices espoused by an organization and their impact on performance. In contrast, subsequent research incorporates a social dimension into green SCM practices and examines the influence of various SSCM dimensions on organizational performance [30]. The

absence of scholarly attention to the influence of SSCM practices on achieving sustainable organizational performance is the primary motivation for this study, especially when BDAC is integrated.

Following sustainability principles and the idea of SCM, the SSCM practices examined in this study are classified into three broad categories: environmental management practices, operations practices, and SCI. These categories are meant to encompass the essence of SSCM practices [31]. The rationale for considering environmental management practices (EMPs) is an important part of influencing organizational performance and implementing GSCM practices [30][29]. As a result, environmental factors significantly affect an organization's overall performance and competitiveness. Operations practices (OPR) entail implementing operations management approaches to increase efficiency, enhance quality, lower inventory, and avoid waste throughout the value chain [30]. Supply chain integration (SCI) integrates upstream and downstream customers and numerous internal operations [32]. SCI has been suggested to integrate information in both directions between suppliers, manufacturers, distributors, and customers [33][34][35][36][37][38].

3. BDA Capabilities

Due to the huge transformative capabilities in business, management, and research, big data has been deemed a transformation in the manufacturing environment [39][40][41][42]. BDA is defined as the process of extracting meaningful knowledge from massive amounts of data through the application of advanced analytics tools, hence facilitating data-driven decision-making [24]. Meanwhile, the BDAC concept refers to "the ability of an organization to integrate, build, and reconfigure the information resources, as well as business processes, to address rapidly changing environments" [43]. Furthermore, BDAC is a multifaceted, complementary capability that helps firms to improve their current organizational models and value-added processes jointly by successfully coordinating and utilizing their data, technologies, and expertise [44][45]. The dynamic capability theory explains how an organization can achieve sustained performance in a rapidly changing industry by embracing continual change. Dynamic capabilities refer to "the capacity of an organization to create, extend, or modify its resource base purposefully" [46]. As such, BDAC is a dynamic capability that assembles, incorporates, and delivers resources optimized for big data [47]. Understanding BDAC and its efficient and effective utilization may improve an organization's decision-making and sustainable performance.

The study of [48] stated that while the existing literature has numerous discussions on SCM's predictive analytics and data science, it fails to demonstrate a direct link between SSCM practices and BDAC. Similarly, a few studies have indicated that BDAC has a beneficial effect on SSCM; however, these studies are rare in number and do not use the same set of measures [48]. As a result, generalizations about the relationship between BDAC and SSCM practices must be established. Indeed, several experts suggest that the effect of information technology on organizational performance may be mediated by a variety of intermediary variables [49][50]. BDAC is presently regarded as a game-changer to enable an organization's sustainable performance due to its great operational and strategic potential. The emerging literature establishes a positive correlation between BDAC and organizational performance in various industries [51][52][48][53][54].

4. Sustainable Organizational Performance

Sustainable development is a contentious subject with widely varied viewpoints and attitudes [55]. The term is defined primarily as the intersection of the economy, the environment, and society. The concept of sustainable development has garnered considerable attention in recent decades, notably by the Brundtland report [56]. The role of business in sustainable development is often regarded as a “responsibility” to society, and that responsibility is defined as the need to eliminate the negative impact of business [57]. Organizational sustainability can be a source of competitiveness if opportunities related to sustainability can be identified appropriately. Although SSCM and logistics management are the most extensively researched topics within the sustainable development literature [58], there is a compelling academic need to determine whether organizational performance improves due to implementing SSCM practices.

This study considers two categories of organizational performance: environmental performance and operational performance. Operational performance is the ability of a manufacturing plant to supply and produce products more efficiently for its end consumers [59]. Operational performance is critical for businesses because it enables them to boost the efficacy of production processes and produce high-quality products, resulting in greater revenue and profit [60][61]. It refers to how an organization’s performance has improved in terms of cost reduction and increased efficiency across the whole SC. It refers to the core and most usually discussed competitive areas of flexibility, quality, pricing, and delivery, resulting in increased performance levels if attained by a corporation.

Meanwhile, environmental performance refers to manufacturers’ efforts to reduce solid waste, air emissions, effluent waste, and hazardous material use [62]. Fundamental sustainable activities, such as sustainable distribution, considerably improve manufacturing enterprises’ environmental performance [63][64]. Strong partnerships and associations with suppliers, particularly manufacturing, contribute to developing and implementing modern operational and environmental technologies [59]. Thus, operation performance is critical in enhancing an organization’s environmental performance. Implementing SSCM practices improves operational and environmental performance and increases supplier or customer retention.

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