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# Sustainability-Driven Enterprise: A Literature Review on Organizational Capabilities

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**Abstract:** A sustainability-driven enterprise (SDE) is an organization that applies business principles to solve social and environmental problems. These organizations should be capable of managing the Triple Bottom Line tension within their organization. Furthermore, they should have a transformative impact on future generations and the development of global socioecological systems. The quest for an SDE and its organizational capability can be traced to the late 1980s. Since then, scholars and practitioners have published several hundred empirical studies and many reviews on this issue. However, the most extensive previous study analyzes only separate study domains, thereby making findings difficult to compare and generalize. Thus, knowledge of SDE organizational capabilities remains fragmented. This study extracts all av ailable primary and secondary data from previous academic studies registered in the SCOPUS databases to overcome this shortcoming. Thus, the study combines the findings of more than 100 individual studies from 2015 to 2021. Hence, this study is the most exhaustive overview of academic research on this topic from the Sustainable Development Goals declared in 2015. The results show that at least five organizational capabilities are required to build an SDE. This study will offer promising fundamentals for building SDE practices and creating further research. Suggestions for further research development are also provided.

**Keywords:** literature review, organizational capabilities, organizational design, organizational development, sustainable enterprise.

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## INTRODUCTION

In 2015 United Nations published the Sustainability Development Goals 2030 (SDG-2030), a universal guidance to protect the planet and ensure that all people enjoy peace and prosperity by 2030. These consist of 17 societal and environmental goals that should be achieved by 2030 (SDG Compass, 2016). This guidance has been cascaded into national roadmaps (Bappenas, 2017), action plans (Kementrian PPN, 2020), implementation guidance for public and private entities (Bappenas, 2019), and also sustainable reporting guidance (Bappenas, 2020).

Moreover, at the enterprise level, there is an abundance of research related to implementing sustainability by defining the Triple Bottom Line (TBL) issues and translating them into daily business logic (Padin et al., 2016; Høgevold et al., 2016; Padin et al., 2017; Rodriguez et al., 2018; Laurell et al., 2019).

However, when the COVID-19 pandemic breaks out, it hit health, education, and income simultaneously, the Sustainability Development Goals' progress has significant setbacks (Sachs et al., 2020; Hall et al., 2020). This condition shows the vulnerabilities in our organizations worldwide (Sachs et al., 2020). Therefore, the organization should find new ways to implement TBL while surviving unexpected challenges.

To encounter those challenges and vulnerabilities, organizations worldwide must develop their strategies and capabilities to turn their organization more sustainable in the economic, social, and environmental domains. This sustainability also means fulfilling our needs today without compromising the next generations' ability to meet their needs in the future (Bansal & DesJardine, 2014; Alshehhi et al., 2018) and surviving along the way to achieve that.

The urgent matter now is how to design a robust strategy for their enterprises that is aligned with sustainable development that balances economic, societal, and environmental aspects (Bansal & DesJardine, 2014; Alshehhi et al., 2018). These were later implemented into their organizational capabilities to help employees, systems, and processes within the firm respond to external pressure.

Unfortunately, such integrated and distilled knowledge on capabilities to build such an organization has not yet existed. As we will see in the further section, previous studies on the Organizational Capabilities of SDE are vast. It was dispersed and specialized in certain aspects of sustainability or specific parts of organizational management practices. This study intends to identify the generalized organizational capabilities needed to build an SDE. Further, identifying these organizational capabilities will be beneficial as the initial step to building generations of enterprises built upon sustainability values that impact global-socio-ecological positively.

## METHODS

The study's first phase will apply the PRISMA (Liberati et al., 2009) framework to identify current SDE organizational capabilities, as depicted in Figure 1. This study consisted of four steps; identification, screening, eligibility, and the included research.

It will use only peer-reviewed articles from Scopus in the identification phase since Scopus is one of the world's most prominent abstract and citation databases. This study uses the keywords of "Sustainability" AND "Enterprise" AND "Capabilities", and resulted in 551 journal articles.

Furthermore, in the screening phase, this study specifically chose the articles dated from 2015-to 2021 for two reasons; first, to check the impacts of the UN's Sustainability Development Goals published in 2015, and secondly, to prioritize the last five years' research novelty. Another filter used on the Scopus database search is Business & Management, English language, and journal articles and reviews.

After the screening process, the author checked article eligibility by reading the titles and abstracts and choosing the relevant research themes, which resulted in 121 articles. Although, these articles are the main object of identifying organizational capabilities from the articles, this study extracts the titles and the abstracts by understanding capabilities that literary mentioned or synthesized from the understanding of the article. The literature review is intended to identify accumulated knowledge and collect evidence through sets of previous research papers. The literature review has a significant role in synthesizing previous research findings by providing a knowledge base and evidence-based insight for professional judgment and expertise (Aria & Cuccurullo, 2017; Zupic & Čater, 2015).

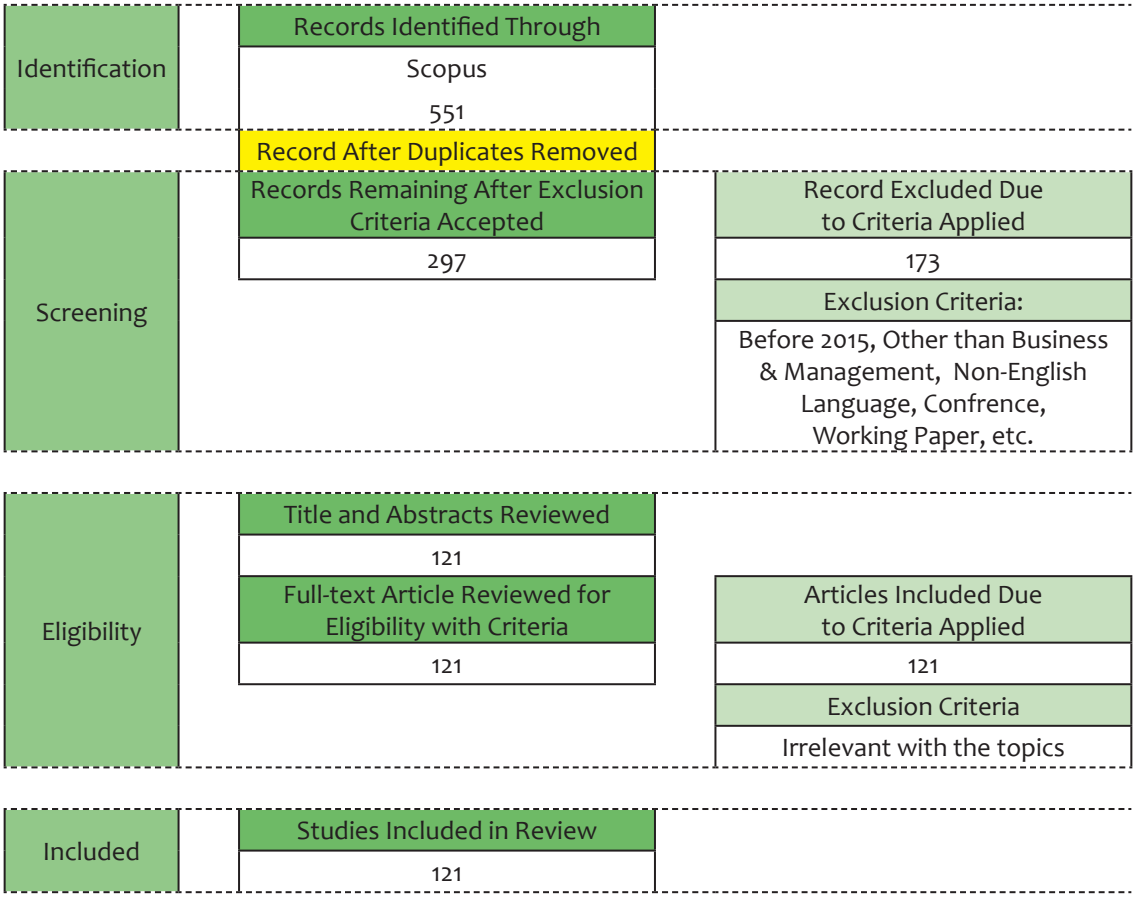


**Figure 1 PRISMA framework implemented for this study**

This study found that the research on sustainability enterprise capabilities is vastly diverse and consists of different contexts. This condition makes it hard to generalize and define an initial concept, which brings this study to the second phase.

This study proposes bibliometrics graphical analysis to provide a systematic, transparent and replicable review process. The bibliometrics also incorporated statistical measurement in this process. This analysis is expected to help identify unclear patterns. In addition, Bibliometrics would provide more objective and reliable analyses derived from new information (Aria & Cuccurullo, 2017; Zupic & Čater, 2015).

Bibliometrics might provide a structured analysis of a large body of information. However, it can also identify trends over time, theme-based research, knowledge boundaries shifts, and clarify the big picture of the research themes (Zupic & Čater, 2015; Aria & Cuccurullo, 2017). Therefore, this characteristic is considered appropriate for the research objective to identify sustainability enterprise capabilities that are relatively dispersed and extensive.

For this study, the author used Biblioshiny as a bibliometrics tool. Biblioshiny, an application of bibliometrics, bibliometrix itself is open-source software for comprehensive science mapping analysis (Aria & Cuccurullo, 2017).

To conduct science mapping studies, Zupic & Čater suggest a five-step procedure, which is:

1. Study Design, Define the research questions and choose the appropriate methods in the bibliometric tools to answer the research questions.
2. Data Collection, Select the database that contains bibliometric data, filter the main document and export it from the selected database.

3. Data Analysis, Use the bibliometric software to do the analysis. Further statistical tools also applicable to represent research specialties.
4. Data Visualization, Decide which visualization method is appropriate to employ in step number 3, analysis.
5. Interpretation, Interpret and describe the result.

These steps is depicted by Aria & Cuccurullo in figure 2.

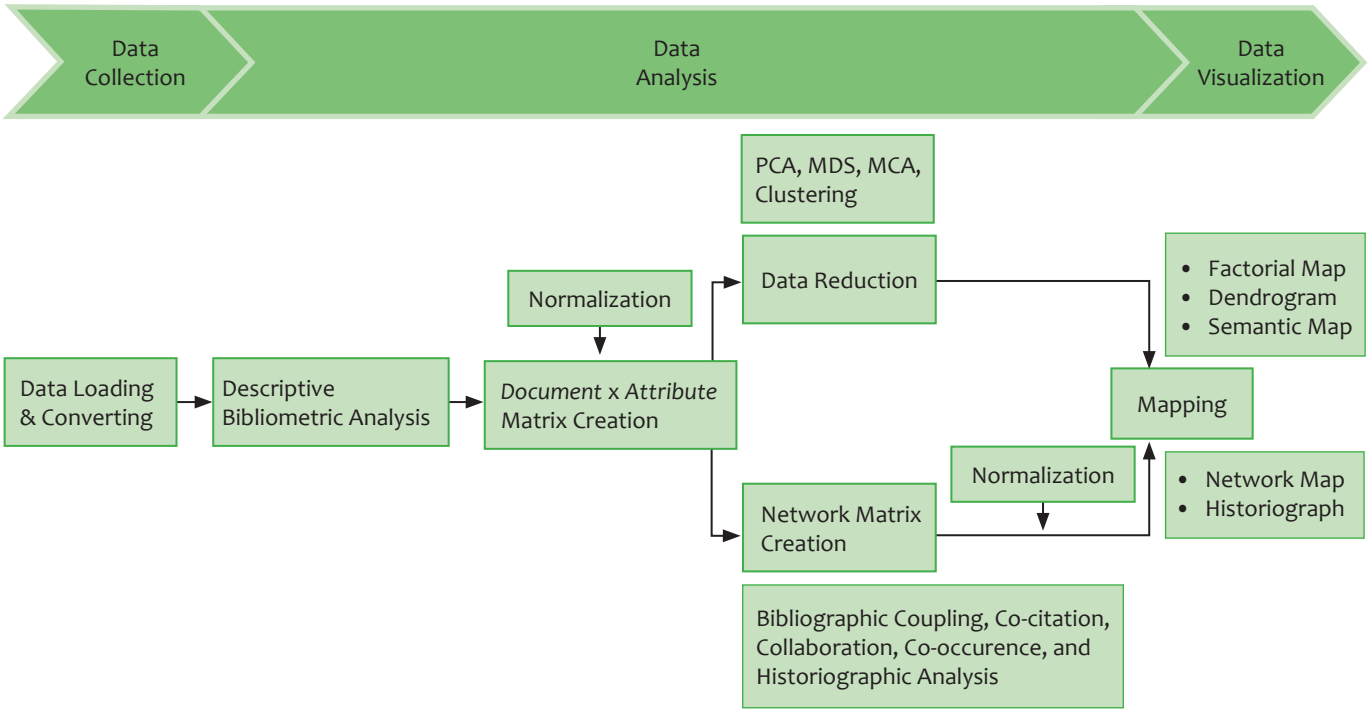


**Figure 2 Bibiliometrix and the recommended science mapping workflow, Adopted from Aria and Cuccurullo, 2017**

Suppose the graphical analysis could not identify the generalization of the topics. In that case, this study will identify categorization criteria to categorize the capabilities themes obtained from manual coding on the papers.

## RESULTS AND DISCUSSION

As depicted in Figure 3, the number of publications on Sustainability, Enterprise, and capabilities began to increase significantly from 2016 onward, with a peak in 2020 of 32 articles published. However, from 2021 the numbers are declining, possibly due to the pandemic condition that might hinder the research activities.

The first two years, 2015 and 2016, were still dominated by discussion about sustainability and innovation in small-medium enterprises. Others discussed government roles, collaboration, and early exploration of sustainability issues. However, starting in 2017, sustainable development topics began to rise. In addition, they began to discuss the role of leaders in sustainability. Finally, at the peak in 2020, sustainable development topics dominated the research themes.

The theme of sustainability enterprise capabilities is also growing. For example, from the Sustainability Development Goals were released in 2015 until 2017, it is only three main research topics of "sustainability," "sustainable development," and "environmental management". The thematic evolution is depicted in Figure 4, using Biblioshiny tools.

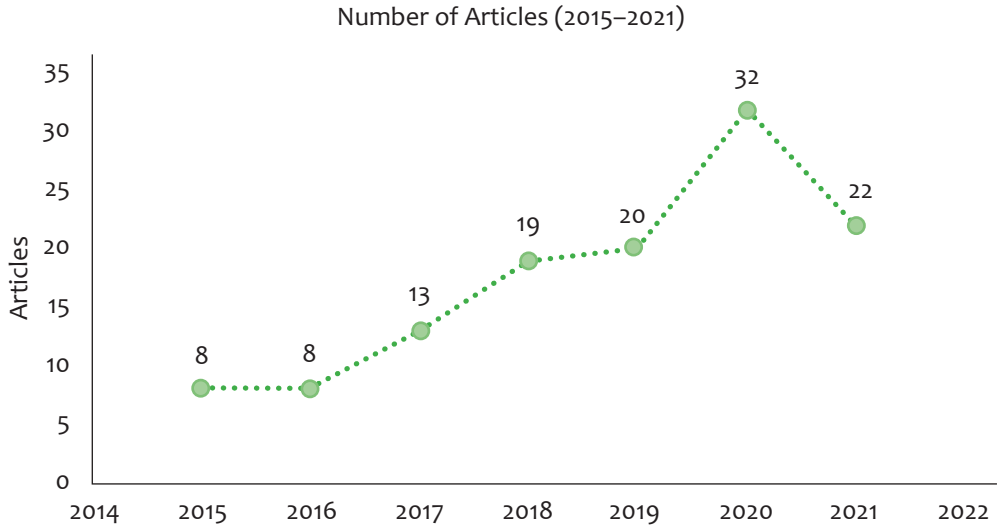


**Figure 3 Numbers of Articles (2015-2021)**

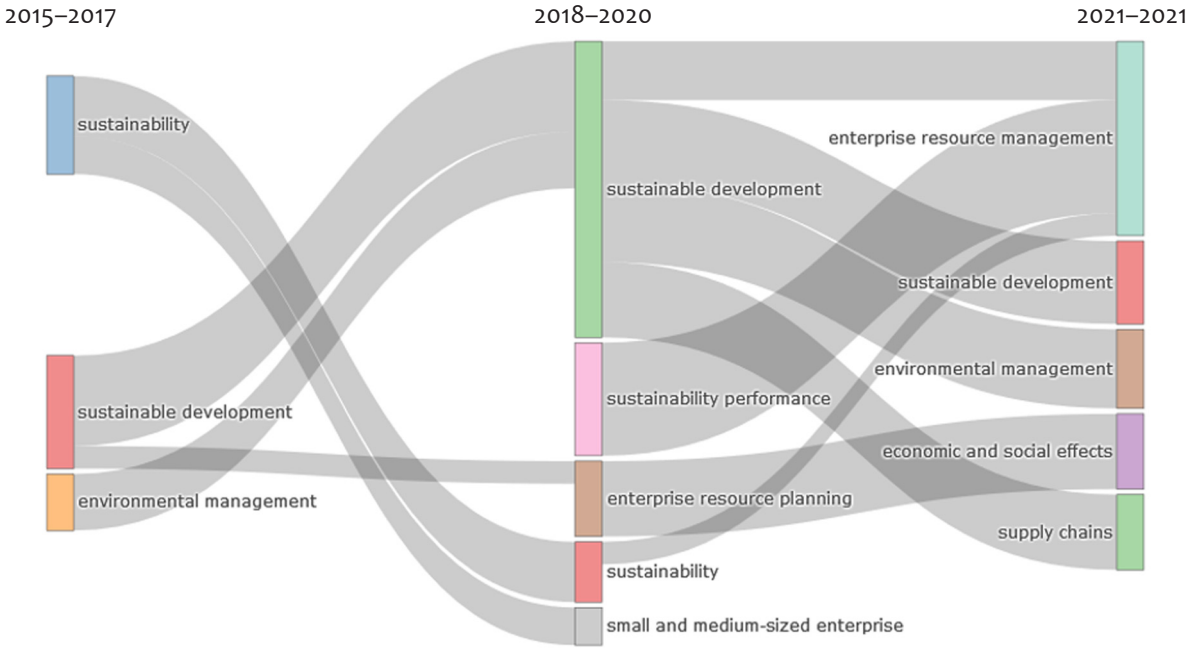


**Figure 4 Thematic Evolution From 2015-2021, Related to Sustainable Enterprise Capabilities**

The "Sustainable Enterprise Capabilities" studies reached their peak during the years 2018-2020. The most studied themes related to "Sustainability Development Goals (SDG)". The SDG themes developed due to more countries adopting SDG into their accounts. This concern translated into research due to the need to provide studies related to applicable SDG themes in their countries (Bappenas, 2019; Bappenas, 2020; Kementrian PPN, 2020). Other themes that emerged during 2018-2020 are sustainability performance, enterprise resource planning, sustainability in general, and sustainability implementation in Small-Medium Enterprise. These emerging themes further developed in 2021 into more impactful research due to the growing awareness of government, business, and academics on Sustainability issues – a further study in 2021 starts to explore the impacts of sustainability enterprises on economics and society.

This study attempts to identify the pattern for generalization using cluster analysis, as shown in figure 5. Larger circles and labels graphically represent the more substantial the relationship. For example, the axis on the graphic shows the themes of centrality and impact, and consists of four quadrants. The top right quadrants represent the high impact and high centrality themes.

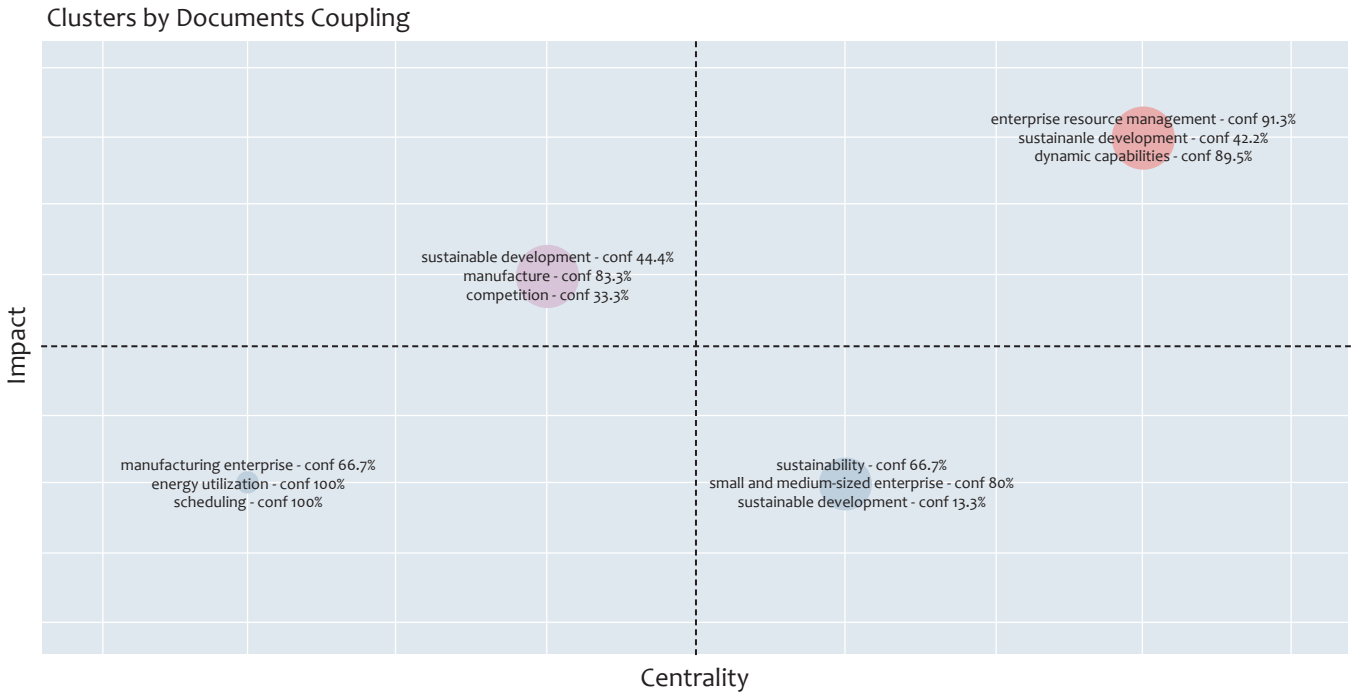


**Figure 5 Clusters generated by Document Coupling in Biblioshiny**

Figure 5 created from 60 articles with minimum cluster frequencies of 5%, the label per cluster is generated from the "keyword plus" method natively from Biblioshiny tools.

The clusters that emerged from the Biblioshiny platform were used to process the clusters by document coupling of the 60 publications with a minimum of 5% cluster frequencies in the Scopus database. In this way, the most co-cited publications within this dataset were selected to identify the following clusters:

1. Enterprise Resource Management, Dynamic Capabilities & Sustainable Development
2. Sustainability, Small-Medium Enterprise & Sustainable Development
3. Manufacturing Enterprise, Energy Utilization & Scheduling
4. Sustainable Development, Manufacture & Competition

Since these four clusters hardly provide straightforward meaning, the author does a manual "coding or labeling" process on each document to highlight the main capability themes mentioned in the papers. The results are as follows:

The first cluster (top right quadrant) identified is related to Enterprise Resource Management and Sustainable Development. It consists of 21 articles. From these articles identified least 45 capabilities emerged, as depicted in Table 1.

Some unique capabilities that emerged from cluster 1 are Dynamic Capabilities, Business Model Innovation, Risk Management, and Stakeholder Orchestration. Some of them are related to Business Governance. These clusters portray that resources are the tangible and intangible assets to generate service streams that the firm

can deploy. Therefore, the capabilities to orchestrate assets and market creation (or co-creation) are vital to profitable resource management (Teece, 2019).

This second cluster (bottom right quadrant) is related to Sustainability, SME, and Sustainable Development. This cluster consists of 14 articles, and there are approximately 37 capabilities that have emerged from the articles. These capabilities portray what SMEs are doing in their daily activities to manage their business carefully. an SME is required to handle their growth, efficient cost strategy, and optimize their capabilities by enhancing their technological and networking capabilities (Klewitz, 2017; Partanen & Goel, 2017) (see Table 2).

**Table 1 Cluster 1 Enterprise Resource Management, Sustainable Development & Dynamic Capabilities**

| Cluster Description | Authors | Emerging Capability Themes |
|---|---|---|
| Enterprise Resource Management, Sustainable Development & Dynamic Capabilities | (Buil-Fabregà et al., 2017), (Amui et al., 2017), (Mousavi et al., 2018; Mousavi & Bossink, 2017), (Ji et al., 2018), (Watson et al., 2018), (Kumar et al., 2018, 2021), (Inigo & Albareda, 2019), (Ghadge et al., 2019), (Eikelenboom & de Jong, 2019), (Bocken & Geradts, 2020), (Kumar et al., 2020), (Rathore et al., 2020), (Forcadell & Aracil, 2021), (Linde et al., 2021), (Khan et al., 2021), (Chowdhury & Quaddus, 2021), (Tiberius et al., 2021), (Alsawafi et al., 2021), (Chkanikova & Sroufe, 2021) | Leadership, Individual Dynamic Managerial Capabilities; Dynamic Organizational Capabilities; Dynamic Capabilities, Sustainability Innovation; Cooperative Resilience, Dynamic Capabilities; Innovation, External Stakeholder Engagement, Access to Expertise, Solve Complex Problem and Gain Social Legitimacy, First Order Capability, Second Order Capability, Problem Reframing; Dynamic Capabilities, Organizational Routines, Sustainability Innovation; Dynamic Capabilities, Collaboration Strategy; Sustainable Oriented Innovation dynamics, Dynamic Capabilities; Sustainable Procurement; External Integration Capabilities; Sustainable Business Model Innovation, Organizational Design Capabilities; Distributed Manufacturing; Lean Practice; Firm Dynamic Capabilities (Leadership, Motivation, Stakeholder Engagement, Partnership; Dynamic Capabilities, Orchestrating Ecosystem Innovation; Collaboration Culture & Commitment, Sustainable Supply Chain, Resource Sharing; Circular Economy Implementation; Supply Chain Sustainability, Sustainability Risk Reducing Capabilities; Economic Sustainability Capabilities, (Future Orientation, Traditional Mindset, Rapid Decision Making, Intuition, Speed, Resource Slack), Social Sustainability Capabilities (innovative mindsets, human capital investments, and participation); Internal Management Relation, Employee Relation, Quality Training; Standard & Certification Compliance. |

**Table 2 Cluster 2 Sustainability, Small-Medium Enterprise, Sustainable Development**

| Cluster Description | Authors | Emerging Capability Themes |
|---|---|---|
| Sustainability, Small-Medium Enterprise, Sustainable Development | (Subramanian et al., 2015), (Anusornnitisarn et al., 2017), (Ramani et al., 2017), (Klewitz, 2017), (Partanen & Goel, 2017), (van den Buuse & Kolk, 2019), (Dubey et al., 2019), (Kiefer et al., 2019), (Andersén et al., 2020), (Stekelorum et al., 2020), (Ciasullo et al., 2020), (Pan et al., 2020), (Jiao et al., 2020), (Roxas, 2021) | ICT, Cloud Computing; Leadership; Core Values & Motivation, Entrepreneurial Capabilities, Mobilize Resources, Innovation, Social Impact Forecasting, Long Term Impact, Integrate & Investment; Boundary Spanning (Setting Context), Networking, Learning Capabilities, Sustainability Oriented Innovation, Conquer Niche Market, Cut Resource Usage, Access To Knowledge Network, Sustainability Oriented Strategy; Specific Growth Management, Technological Capabilities, Financial Sourcing, Tech Sourcing; Internationalization, Local Contextualization, Resource & Capabilities Development; Big Data & Predictive Analysis; Dynamic Capabilities, Green Supply Chain, Corporate Culture, Internal Financing, Eco-Innovation, Certification Compliance, Technological Expertise; Green Purchasing Capabilities; Corporate Environmental Capabilities; International Ambidexterity Strategy; Ethical, Proactive Environmental Behavior & Strategy; Green Innovative Strategy; Social Capital, Entrepreneurial Orientation, Environmental Sustainability. |

The most notable themes in this cluster are Core Values, Motivation, Orientation, Technologies, and Strategic Initiatives required for an SDE to survive and contribute to social and environmental impact.

Only three articles and six extracted capabilities from the smallest cluster (bottom left quadrant), these three are; Energy Efficient Scheduling Method; Innovation Enterprise, Dynamic Capabilities, Option Thinking; Platform Management, Collaborative Capability & Sustainability Capability (see Table 3).

**Table 3 Cluster 3 Manufacturing Enterprise, Energy Utilization, Scheduling**

| Cluster Description | Authors | Emerging Capability Themes |
|---|---|---|
| Manufacturing Enterprise, Energy Utilization, Scheduling | (Zhou & Shen, 2018), (Boscoianu et al., 2018), (Wei et al., 2020) | Energy-Efficient Scheduling Method; Innovation Enterprise, Dynamic Capabilities, Option Thinking; Platform Management, Collaborative Capability & Sustainability Capability. |

These capability themes are understandable in Sustainable manufacturing settings, where energy efficiencies play essential roles.

The last cluster (top left quadrant), consists of 20 articles that generate about 35 capabilities. These capabilities are mostly related to stakeholder management, manufacturing technologies, and sustainable supply chain implementation (see Table 4).

In manufacturing companies, where the use of capital is intensive, stakeholder orchestration becomes central. They have the resources and capabilities to manage their stakeholder. Instead of carefully managing their resources and growth, the capabilities collected for these clusters tend to create a barrier for their competitor and are capital intensive (Aboelmaged, 2018; Li et al., 2020).

**Table 4 Cluster 4 Sustainable Development, Manufacture & Competition**

| Cluster Description | Authors | Emerging Themes |
|---|---|---|
| Sustainable Development, Manufacture & Competition | (Johnson, 2017), (Ghadge et al., 2017), (Shirazi, 2018), (Annunziata et al., 2018), (Joo et al., 2018), (Singla et al., 2018), (Aboelmaged, 2018), (Khurana et al., 2019) (Ukko et al., 2019), (Li et al., 2020), (Zhang et al., 2020), (Rodríguez-García et al., 2020), (Ghobakhloo & Fathi, 2020), (El Hilali et al., 2020), (Tong et al., 2020), (Isensee et al., 2020), (Wan et al., 2021), (Knizkov & Arlinghaus, 2021), (Amendolagine et al., 2021), (van der Waal et al., 2021). | Shared Core Values, Leadership, Knowledge Management (Acquisition & Development); Green Practices, Orchestration; Networked Enterprise, Distributed Service-Oriented; Collaboration, Innovation Firm, Motivation; Stakeholder Management, Technological Innovation, Internationalization; Sustainable Supply Chain; Environmental Pressure Awareness From Stakeholders, Management Support & Engagement Of Employees; Collaboration Capabilities; Managerial Capabilities, Sustainability Strategies, Financial Management; Government Stakeholder Management, CSR; Government Support Management; Cost Strategy; Lean Digitized Manufacturing; Customer-Centric, Customer Experiences, Data Analytics, Digitalization; Sustainable Supplier Evaluation Technology; Org Culture (Strategic Orientation, Internal Capabilities, Management, and Attitudes) Digitalization; Sustainable Supply Chain Assessment; Frugal Process; Attracting FDI; Green Patents Managements. |

These capabilities lists show that research on organizational capabilities is truly dispersed and highly specialized. These findings encourage us to propose a way to generalize these more than sixties capabilities by categorizing them into higher orders definitions. The author revisits SDE and organizational capabilities definition to present categorization criteria, which will act as the aggregated themes of organizational capabilities.

Successful sustainability-driven enterprises are notable for simultaneously meeting competing environmental, social, ethical, and economic objectives. Moreover, Hestad et al., 2021 identify the characteristics of SDE, which applies their business principles to solve social and environmental problems in transformative and systemic ways, as shown in Table 5. Furthermore, SDE is also intended to impact multigenerational and global socio-ecological systems. This condition requires alternative organizational capabilities that differ from conventional enterprises that focus primarily on internal economic impact and short-term financial benefits.

**Table 5 Sustainability Driven Enterprise Characteristics, adapted from (Hestad et al., 2021)**

| Sustainability-Driven Enterprise | |
|---|---|
| Definition | An organization that applies business principles to solve social and environmental problems |
| Wealth Distribution | Shareholder and/or stakeholder |
| Predominant Organizational Form | Non-profit or profit |
| Primary Logic | Holistic/net positive sustainability |
| Tension | Between all three logics (social, environmental, commercial) |
| Scale and Time Considered | Future generations and the global socio-ecological system |
| Intended Impact | Transformative/systems change |

Previous researchers provide initial design principles to design such organizations capable of those abovementioned (Parrish, 2010). Such as follows:

1. The sustainability-driven enterprise has Values and Motives beyond profit-seeking
2. They should also have the expertise & competence to balance benefit self, others, and nature;
3. Generative organizational design is required to cope with sustainable entrepreneurship's creative and dynamic character.
4. Furthermore, they also can implement alignment of conventional Business Practice & Sustainability Domain Expertise

These design principles provide us with initial design guiding principles of SDE (Parrish, 2010; Bocken et al., 2015; Evans et al., 2017; Criado-Gomis et al., 2017; Pedersen et al., 2018). Furthermore, this research will see opportunities to synthesize the design principles with previous capability themes to identify how to build SDE organizations.

To respond to the rapid environmental changes every enterprise faces, Leaders require new organizational mindsets. They should learn the skills of creating a strategic and organizational capability that can encounter those turbulences. Organizations need the strategic capability to adapt to changing environments.

To enhance the strategic capability, leaders should dedicate more management attention to; 1. identifying and understanding their customer, supplier, demographic and technological trends, 2. developing adaptive and flexible organizational practices; 3. defining a vision that directs their firm; and 4. encouraging a strategic synergy between their internal organization and its external stakeholders by involving the stakeholders in their organization practices. These organizational capabilities will help employees, systems, and processes within the firm respond to external pressures (Ulrich & Wiersema, 1989).

The organizational capability was initially intended to become a source of sustainable competitive advantage. However, to some extent, the existing organizational capability is vulnerable to threats of erosion, substitution, and above all, being superseded by a higher-order capability of the 'learning to learn' variety.

This notion means that building a sustainable competitive advantage is context-dependent and a continuous process (Collis, 1994). The unstable market conditions mainly cause this constant innovation process and increasing intensity and diversity of competition.

These have resulted in organizational capabilities becoming the primary basis for establishing long-term strategies. The most crucial resource of the firm is knowledge, which resides in a specialized form among organizational members. The essence of organizational capability is in integrating individuals' specialized knowledge. So to create organizational capability is, to incorporate the knowledge within the organization. The challenges are creating the "dynamic" and "flexible-response capabilities" deemed critical to success in hypercompetitive markets (Grant, 1996).

From revisiting both definiton of SDE and Organizational Capabilities, this research have synthesized categorizing criterias, the author proposes these criteria as selecting categorization for the capabilities identified from the previous literature. These criterias are; Core Values & Ideologies, Implementation, Dynamism, Generativity and Impact.

As the selecting categorization to define SDE critical capabilities, these criteria require addressing several issues to define the SDE Capabilities, as arranged in Table 6.

**Table 6 SDE Capabilities Categorizing Criteria**

| Values, Mindset, Logic | Culture or Value Implementation | Dynamism | Generativity | Impact |
|---|---|---|---|---|
| Distribute Wealth to shareholders and/or stakeholders | Applies Business Principles to Solve Social and Environmental Problems | It should be Creative and Dynamic | Considering Future Generations | Has socio-ecological impact |
| Has Holistic/Net Positive Sustainability Primary Logic | Has Profit or Non-Profit Organizational Form | Identify & Understand, Customer, Supplier, Demographic & Technological Trends | Has Generative Organizational Design | Has Transformative/ Systemic Change Impact |
| Has Values & Motives Beyond Profit Seeking | Should Manage TBL Tension | Adaptive & Flexible Organizational Practice | Leaders have a new Organizational Mindset | |
| | Has Expertise & Competence to Balance benefits of TBL | Identify & Understand, Customer, Supplier, Demographic & Technological Trends | Encouraging strategic synergy between internal and external stakeholders by involving stakeholders in their organization practices | |
| | Has Entrepreneurial & Business Practice Competence | Dynamic & Flexible-responsive Capabilities | continuous & context dependent innovation (domain Expertise) | |
| | | | Building long term strategies | |
| | | Could Implement Alignment of Business Practice And Sustainability Expertise | Collective & Integrated Knowledge Management | |

The previous study it is indicated at least five issues that an SDE should address; 1. their organizational values & logic that become the basis for their activities, 2. The way they implement the values and logic into daily business, 3. The flexibility and dynamics of business practice, 4. Emphasizing the generativity that is related

to long-term growth, 5. Global-Socio-Ecological Transformative Impact.The author proposes these emerging capabilities categorized by an SDE Organization Capabilities criteria by those criteria.

This study found out that an SDE requires to have strong core values, which are; "Entrepreneurial Orientation" and "Motivation" These are the core values of the SDE organizational activities shown in Table 7.

**Table 7 Proposed Core Values Capabilities**

| 1st Order Themes | 2nd Order Themes | Aggregated Themes |
|---|---|---|
| Shared Core Values | Core Values | Core Values & Ideologies |
| Entrepreneurial Orientation | Entrepreneurial Orientation | |
| Proactive Environmental Behavior & Strategy | | |
| Core Values & Motivation | Motivation | |
| Motivation | | |
| Motivation | | |

These core values should be embodied within the organization's culture & practices. The embodied culture implemented within "commitment", "Strategic Orientation" and "Implemented Values" based upon the core values, as explained in Table 8.

**Table 8 Proposed Culture Capabilities**

| 1st Order Themes | 2nd Order Themes | Aggregated Themes |
|---|---|---|
| Collaboration Culture & Commitment | Commitment | Culture |
| Collaboration Culture & Commitment | | |
| Org Culture (Strategic Orientation | Orientation | |
| Corporate Culture | Implemented Values | |

SDE needs capabilities to sense, seize the opportunities, and transform themselves to stay relevant in the market, competitive, and economically viable. These capabilities are "Dynamism" shown in Table 9.

**Table 9 Proposed Dynamism Capabilities**

| 1st Order Themes | 2nd Order Themes | Aggregated Themes |
|---|---|---|
| Internal Capabilities | Business Governance | Dynamism |
| Green Patents Managements | | |
| Management Support | | |
| Engagement Of Employees | | |
| Managerial Capabilities | | |
| Cost Strategy | | |
| Customer Experiences | | |
| Management | | |

| | |
|---|---|
| Financial Management | |
| Sustainability Strategies | |
| Green Practices | |
| Internal Financing | |
| Internal Management Relation | |
| Standard & Certification Compliance | |
| Certification Compliance | |
| Integrate & Investment | |
| Cut Resource Usage | |
| Employee Relation | |
| Circular Economy Implementation | |
| CSR | |
| Lean Practice | |
| Resource Sharing | |
| Quality Training | |
| First Order Capability | |
| human capital investments | |
| Sustainability Risk Reducing Capabilities | |
| Entrepreneurial Capabilities | |
| Energy-Efficient Scheduling Method | |
| Conquer Niche Market | |
| Rapid Decision Making | |
| Organizational Routines | |
| Speed | |
| Technological Innovation | Technologies |
| Green Innovative Strategy | |
| Lean Digitized Manufacturing | |
| Digitalization | |
| Digitalization | |
| Data Analytics | |
| Big Data & Predictive Analysis | |
| ICT | |
| Cloud Computing | |
| Sustainability Capability | |
| Technological Expertise | |
| Technological Capabilities | |

The research introduce the "Generativity" shown in Table 10.

**Table 10 Proposed Generativity Capabilities**

| 1st Order Themes | 2nd Order Themes | Aggregated Themes |
|---|---|---|
| Innovation | Innovation | Generativity |
| Sustainable Oriented Innovation dynamics | | |
| Sustainability Innovation | | |
| Sustainability Innovation | | |
| Sustainable Business Model Innovation | | |
| Innovation | | |
| Sustainability Oriented Innovation | | |
| Eco Innovation | | |
| Innovation Enterprise | | |
| Innovation Firm | | |
| Resource & Capabilities Development | | |
| Specific Growth Management | | |
| Solve Complex Problem and Gain Social Legitimacy | | |
| Second Order Capability | | |
| Resource Slack Concern | | |
| Traditional Mindset | | |
| Intuition | | |
| Frugal Process | | |
| Option Thinking | | |
| Problem Reframing | | |
| innovative mindsets | | |
| Boundary Spanning (Setting Context) | | |
| Orchestrating Ecosystem Innovation | Stakeholder Orchestration | |
| Supply Chain Sustainability | | |
| External Integration Capabilities | | |
| Cooperative Resilience | | |
| Government Stakeholder Management | | |
| Government Support Management | | |
| Collaboration Capabilities | | |
| Sustainable Supplier Evaluation Technology | | |
| Sustainable Supply Chain Assessment | | |
| Networked Enterprise | | |
| Stakeholder Management | | |
| Environmental Pressure Awareness From Stakeholders | | |

| | |
|---|---|
| Green Purchasing Capabilities | |
| Distributed Manufacturing | |
| Green Supply Chain | |
| Collaborative Capability | |
| Orchestration | |
| Distributed Service Oriented | |
| Networking | |
| Collaboration | |
| Internationalization | |
| Sustainable Supply Chain | |
| Internationalization | |
| Tech Sourcing | |
| Sustainable Supply Chain | |
| Local Contextualization | |
| International Ambidexterity Strategy | |
| Mobilize Resources | |
| Stakeholder Engagement | |
| Attracting FDI | |
| Platform Management | |
| Partnership | |
| Financial Sourcing | |
| External Stakeholder Engagement | |
| Access to Expertise | |
| Access To Knowledge Network | |
| Sustainable Procurement | |
| Collaboration Strategy | |
| participation | |
| Social Capital | |
| Economic Sustainability Capabilities | Domain Expertise |
| Corporate Environmental Capabilities | |
| Environmental Sustainability | |
| Social Sustainability Capabilities | |
| Sustainability Oriented Strategy | |
| Knowledge Management (Acquisition & Development) | Leadership |
| Leadership | |
| Learning Capabilities | |
| Leadership | |
| (Future Orientation) | |
| Leadership | |

Generativity is required to manage the multigenerational aspects of SDE. And these are the proposed "Impact" that provided by the SDE shown in Table 11.

**Table 11 "Impact" that provided by the SDE**

| 1st Order Themes | 2nd Order Themes | Aggregated Themes |
|---|---|---|
| Long Term Impact | Future Impact | Impact |
| Social Impact Forecasting | Impact Forecast | |

## CONCLUSION

After examining more than one hundred papers on SDE Organizational Capabilities from 2015 until 2021, we identify that the previous research is either specialized in certain parts of management practices or on a specific domain of the TBL. This confirmed that the previous study is vastly dispersed and makes the generalization of common capabilities of SDE difficult. One of the pieces of evidence it is difficult to generalize is that bibliometric analysis failed to create the most meaningful insight into the "proper" categorization of SDE organizational capabilities. Therefore, in this study, we proposed to develop a "categorizing criteria" provided by the definition of sustainability-driven enterprise and it's organizational design criteria, which are enriched by the description of organizational capabilities. These categorizing criteria manage to define five capability themes: core values, culture, dynamism, generativity, and impact. These five could become starting points to identify additional capabilities and categories in future research. The author is aware that this is an initial effort to develop a more robust definition of SDE Organizational Capabilities. For further research, it is encouraged to identify the empirical connection between these capabilities. For example, empirical research could also place the essential capabilities or determine which capabilities are the earliest to be prepared by managers.

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