AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

Sustainable Intellectual Capital: Bridging the Gap between Sustainability and Intellectual Assets

Deepak Kumar Nama
Ph.D. Research Scholar
Department of Commerce
Devi Ahilya Vishwavidayalaya
Indore (M.P.) 452001
Deepaknama182@Gmail.Com
+91-7737226023

Dr. Ranjana Kanungo
Assistant Professor
Sica College
Devi Ahilya Vishwavidayalaya
Indore (M.P.) 452001
Ranjanakanongo18@Gmail.Com
+91-9826210393

AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

Abstract

In the context of the modern economy, intellectual capital has emerged as a crucial factor influencing the sustainable growth and development of enterprises. It serves as a fundamental prerequisite for attaining a sustainable competitive advantage in today's business landscape. Intellectual capital encompasses the knowledge necessary for addressing environmental challenges, making it a vital component of enterprise sustainability. Moreover, these intangible assets of organizations encompass green innovations, which play a significant role in ensuring the sustainability of business operations. By leveraging sustainable intellectual capital and embracing green innovations, enterprises can enhance their competitiveness, drive sustainable practices, and contribute to the overall sustainability of the economy. This research paper explores the linkage between sustainability and intellectual capital, highlighting the synergies and interdependencies between these two essential elements for organizational success. The research explores the potential of integrating sustainable practices with intellectual assets to foster long-term value creation, improve competitiveness, and generate positive environmental and social outcomes. The study investigates the interplay between sustainability and intellectual capital, providing insights into how intellectual assets can support sustainable development and assist organizations in navigating the dynamic challenges of the evolving business environment. By recognizing and harnessing the power of intellectual capital, organizations can effectively address sustainability concerns, drive innovation, and proactively adapt to emerging trends, ultimately positioning themselves for sustainable growth and success.

Keywords: Intellectual Capital (IC), Sustainable Intellectual Capital (SIC), Sustainable Human; Structural; Relational Capital, Sustainable Development (SD)

Introduction

In the digital era, the shift from physical labour to intellectual work has become increasingly prominent, emphasizing the significance of intellectual capital. Unlike physical assets, intellectual capital does not appear on a company's balance sheet, yet it holds greater value for organizations. Economic prosperity is now driven more by knowledge and information rather than the traditional production process (Akpinar, A. T., & Akdemir, A. 1999). Intellectual capital has emerged as the primary resource for generating economic wealth. While tangible

AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International
ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

assets like property, plant, and equipment remain crucial for goods and services production, their relative importance has diminished over time as intangible and knowledge-based assets have gained prominence (Luthy, D. H. 1998). Intellectual capital encompasses far more than intellectual property rights such as patents and copyrights. It represents the collective and synergistic sum of a company's knowledge, expertise, relationships, processes, discoveries, innovations, market presence, and community influence (Miller, W. 1999; Akpinar, A. T., & Akdemir, A. 1999).

Furthermore, The mobilization of knowledge across social, economic, and environmental domains has emerged as a crucial tool for contributing to the creation of a more sustainable future (Mohamed, M. et al., 2010). This knowledge mobilization aims to guide human development towards systems of production that uphold the natural and social equilibrium of the global ecosystem (Malone, T. F., & Yohe, G. W. 2002). Amidst the growing importance of intellectual capital (IC) and the increasing focus on sustainable practices, a new concept has emerged: sustainable intellectual capital (SIC) (Chen, Y. S. 2008). SIC encompasses all the knowledge that an enterprise utilizes in the process of environmental management (Lopez-Gamero et al., 2011). It necessitates the inclusion of all elements of intellectual resources in addressing environmental challenges. This includes incorporating environmental management practices and fostering the development of innovations that facilitate environmental protection. These innovations are commonly referred to as green innovations or eco-innovations (Jovanović, M., Petrović, B., & Janjić, I. 2021). Few studies have addressed the concept of sustainable intellectual capital (López-Gamero, M. D. et al., 2011; Vale, J. et al., 2022; Cavicchi, C., & Vagnoni, E. 2017), and there is limited research connecting it to green intellectual capital (Marco-Lajara, B. et al., 2022; Omar, M. K. et al., 2019; Yusoff, Y. M. et al., 2019; Suki, N. M. et al., 2022). Therefore, this study aims to define the concept of sustainable intellectual capital, explore its components related to sustainability, and examine the implications of these components on sustainable development and their compatibility with each other.

AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

Literarture review

Intellectual capital (IC) is widely recognized as a vital resource for organizations. However, it is often undervalued due to the organizational challenges in effectively leveraging it or overlooked to protect it legally (Rossi et al., 2016; Lu, Y. et al., 2021). Interestingly, the literature on the intersection of IC and sustainability is expanding, as highlighted by Massaro, M. et al. in 2018 (Dal Mas, F. 2019). Previous studies have explored the relationship between intellectual capital and sustainability, and the following table summarizes some of these studies:

Authors	Findings
Pedrini, M. 2007	The interaction between intellectual capital (IC) and sustainability has the potential to enhance brand image, bolster customer reputation, and foster market trust. Moreover, the effective utilization of intellectual capital can drive operational efficiency, facilitate the evolution of business models, and inspire and support individuals within the organization.
Oliveira, L. et al., 2010	It appears that sustainability reports are a beneficial and ideal platform for IC disclosures. It seems likely to be advantageous to develop regulatory criteria for a single report incorporating IC and social and environmental accountability practises. This would seem to be particularly true when used as a strategic tool by businesses looking to manage stakeholder relationships, legitimise themselves, improve their corporate reputation, and make the most use of their resources.
Wasiluk, K. L. 2013	Businesses need to move away from defending the Business case for sustainability and learn how to mobilise their IC to go beyond the efficiency phase of corporate sustainability and towards a more ecologically sustainable and socially just organisation.

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

Lu, Y. et al., 2021	In this study, cost leadership strategy (CLS) and differentiation strategy (DS), two competing strategies, were used to examine the effects of each intellectual capital dimension on sustainable growth. Following the findings of other studies, including those by Kadir, A. R. A. et al. (2018), McDowell, W. C. et al. (2018), and Mukherjee, T., & Sen, S. S. (2019), which showed a significant positive association between the dimensions of IC and performance, they discovered that all of the IC dimensions are very important for high sustainable growth.
Dereń, A. M., & Skonieczny, J. 2022	They conceptualised green intellectual property as a tactical resource for businesses engaged in the sustainable development process.
Xu, J., & Wang, B. 2018	This study uses listed Korean manufacturing companies as its sample to empirically investigate the relationships between IC and financial performance and the relationships between IC and sustainable growth. It finds that Korean manufacturing companies with better IC efficiency experience higher profitability and more sustainable growth. In addition, it may be said with reference to the IC component that whereas HC, SC, and RC have good effects on businesses' sustainable growth, the influence of inventive capital is little.
Hussinki, H. et al., 2019	This study looked at how intellectual capital influences an organization's potential to be both economically and socially sustainable. The author made the case that an organization's social sustainability is influenced by its impact on employee job satisfaction. They also asserted that a combination of customer value generation and employee wellbeing will eventually result in economic sustainability.

AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International
ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

These studies provide insights into the complexities surrounding the management and utilization of intellectual capital within the context of sustainability. However, there is still much to explore in understanding how organizations can effectively leverage intellectual capital to drive sustainable practices and achieve long-term success.

Materials and Methods

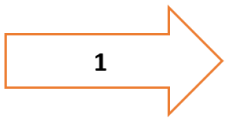
The study conducted for this chapter utilized a qualitative research technique and focused on exploring the concepts of intellectual capital, sustainable intellectual capital, sustainable development, and sustainable growth. The research process involved examining relevant articles and publications from renowned sources through a manual search on Google Scholar (GS). Publications such as the Journal of Knowledge Management, Journal of Academic Research in Business and Social Sciences, Journal of Cleaner Production, and Journal of Intellectual Capital were selected due to their reputation for publishing theoretical and empirical studies on topics related to intellectual capital and sustainable development.

The research methodology encompassed analysis, synthesis, and abstraction techniques, along with a logical-deductive approach. By gathering relevant knowledge and insights from the identified articles, the study aimed to answer key research questions, including:

1. How can we define the concept of sustainable intellectual capital?
2. To what extent are sustainable intellectual capital and its components inherent to sustainability?
3. Considering the implications of its components, how does intellectual capital contribute to sustainable development?
4. How compatible are sustainable intellectual capital and sustainable development with each other?

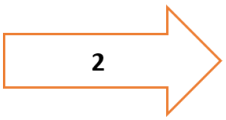
By addressing these questions, the study aimed to deepen the understanding of the relationship between intellectual capital and sustainability, and to highlight the role of sustainable intellectual capital in driving sustainable development.

AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International
ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce



Qualitative Analysis

The steps includes in it:
Study of papers that are profoundly relate to the keyterms: intellectual capital; sustainable intellectual capital; sustainability; sustainable growth.



Manual search for papers

Source: Google Scholar
Source are being related to the journals that are being directed with IC; Sustainability.
Time frame: 1972-2022

Theortical underpinning

Sustainable Intellectual Capital

Sustainable development and the intricate relationship between the economy and the environment have gained paramount importance among policymakers worldwide. These concepts prompt crucial discussions regarding whether continued economic growth will inevitably lead to severe environmental degradation and societal collapse on a global scale (Meadows, D. H. et al., 1972). The influential Brundtland Report vigorously advocates for the idea of sustainable development, defining it as development that meets the present generation's needs without compromising the ability of future generations to meet their own needs (WCED, S. W. S. 1987). This paradigm shift reflects a growing recognition of the imperative to strike a harmonious balance between economic advancement, environmental preservation, and social well-being. It acknowledges that development must not come at the expense of future generations' ability to thrive in a healthy environment. Instead, sustainable development emphasizes the integration of economic, environmental, and social considerations to ensure a more equitable and resilient future.

Within the realm of sustainable development, economists have traditionally employed the capital theory approach to assess sustainability (Harte, 1995). This approach encompasses various forms of capital, including man-made capital (such as manufactured goods), human capital (encompassing knowledge and skills), social capital (relating to relationships between individuals and institutions), and natural capital (comprising natural resources) (Figge and

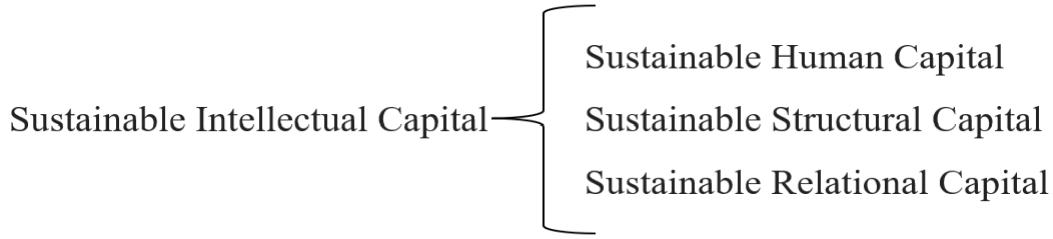
AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International
ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

Hahn, 2004). This viewpoint aligns closely with the perspective put forth by Edvinsson and Malone (1997), who define intellectual capital as consisting primarily of two key components: human capital (representing the knowledge, skills, and expertise of employees) and structural capital (referring to the supportive infrastructure that enhances human capital). Some scholars further divide structural capital into organizational capital (pertaining to systems and tools) and customer capital (encompassing a firm's relationships with its customers). Bontis (1996) extends this framework by introducing relational capital, an expanded version of customer capital that encompasses the value derived from all relationships, including those with customers.

The notion of sustainable intellectual capital (SIC) presents a promising avenue for integrating environmental considerations into a firm's overall management system (López-Gamero, M. D. et al., 2011). SIC acknowledges the importance of incorporating environmental aspects into the assessment and enhancement of intellectual capital, thereby facilitating the integration of sustainability principles into the core operations of a company. By recognizing the interplay between intellectual capital and sustainability, organizations can better leverage their intellectual resources to foster environmentally responsible practices and long-term sustainable performance.

According to Chen, Y. S. (2008), sustainable intellectual capital (SIC) can be defined as the intangible resources, capabilities, skills, and knowledge that are associated with environmental protection and innovation at both the organizational and individual levels. In a broader sense, SIC encompasses all the knowledge and reserves that an organization possesses to drive the environmental management process and gain a competitive advantage (Yusliza, M. Y. et al., 2020). Sustainable intellectual capital (SIC) can be further categorized into three distinct subcategories: human SIC, structural SIC, and relational SIC (Claver-Cortés, E. et al., 2007; Johnson, W. H., 1999; Chen, Y. S., 2008; Bontis, N., 2000). These subcategories capture different dimensions of SIC.

AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International
ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce



Source: Author

Human SIC, as described by Claver-Cortés, E. et al. (2007), pertains to the contribution made by employees towards the sustainable value of the organization through their competencies, attitudes, and mental agility. It encompasses both operational aspects, which are predominantly based on knowledge and skills, and emotional aspects, which encompass factors such as motivation, leadership, and loyalty. The measurement of human SIC can be approached through various dimensions. Firstly, it can be assessed by considering formal or specialized environmental training received by individuals, indicating their level of knowledge and expertise in sustainability practices. Secondly, personal development and experience play a significant role in determining the human SIC, as individuals' talents and skills evolve over time through learning and growth. Lastly, collaboration and knowledge exchange levels among employees contribute to human SIC, as they foster collective learning, innovation, and the dissemination of sustainable practices within the organization (Banerjee, P. M., 2013).

Structural SIC encompasses two main dimensions: organizational SIC and technological SIC. Organizational SIC refers to the intangible elements that shape and support the environmental management of a firm. This includes aspects such as organizational culture, structure, organizational learning, and processes. Effectively managing these intangibles enables the firm to develop and implement environmental initiatives in an efficient and effective manner. Recognizing the importance of sustainability, a firm may need to adapt its culture and formal organization by defining new environmental roles and responsibilities.

Relational SIC pertains to the organization's connections with stakeholders and the market it operates in. It encompasses the value attributed by the firm to its relationships with key actors involved in its environmental management. These actors include government bodies, the media, corporate image, environmental protection, corporate environmental reputation, and

AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International
ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

social relationships (López-Gamero, M. D. et al., 2011). The importance of relational SIC lies in the recognition that sustainable development is a collaborative effort that involves engagement and cooperation with various stakeholders. Building strong relationships with government entities allows for effective policy advocacy and regulatory compliance. Engaging with the media helps in shaping a positive corporate image and disseminating environmentally responsible practices. Protecting the environment and developing a robust environmental reputation contribute to gaining the trust and support of customers and the broader society.

Leveraging Intellectual Capital for Sustainable performance

In the contemporary business landscape, intangible resources are increasingly recognized as more influential assets for organizations in achieving superior performance compared to tangible resources. They offer the potential to enhance competitive advantage and drive organizational success (Agostini, L. et al., 2017; Yusoff, Y. M. et al., 2019). The concept of intellectual capital (IC) was initially introduced by John Kenneth Galbraith in 1969. However, it wasn't until the 1980s that IC gained significant attention in the realms of strategic management and accounting, leading to extensive discussions among scholars and practitioners (Gross-Gołacka, E. et al., 2020).

A comprehensive understanding of IC comes from Sardo, F. et al. (2018), who defined it as encompassing knowledge-based activities and processes that contribute to innovation, value creation, competitive advantages, and overall benefits for firms, ultimately generating value for stakeholders. Another noteworthy definition, as proposed by Kujansivu, P. (2008), describes IC as the intangible sources of value derived from employees' capabilities, the organization's resources and processes, and the relationships with its stakeholders.

These definitions highlight the significance of intangible assets such as knowledge, skills, organizational resources, and stakeholder relationships in driving organizational value and performance. By effectively managing and leveraging IC, organizations can foster innovation, create unique competitive advantages, and generate sustainable value for all stakeholders involved.

Once evaluated and taken into account, the performance of global sustainability can be presented as a strategic instrument for corporate management and communication (Lee, D. D.,

AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International
ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

& Faff, R. W. 2009). Sustainable development, based on this notion, aims to achieve a harmonious equilibrium among three key dimensions: economic, environmental, and social (Hansmann, R. et al., 2012). It is crucial to distinguish and evaluate each dimension separately to gain a comprehensive understanding of overall sustainability performance. he term "sustainability performance" has been identified as a relatively new and often overlooked concept, as highlighted by Artiach, T. et al. (2010). They define sustainability performance as the cumulative positive or negative outcomes in terms of economic, environmental, and social impacts of an entity when compared to a predefined baseline. Each dimension of sustainability performance has its own unique characteristics:

Economic performance relates to the organization's economic impact on society. It encompasses factors such as financial profitability, value creation, economic growth, and contributions to the overall economy.

Environmental performance focuses on the organization's influence on natural systems, ecosystems, and the environment. This dimension considers aspects such as resource consumption (e.g., raw materials, water, energy), waste generation, emissions, and the overall environmental footprint.

Social performance reflects the organization's effects on social systems and communities. It encompasses considerations such as labor practices, worker well-being, human rights, social engagement, and community development. It also includes the impact of products and services on society, including health, safety, and societal benefits. (Achim, M. V. et al., 2014).

Within the context of sustainable intellectual capital (Chen, Y. S. 2008; Claver-Cortés, E. et al., 2007; Johnson, W. H. 1999; Bontis, N. 2000), which encompasses sustainable human capital, structural capital, and relational capital, it is crucial to explore the interrelationships between these components and corporate sustainability. This examination allows for the identification of synergies and interdependencies between sustainable intellectual capital and sustainability performance, recognizing them as critical elements for achieving organizational success. By understanding the interplay between these dimensions, organizations can effectively leverage their intellectual capital to drive sustainable performance across economic, environmental, and social aspects.

AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International
ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

Human Capital (HC) plays a pivotal role within the framework of Intellectual Capital (IC) as it serves as the primary driver of innovation and strategic rejuvenation within an organization, as highlighted by Bontis (1999). HC encompasses the collective competencies, implicit knowledge, and overall knowledge repository possessed by individuals within the organization, as emphasized by Bontis and Serenko (2009). The concept of "sustainability" has been linked to a diverse range of human endeavors involving the utilization of resources, encompassing natural, human, and financial aspects. Sustainability implies the pursuit of long-term continuity and the capacity to sustain these activities indefinitely, as discussed by Marinova, D., and Raven, M. (2006). Human capital is the central component of Intellectual Capital, and it is evident that the social aspects of sustainable development can be effectively captured through the assessment of human capital. One widely used indicator for measuring human capital, although not explicitly mentioned in this context, is the Human Development Index (HDI). The HDI encompasses various factors that contribute to overall life quality, including longevity, literacy, and economic well-being, as discussed by Makarov (2010). Sustainable Human Capital (SHC) plays a crucial role in establishing ethical principles and fostering an organizational culture that aligns with the company's sustainable values. Consequently, sustainability strategies can have a positive impact on the SHC of companies in several ways. Firstly, companies that demonstrate a strong commitment to environmental and social issues are more likely to attract employees who are inclined to acquire additional knowledge in these areas. Secondly, sustainability strategies can drive human resource practices such as the development of environmental initiatives and the recognition of achievements related to social and environmental commitments. Lastly, SHC improvement can enhance employee morale and working conditions, creating an environment that nurtures the generation of innovative sustainability-related ideas (Šlaus, I., & Jacobs, G. 2011). Effective implementation of SHC practices not only enhances the efficiency of Human Capital (HC) but also has positive implications for sustainable performance (Niccolò, N. 2020).

According to Pulic (2004), it is essential to consider financial and physical resources in order to gain a comprehensive understanding of the efficiency of value-creating resources. Structural Capital (SC) plays a significant role in promoting social sustainability by developing tools that enhance transparency and accountability (Massaro, M. et al., 2018). Furthermore, the analysis of SC can involve exploring Key Enabling Technologies, which contribute to the smart and

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

sustainable growth of companies and regions. These technologies have the potential to drive innovation in existing industries and serve as a foundation for new ones (Romano, A. et al., 2014). An organization with a strong emphasis on SC is likely to foster a collaborative environment that motivates employees and stakeholders to transfer and absorb knowledge. Conversely, organizations with inadequate systems and procedures may struggle to reach their full performance potential (Yusoff, Y. M. et al., 2019).

Relational Capital (RC) is another crucial component of intellectual capital that deserves attention. It primarily focuses on the relationship between an organization and its customers (Shaari, J. A. N. et al., 2011; Tai-Ning, Y. et al., 2011). Collaboration plays a vital role in promoting knowledge sharing and environmental awareness, driving the transition towards a more sustainable society. Therefore, knowledge sharing and collaboration are essential for embracing sustainable practices (Wang, Z. et al., 2014; Dickel, P. et al., 2018). Omar, M. K. et al. (2019) concluded that Sustainable Relational Capital (SRC) exhibits a positive and significant relationship with corporate sustainability. Similarly, Xu, J., & Wang, B. (2018) conducted research on industrial firms in Korea and emphasized the positive impact of Intellectual Capital (IC) on corporate sustainability, highlighting the significance of Relational Capital (RC).

Discussion and Concluding Remark

Knowledge is a priceless intangible resource that is crucial to determining whether an organisation succeeds or fails (Ooi, K. B., 2014). Many companies have acknowledged the crucial role of knowledge and its impact on sustainable performance across industries (Choi, S. Y., Kang, Y. S., & Lee, H. 2008). Scholars such as Anantatmula, V., and Kanungo, S. (2007) and Ling, T. N. et al. (2008) have emphasized the importance of knowledge as a vital resource for achieving sustainable performance. Civi (2000) highlighted that attaining competitive performance is a key application of knowledge, contributing to effective human capital management and overall organizational objectives. For numerous firms, the ability to create and apply intellectual expertise is essential for gaining sustainable advantage. While intellectual capital (IC) represents the set of intangible resources within a company, knowledge management encompasses the processes involved in managing and implementing these resources. By fostering the creation and sharing of best practices, knowledge management

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

improves organizational performance and promotes sustainable development (Torres, A. I. et al., 2018; Alvino, F. et al., 2021).

Hence, researchers have underscored the significance of monitoring and assessing intangible resources like intellectual capital (IC) as pivotal factors for competitiveness, market trust, innovation, and sustainability. Sustainability has emerged as a fundamental requirement for the survival and existence of businesses. In this regard, companies play a crucial role as custodians of resources that have the potential to generate sustainable value, even in their intangible form. This necessitates a willingness to explore investment solutions that facilitate the implementation of knowledge management (KM) processes, as well as the adoption of innovative and technological systems that promote knowledge sharing and optimize the potential of intellectual capital (Alvino, F. et al., 2021).

Indeed, the notion of sustainable intellectual capital has emerged in recognition of the interconnectedness between sustainability and the knowledge assets within organizations. This concept acknowledges that intellectual capital, which includes human, structural, and relational assets, plays a vital role in advancing sustainable development.

The development of sustainable intellectual capital can be attributed to various factors:

Acknowledgment of Sustainability Challenges: Organizations have become increasingly aware of urgent sustainability challenges, such as climate change, limited resources, social inequality, and ethical issues. This heightened awareness has compelled organizations to seek ways to incorporate sustainability into their practices. Consequently, there is a need to identify and effectively manage intellectual resources that can contribute to sustainable initiatives.[1]

Transformation of Business Paradigms towards Sustainability: The transformation of business paradigms towards sustainability has urged organizations to embrace a broader perspective that considers environmental, social, and economic dimensions. As organizations aspire to attain sustainable performance, they recognize the significance of utilizing their intellectual capital to drive positive outcomes and align with sustainability objectives. This paradigm shift

[1] Suciu, M. C., & Năsulea, D. F. (2019). Intellectual capital and creative economy as key drivers for competitiveness towards a smart and sustainable development: challenges and opportunities for cultural and creative communities. *Intellectual capital management as a driver of sustainability: Perspectives for organizations and society*, 67-97.

AIRO JOURNALS
Free / Unpaid
Peer Reviewed
Multidisciplinary
International
ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

encourages organizations to leverage their intellectual resources to create innovative solutions that address societal and environmental challenges while maintaining economic viability.[2]

Expectations of Stakeholders : Stakeholders, encompassing customers, investors, employees, and communities, are progressively placing greater emphasis on transparency, accountability, and responsible conduct from organizations. Sustainable intellectual capital serves as a valuable tool for meeting these expectations by showcasing an organization's dedication to environmental and social responsibility. By effectively managing and leveraging their intellectual capital, organizations can foster stakeholder trust and loyalty, thereby building stronger relationships with their stakeholders and gaining a competitive edge in the market.[3]

Incorporation of Sustainability into Corporate Strategies: Organizations are increasingly acknowledging the importance of integrating sustainability into their fundamental business strategies, rather than treating it as a detached and independent aspect. Sustainable intellectual capital plays a vital role in this integration by providing the requisite knowledge and expertise to incorporate sustainability considerations into decision-making processes and strategic planning. By leveraging their intellectual capital effectively, organizations can drive more effective and influential sustainability outcomes, ensuring that sustainable practices are embedded throughout the organization's operations and strategic initiatives.[4]

Adoption of Reporting and Disclosure Standards: The introduction of sustainability reporting frameworks and disclosure standards, such as the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and Integrated Reporting Framework, has motivated organizations to systematically communicate their sustainability performance. Sustainable intellectual capital plays a vital role in this process by providing the necessary information and data for comprehensive and transparent sustainability reporting. By effectively managing and leveraging their intellectual capital, organizations can ensure the availability of

[2] Alvino, F., Di Vaio, A., Hassan, R., & Palladino, R. (2021). Intellectual capital and sustainable development: A systematic literature review. *Journal of Intellectual Capital*, *22*(1), 76-94.
[3] Olander, H., Hurmelinna-Laukkanen, P., & Heilmann, P. (2015). Human resources–strength and weakness in protection of intellectual capital. *Journal of Intellectual Capital*, *16*(4), 742-762.
[4] Amidon, D. M. (2003). *The innovation superhighway: Harnessing intellectual capital for sustainable collaborative advantage*. Routledge.

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

relevant data to meet reporting requirements, enabling stakeholders to make informed decisions and assessments regarding the organization's sustainability performance.[5]

The concept of SIC emphasises the incorporation of environmental factors into the framework for intellectual capital of an organisation. It understands how crucial it is to make use of knowledge and experience to promote sustainable behaviours, lessen negative environmental effects, and improve environmental performance. Organisations can create and deploy green technology, eco-friendly business models, and eco-friendly processes that support economic, environmental, and societal objectives by actively controlling and utilising SIC. This improves environmental stewardship while simultaneously providing chances for cost reduction, market differentiation, and long-term competitiveness. Overall, the concept of sustainable intellectual capital has evolved as organizations recognize the value of their knowledge assets in driving sustainable practices and addressing sustainability challenges. It reflects the integration of environmental, social, and economic considerations into the management and utilization of intellectual resources to achieve long-term success and positive impact.

References

Abbas, J., & Sağsan, M. (2019). Impact of knowledge management practices on green innovation and corporate sustainable development: A structural analysis. *Journal of cleaner production*, *229*, 611-620.

Achim, M. V., & Borlea, S. N. (2014). Environmental performances-way to boost up financial performances of companies. *Environmental engineering and management journal*, *13*(4), 991-1004.

Agostini, L., Nosella, A., & Filippini, R. (2017). Does intellectual capital allow improving innovation performance? A quantitative analysis in the SME context. *Journal of Intellectual Capital*.

[5] Oliveira, L., Lima Rodrigues, L., & Craig, R. (2010). Intellectual capital reporting in sustainability reports. *Journal of Intellectual Capital*, *11*(4), 575-594.

Cinquini, L., Passetti, E., Tenucci, A., & Frey, M. (2012). Analyzing intellectual capital information in sustainability reports: some empirical evidence. *Journal of Intellectual Capital*.

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

Akpinar, A. T., & Akdemir, A. (1999). Intellectual capital. In *Third European Conference* (pp. 332-340).

Alvino, F., Di Vaio, A., Hassan, R., & Palladino, R. (2021). Intellectual capital and sustainable development: A systematic literature review. *Journal of Intellectual Capital*, *22*(1), 76-94.

Anantatmula, V., & Kanungo, S. (2007). Modelling enablers and barriers for successful km implementation. In *Proceedings of the Hawaii International Conference on System Sciences (HICSS)*.

Artiach, T., Lee, D., Nelson, D., & Walker, J. (2010). The determinants of corporate sustainability performance. *Accounting & Finance*, *50*(1), 31-51.

Banerjee, P. M. (2013). Sustainable human capital: Product innovation and employee partnerships in technology firms. *Cross Cultural Management: An International Journal*, *20*(2), 216-234.

Bontis, N. (2000). Managing organizational knowledge by diagnosing intellectual capital. *Knowledge Management: Classic and Contemporary Works. MIT Press, Cambridge*.

Cavicchi, C., & Vagnoni, E. (2017). Does intellectual capital promote the shift of healthcare organizations towards sustainable development? Evidence from Italy. *Journal of Cleaner Production*, *153*, 275-286.

Chen, Y. S. (2008). The positive effect of green intellectual capital on competitive advantages of firms. *Journal of business ethics*, *77*, 271-286.

Chen, Y. S. (2008). The positive effect of green intellectual capital on competitive advantages of firms. *Journal of business ethics*, *77*, 271-286.

Choi, S. Y., Kang, Y. S., & Lee, H. (2008). The effects of socio-technical enablers on knowledge sharing: an exploratory examination. *Journal of information science*, *34*(5), 742-754.

Civi, E. (2000). Knowledge management as a competitive asset: a review. *Marketing Intelligence & Planning*, *18*(4), 166-174.

Claver-Cortés, E., Dolores López-Gamero, M., Molina-Azorín, J. F., & Del Carmen Zaragoza-Sáez, P. (2007). Intellectual and environmental capital. *Journal of Intellectual Capital*, *8*(1), 171-182.

Dal Mas, F. (2019). The relationship between intellectual capital and sustainability: An analysis of practitioner's thought. *Intellectual capital management as a driver of sustainability: Perspectives for organizations and society*, 11-24.

Dereń, A. M., & Skonieczny, J. (2022). Green Intellectual Property as a Strategic Resource in the Sustainable Development of an Organization. *Sustainability*, *14*(8), 4758.

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

Dickel, P., Hörisch, J., & Ritter, T. (2018). Networking for the environment: The impact of environmental orientation on start-ups' networking frequency and network size. *Journal of cleaner production*, *179*, 308-316.

Dutot, V., Lacalle Galvez, E., & Versailles, D. W. (2016). CSR communications strategies through social media and influence on e-reputation: An exploratory study. *Management decision*, *54*(2), 363-389.

Gross-Gołacka, E., Kusterka-Jefmańska, M., & Jefmański, B. (2020). Can elements of intellectual capital improve business sustainability?—The perspective of managers of SMEs in Poland. *Sustainability*, *12*(4), 1545.

Hansmann, R., Mieg, H. A., & Frischknecht, P. (2012). Principal sustainability components: empirical analysis of synergies between the three pillars of sustainability. *International Journal of Sustainable Development & World Ecology*, *19*(5), 451-459.

Hussinki, H., Kianto, A., Vanhala, M., & Ritala, P. (2019). Happy employees make happy customers: The role of intellectual capital in supporting sustainable value creation in organizations. *Intellectual Capital Management as a Driver of Sustainability: Perspectives for Organizations and Society*, 101-117.

Johnson, W. H. (1999). An integrative taxonomy of intellectual capital: measuring the stock and flow of intellectual capital components in the firm. *International journal of technology management*, *18*(5-8), 562-575.

Jovanović, M., Petrović, B., & Janjić, I. (2021). Key determinants of sustainable intellectual capital of enterprises. *Economics of sustainable development*, *5*(1), 13-22.

Kadir, A. R. A., Aminallah, A., Ibrahim, A., Sulaiman, J., Yusoff, M. F. M., Idris, M. M., ... & Malek, Z. A. (2018). The influence of intellectual capital and corporate entrepreneurship towards small and medium enterprises'(SMEs) sustainable competitive advantage: building a conceptual framework. In *Proceedings of the 2nd Advances in Business Research International Conference: ABRIC2016* (pp. 67-77). Springer Singapore.

Klimek, D., & Jędrych, E. (2020). A model for the sustainable management of enterprise capital. *Sustainability*, *13*(1), 183.

Kujansivu, P. (2008). Operationalising intellectual capital management: choosing a suitable approach. *Measuring Business Excellence*.

Lee, D. D., & Faff, R. W. (2009). Corporate sustainability performance and idiosyncratic risk: A global perspective. *Financial Review*, *44*(2), 213-237.

Ling, T. N., Yih, G. C., Eze, U. C., Gan, G. G. G., & Ling, L. P. (2008). Knowledge management drivers for organisational competitive advantage. In *Proceedings of Applied International Business Conference* (pp. 502-510).

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

López-Gamero, M. D., Zaragoza-Sáez, P., Claver-Cortés, E., & Molina-Azorín, J. F. (2011). Sustainable development and intangibles: building sustainable intellectual capital. *Business Strategy and the Environment*, *20*(1), 18-37.

Lu, Y., Li, G., Luo, Z., Anwar, M., & Zhang, Y. (2021). Does intellectual capital spur sustainable competitive advantage and sustainable growth?: A study of Chinese and Pakistani firms. *Sage Open*, *11*(1), 2158244021996702.

Luthy, D. H. (1998, August). Intellectual capital and its measurement. In *Proceedings of the Asian Pacific Interdisciplinary Research in Accounting Conference (APIRA), Osaka, Japan* (pp. 16-17).

Makarov, P. (2010). Intellectual capital as an indicator of a sustainable development. *Journal of Sustainable Development*, *3*(3), 85.

Marco-Lajara, B., Zaragoza-Saez, P., Falcó, J. M., & Millan-Tudela, L. A. (2022). Analysing the relationship between green intellectual capital and the achievement of the sustainable development goals. In *Handbook of Research on Building Inclusive Global Knowledge Societies for Sustainable Development* (pp. 111-129). IGI Global.

Marinova, D., & Raven, M. (2006). Indigenous knowledge and intellectual property: A sustainability agenda. *Journal of Economic Surveys*, *20*(4), 587-605.

Massaro, M., Dumay, J., Garlatti, A., & Dal Mas, F. (2018). Practitioners' views on intellectual capital and sustainability: From a performance-based to a worth-based perspective. *Journal of Intellectual Capital*.

McDowell, W. C., Peake, W. O., Coder, L., & Harris, M. L. (2018). Building small firm performance through intellectual capital development: Exploring innovation as the "black box". *Journal of business research*, *88*, 321-327.

Meadows, D. H., Meadows, D. H., Randers, J., & Behrens III, W. W. (1972). The limits to growth: a report to the club of Rome (1972). *Google Scholar*, *91*, 2.

Miller, W. (1999). Building the ultimate resource. *Management review*, *88*(1), 42.

Mohamed, M., Murray, A., & Mohamed, M. (2010). The role of information and communication technology (ICT) in mobilization of sustainable development knowledge: a quantitative evaluation. *Journal of knowledge management*, *14*(5), 744-758.

Mukherjee, T., & Sen, S. S. (2019). Intellectual capital and corporate sustainable growth: The Indian evidence. *Asian Journal of Business Environment*, *9*(2), 5-15.

Niccolò, N. (2020). Intellectual capital: the missing link in the corporate social responsibility–financial performance relationship.

Oliveira, L., Lima Rodrigues, L., & Craig, R. (2010). Intellectual capital reporting in sustainability reports. *Journal of Intellectual Capital*, *11*(4), 575-594.

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

Omar, M. K., Mohd Yusoff, Y., & Kamarul Zaman, M. D. (2019). The effect of organizational learning capability as a mediating variable in the relationship between green intellectual capital and business sustainability: evidence from the manufacturing sector. *International Journal of Academic Research in Business and Social Sciences*, *9*(6), 337-352.

Ooi, K. B. (2014). TQM: A facilitator to enhance knowledge management? A structural analysis. *Expert Systems with Applications*, *41*(11), 5167-5179.

Pedrini, M. (2007). Human capital convergences in intellectual capital and sustainability reports. *Journal of intellectual capital*, *8*(2), 346-366.

Pulic, A. (2004). Intellectual capital–does it create or destroy value?. *Measuring business excellence*.

Romano, A., Passiante, G., Del Vecchio, P., & Secundo, G. (2014). The innovation ecosystem as booster for the innovative entrepreneurship in the smart specialisation strategy. *International Journal of Knowledge-Based Development*, *5*(3), 271-288.

Sardo, F., Serrasqueiro, Z., & Alves, H. (2018). On the relationship between intellectual capital and financial performance: A panel data analysis on SME hotels. *International Journal of Hospitality Management*, *75*, 67-74.

Shaari, J. A. N., Khalique, M., & Isa, A. H. B. M. (2011). Ranking of public and domestic private sector commercial banks in Pakistan on the basis of the intellectual capital performance. *KASBIT Business Journal*, *4*(1), 61-68.

Šlaus, I., & Jacobs, G. (2011). Human capital and sustainability. *Sustainability*, *3*(1), 97-154.

Suki, N. M., Suki, N. M., Sharif, A., Afshan, S., & Rexhepi, G. (2022). Importance of green innovation for business sustainability: Identifying the key role of green intellectual capital and green SCM. *Business Strategy and the Environment*.

Tai-Ning, Y., Hsiao-Chen, C., Shou-Yen, L., & Chiao-Lun, T. (2011). Knowledge creation and intellectual capital on securities investment services. *African Journal of Business Management*, *5*(3), 924.

Torres, A. I., Ferraz, S. S., & Santos-Rodrigues, H. (2018). The impact of knowledge management factors in organizational sustainable competitive advantage. *Journal of Intellectual Capital*, *19*(2), 453-472.

Vale, J., Miranda, R., Azevedo, G., & Tavares, M. C. (2022). The Impact of Sustainable Intellectual Capital on Sustainable Performance: A Case Study. *Sustainability*, *14*(8), 4382.

Wang, Z., Wang, N., & Liang, H. (2014). Knowledge sharing, intellectual capital and firm performance. *Management decision*.

ISSN: 2320-3714
Volume 4 Issue 3
December 2022
Impact Factor: 11.7
Subject : Commerce

Wasiluk, K. L. (2013). Beyond eco-efficiency: understanding CS through the IC practice lens. *Journal of Intellectual Capital*.

WCED, S. W. S. (1987). World commission on environment and development. *Our common future*, *17*(1), 1-91.

Xu, J., & Wang, B. (2018). Intellectual capital, financial performance and companies' sustainable growth: Evidence from the Korean manufacturing industry. *Sustainability*, *10*(12), 4651.

Yusliza, M. Y., Yong, J. Y., Tanveer, M. I., Ramayah, T., Faezah, J. N., & Muhammad, Z. (2020). A structural model of the impact of green intellectual capital on sustainable performance. *Journal of Cleaner Production*, *249*, 119334.

Yusoff, Y. M., Omar, M. K., Zaman, M. D. K., & Samad, S. (2019). Do all elements of green intellectual capital contribute toward business sustainability? Evidence from the Malaysian context using the Partial Least Squares method. *Journal of Cleaner Production*, *234*, 626-637.

Author's Declaration

I as an author of the above research paper/article, here by, declare that the content of this paper is prepared by mean if any person having copyright issue or patent or anything otherwise related to the content, I shall always be legally responsible for any issue. For the reason of invisibility of my research paper on the website/amendments/updates, I have resubmitted my paper for publication on the same date. If any data or information given by me is not correct I shall always be legally responsible. With my whole responsibility legally and formally I have intimated the publisher (Publisher) that my paper has been checked by my guide (if any) or expert to make it sure that paper is technically right and there is no unaccepted plagiarism and the entire content is genuinely mine. If any issue arise related to Plagiarism / Guide Name / Educational Qualification / Designation/Address of my university/college/institution/ Structure or Formatting/ Resubmission / Submission /Copyright / Patent/Submission for any higher degree or Job/ Primary Data/ Secondary Data Issues, I will be solely/entirely responsible for any legal issues. I informed that the most of the data from the website is invisible or shuffled or vanished from the data base due to some technical fault or hacking and therefore the process of resubmission is there for the scholars/students who finds trouble in getting their paper on the website. At the time of resubmission of my paper I take all the legal and formal responsibilities, If I hide or do not submit the copy of my original documents (Aadhar/Driving License/Any Identity Proof and Address Proof and Photo) in spite of demand from the publisher then my paper maybe rejected or removed I website anytime and may not be consider for verification. I accept the fact that as the content of this paper and the resubmission legal responsibilities and reasons are only mine then the Publisher (Airo International Journal/Airo National Research Journal) is never responsible. I also declare that if publisher finds any complication or error or anything hidden or implemented otherwise, my paper may be removed from the website or the watermark of remark/actuality may be mentioned on my paper. Even if anything is found illegal publisher may also take legal action against me

Deepak Kumar Nama
Dr. Ranjana Kanungo