



The Trifecta of Sustainable Entrepreneurship: A Systematic Literature Review Study

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Abstract

Several publications approach the subjects of sustainable entrepreneurship (SE). This study aims to explore the body of literature between 2017-2022 on sustainable entrepreneurship that is still evolving. Besides that, it aims to establish the research gaps and future research agenda to support the scholarly investigation of the subject matter.

This study uses a systematic literature review as a scientific inquiry to uncover the richness and establish holistic perspectives on the sustainable entrepreneurship knowledge domain. This study results from 1,659 articles through Emerald and Scopus academic databases, supplemented with the Google Scholar search engine. Through the comprehensive inclusion and exclusion process with PRISMA 2000, only 42 documents were selected for the synthesis study.

There are three critical findings uncovered. Firstly, discover Macro-Meso-Micro dimension's underpinnings theory as the foundation to look at the holistic subject matter of sustainable entrepreneurship. Secondly, with the synthesis of 42 articles, eight thematic surfaced. Third is identifying a new emerging conceptual framework to understand sustainable entrepreneurship and its correlational impact within the Macro-Meso-Micro dimension. However, the proposed multiple research gaps and future agenda are within the emerging theme of sustainable entrepreneurship. It is a field that involves qualitative and quantitative inquiry, and it will bring new knowledge for academic development and support practitioner thirst to embrace sustainable entrepreneurship.

Keywords: Sustainable Entrepreneurship, Sustainable Business Model, Systematic Literature Review, Funding, Venturing

INTRODUCTION

According to Barringer (2019), the term "entrepreneur" comes from the French words *entre* (between) and *partake* (to take). It generally refers to an individual that undertakes a new venture. It is complex to assemble resources such as capital, people, business model, and Strategy and take a calculated risk to attain a profitable outcome. Meanwhile, entrepreneurship is the practice of innovative capabilities and management capacity to develop a unique offering that fits the market needs. It is an innovative and creative endeavor to have the unique ability to transform ideas into an offering that generates lasting values.

Nguyen et al. (2020) espouse that "sustainable entrepreneurship" (SE) is an emerging discipline that garners researcher and practitioner attention. It is a symbiosis of sustainability and entrepreneurship, emphasizing long-term existence instead of short-term profit orientation. After the 2008 (sub-prime crisis), priorities for tomorrow's generation were generally reset without sacrificing critical resources like ecology, natural resources, and invested interest in human values. It demands a striking balance on the three essential objectives for humanity's future growth:

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society/ethics, economics, and ecology referred to as "the triple bottom line."

Johnson and Schaltegger (2019) reinforce that research attention revolves around environmental, social, and enterprising ventures, which tap into the opportunities from market gaps and technological advancements such as cleantech, net-zero technology integration, and waste management approaches. Moya-Clemente and Ribes-Giner (2021) investigated the development of innovation challenges and entrepreneurial capacities through renewed business models to deliver sustainable solutions to their nations and the global marketplace. Terán-Yépez et al. (2020) justify the emergence of SE primarily responding to on-UN calls for participation in SDG 17 Goals with the 2030 development plan in mind. Enterprises, investors, universities, activists, nations, and institutions worked towards a common goal to combat climate change, social issues, and economic revival through multiple sectors, e.g., Agriculture, technology, finance, property, etc.

Overall there are three competing schools of thought toward SE, Raimundo et al. (2022) stress that SE is driven to address environmental, social, and economic impact. Meanwhile, Cardella et al. (2021) and Garc et al. (2021) argue that SE extends social entrepreneurship with multidisciplinary attributes and aims to deliver social innovation impact. Thananusak (2019) suggests that SE is a symbiosis of ecopreneurship and social entrepreneurship, emphasizing environmental concerns such as Green House Gas (GHG) impact. Konys (2022) SE momentum is influenced by the attention toward UNSDGs 17 goals that propel sustainable entrepreneurial strategies adoption.

There are, overall, four critical questions arising. Firstly, in recognizing that SE is an emerging domain area, what macro-level key factors drive this evolution? Secondly, how does Meso-level play significant roles in affecting SE outcomes? The third is to understand the factors that drive SE at their Micro-Level, and lastly, to have a holistic view in addressing the SE discipline.

This research aims to explore the body of literature on SE between 2017-2022 and uncover the debates taking place within this knowledge domain that is still evolving. Hence, the study uses a systematic literature review as a scientific inquiry to uncover the richness and establish a holistic perspective on the SE knowledge domain.

The study follows the PRISMA 2000 protocol to analyze 1,659 articles from Emerald, Scopus, and Google Scholar databases. From this, 42 articles are chosen for synthesis. The study aims to identify the Macro-Meso-Micro dimension's underpinning theory as the foundation for looking at the holistic subject matter of Sustainable Entrepreneurship. It also aims to uncover the different perspectives and competing schools of thought toward Sustainable Entrepreneurship to establish the research gap and future research agenda to support the scholarly investigation on the subject matter. Ultimately, this study aims to provide direction for future research to promote Sustainable Entrepreneurship, a discipline that garners researcher and practitioner attention in contemporary times.

THEORETICAL BACKGROUND

Johnson and Schaltegger (2019) highlighted a SE Trifecta framework view with Micro-level (entrepreneur and organizational forces), Meso-level (industry, technology, market, and education forces), and Macro-level (global and institutional forces). The trifecta forces coincide with "multilevel causal mechanism factors." We witness the interplay forces of situational mechanism come from the macro-level has a direct correlation impact on SE at the Micro.

The action-formation mechanism occurs between Meso-level and Micro-level, propelling SE ventures to organize themselves to create values to match the sustainability demand from the marketplace. Lastly, the interplay of transformational mechanisms occurred between micro and macro levels and generated a complete circular flow of causal mechanisms on the trifecta level (Macro-Meso-Micro) (Johnson & Schaltegger, 2019; Sinkovics et al., 2021).

METHODOLOGY: SYSTEMATIC LITERATURE REVIEW

Stephan and Drencheva (2017) highlighted the reason for performing a systematic literature review (SLR). One of the more profound reasons is the rigorous process that can support quality analysis with objective evidence gathering. It is a transparent process with a step-by-step structure that is easy to follow. Ideal for performing preliminary hypothesis testing by scanning the body of literature. Siddaway et al. (2019) concurred that SLR is a replicable methodology that can filter document types and evidence quality aligned to the directed questions. Another notable

contribution of SLR is to help researchers avoid duplication of effort.

Siddaway et al. (2019) stress that the advantage of SLR is to capture the body of literature performed by a cluster of authors instead of a single study. The structure and systematic process are ideal for synthesizing complex analyses, which can transform into a manageable discussion with interrelated themes and patterns. It allows the researcher to have a macro perspective on the subject matter and fit it together like a jigsaw puzzle.

Siddaway et al. (2019) argue that novice researchers then fall into the trap of summarizing all the learning they capture; the SLR approaches help them establish critical evaluation and integrate their findings coherently by removing unnecessary studies and irrelevant information about the subject matter.

Fisch and Block (2018) espouse that SLR processes empower researchers to quickly assess whether a topic warrants further study by having a complete view through the collection of studies. Diving deep into the synthesis of the studies helps establish gaps, variables, research methods, and issues the scholarly communities face on the subject. It is ideal for supporting graduate students in mapping and navigating the challenges of their thesis study. It has both the elements of breadth and depth to make the investigation worthwhile.

Xiao and Watson (2019) reminded us that researchers must assess research protocol before diving into the working process. PRISMA 2000 (Appendix A) protocol uses three steps to replicate efficiently. This protocol covers the purpose of the study. These research questions are tied to the keyword design and establishing the search strategy. The second phase consists of inclusion and exclusion criteria, availability of the study, and quality assessment via the document titles and abstract. The final stage is selecting the studies to perform details analysis and synthesis.

The keywords "Sustainability Entrepreneurship, Sustainability Venture, Sustainability Start-up, and Green Entrepreneurship" use to perform this paper's initial search. Two academic databases use to extract academic peer-review papers (Emerald management and Scopus) and a supplement with Google Scholar to overcome the possibility of "Type 1 Error," which is not available in the mainstream academic databases.

The initial search generated 1,659 documents; 470 documents were excluded due to non-English content, duplicated records, non-peer review papers, and the application of a year limit from 2017 to 2022. A total of 1,189 articles includes at the screening stage (Table 1).

Further inclusion and exclusion were applied. The first exclusion process removed 1,003 documents due to irrelevant keywords to the title and attained 186 papers. The second exclusion process is filtering the abstract; this yields 109 copies, with 77 removed. The final exclusion process is to check the availability of full access paper, which see that 67 documents are inaccessible and with the final result of 42 documents.

Table 1 - Inclusion and Exclusion Decision

Process & Decision	Emerald Management	Scopus	Google Scholar	Total
Search Result	643	809	207	1,659
Screen & Removed (Limit to 2017-2022)	(178)	(197)	(86)	(461)
Screen & Removed (English Only, Duplicates & Non-Peer Review)	-	(1)	(8)	(9)
Total @ Identification Stage	465	611	113	1,189
Exclude (Title Without Keywords)	(430)	(539)	(34)	(1,003)
Sub-Total @ Sub-Screening Stage	35	72	79	186
Exclude (Abstract Irrelevancy)	(19)	(22)	(36)	(77)
Sub-Total @ Sub-Screening Stage	16	50	43	109
Exclude (No Full Access Paper)	(8)	(36)	(23)	(67)
Total @ Screening Stage	8	14	20	42
Inclusion Stage (Relevance to Hypothesis)				42

Note: Researcher Analysis

In checking quality, the abstract and content confirm their relevance to the hypothesis for the study. The author decided to retain all 42 documents for complete synthesis study and reporting, as the papers demonstrate direct and indirect relevance to content development. There are 1,659 documents based on the search result combining two academic databases and the Google Scholar search engine. Only 42 documents, or 2.5%, were captured during the filtering process for the synthesis and analysis study, and 186 documents were peer-reviewed. In the quality assessment of the journal studies and correlations to the hypothesis (essential questions), the author has uncovered eight (8) themes (Table 2).

Table 2 - Emerging SE Themes from 42 Studies

No	Themes	Discussion & Focus	Authors	Documents Quantity
1	Review (Macro-Level)	Comprehensive reviews studies with broad and depth studies on SE, setting the foundation for the body of knowledge	Eduardo Terán-Yépez, Gema María Marín-Carrillo, María del Pilar Casado-Belmonte, 2020; Johnson & Schaltegger, 2019; Moya-clemente & Ribes-giner, 2021; Piwowar-sulej & Kwil, 2021	4
2	Orientation and Ecosystem (Meso-Level)	The cluster of studies that investigate the external orientation and ecosystem of SE	Amankwah-Amoah et al., 2019; Bischoff & Volkmann, 2018; del Mar Alonso-Almeida & Alvarez-Gil, 2018; Dinara Kalmakova, Yuriy Bilan, 2021; Gast et al., 2017; Gelsefid-Alavi et al., 2021; Haldar, 2019; Iqbal et al., 2020; Pankov et al., 2021; Soo Sung & Park, 2018; Townsend & Coroama, 2018	11
3	Education Development (Meso-Level)	Investigative paper on the practices and development of SE education at the tertiary level	Geier et al., 2018; Hermann, R. R. & Bossle, 2020; Hermann & Bossle, 2018; Nave & Franco, 2019	4
4	Business Model (Micro-Level)	In-depth review and discussion on business models types, adoption, and challenges	Franceschelli et al., 2018; Geissdoerfer et al., 2018; Jargalsaikhan et al., 2019; Jing, 2020; Nosratabadi et al., 2019; Pinto et al., 2019; Pizzi & Corbo, 2020; Sinkovics et al., 2021; Trapp & Kanbach, 2021	8
5	Funding and Venturing (Micro-Level)	Identify funding sources and venturing Strategy, also explore joint-venture approaches	Antarciuc & Zhu, 2018; Bento et al., 2019; Ginsberg & Marcus, 2018; Liu & Jiang, 2019, Prat, 2020; Stefan Schaltegger, 2018	6
6	Individual and Community (Micro-Level)	Explore discussion in understanding the individual and community perspective for SE	Kimuli et al., 2020; Siqueira & Honig, 2019; Soomro et al., 2020; Stephan & Drencheva, 2017; Vuorio, 2017	5
7	Organizational (Micro-Level)	Explorative studies in SE adoption within a corporate environment to identify factors that enhance the practices	Mäkitie, 2019; Suriyankietkaew, 2019	2
8	Competencies and Performance (Micro-Level)	Topical review in studying the connection of competencies and Performance for SE practices	Diepolder & Weitzel, 2021; Hirunyawipada & Pan, 2020	2

Note: Research's Analysis

LITERATURE REVIEW**MACRO-LEVEL**

Four groups of researchers perform a review on SE that establishes the foundation for the discipline epistemology. Johnson and Schaltegger (2019) articulate that SE is multidisciplinary that infused social, environmental, and economic factors as the key drivers for the market, societal and entrepreneurial transformations. Piwowar-sulej and Kwil (2021) share a SE from the environmental dimension. Furthermore, "ecopreneurship" and environmental entrepreneurship are catalysts for solving environmental issues. Moya-clemente and Ribes-giner (2021) concur that SE has gained attention since 2016 with the UN's SDGs Goals (Global Institutional influence). Terán-Yépez et al. (2020) reinforce that SE is not merely attaining environmental impact; it has delivered economic benefits to entrepreneurs, nations, and global performance. Hence, this reaffirms that SE is not solely about profit generation; it can deliver Environmental, Social, and Economic values.

This observation confirms that a green supply chain (Oliveira et al., 2018), sustainable circular economy (Suchek et al., 2022), and green innovation (Melander & Arvidsson, 2022) are emerging forces that are pushing for SE concentration (Mio et al., 2020) and as a strategic option in China and Europe marketplace (Merli et al., 2018). Fernandes et al. (2023) articulate that SE opportunities can leverage digital technologies to deliver innovative and transformational impact by aligning strategy and business models to deliver the SDG agenda.

MESO-LEVEL

Orientation and Ecosystem

Before Sustainable Entrepreneurship (SE) emerged, multiple researchers introduced green entrepreneurship, ecopreneurship, environmental entrepreneurship, and environmental entrepreneurship. The researcher has not disagreed with using the term; based on the literature's discussion, there is a common goal in delivering sustainability and environmental impact through entrepreneurial effort. All researchers coincidentally have directed their investigation to the Trifecta attributes of Macro-Meso-Micro. The purpose of SE is to deliver environmental, societal, and economic impact that has a combined effect on sustainability in nature through innovative initiatives, whether disruptive or evolutionary at Macro-level (Amankwah-Amoah et al., 2019; Alonso-Almeida and Alvarez-Gil, 2018; Gast et al., 2017; Haldar, 2019).

Meanwhile, the Meso-Level that explores the correlation between entrepreneurship orientation (EO) has uncovered that environmental sustainability orientation (ESO) becomes the mediating factor. At this level, stakeholder support (consumer, activist, investor, regulator, global institution, and media) has the profound impetus for SE initiation, reinforcing their confidence to participate in the sustainability endeavor. Unlike traditionally, engaging in the ESO initiative will negatively impact the bottom line, and Cleantech and information technology advancements reduce the cost of commercializing sustainable solutions and products. With funding availability through equity or debt, access to capital has become an excellent driver to migrate to SE from conventional entrepreneurship. Another stance is that SE that incorporates a circular economy have embraced their ability to reduce waste and ensure their action is aligned with sustainability (Bischoff & Volkmann, 2018; Haldar, 2019; Iqbal et al., 2020; Pankov et al., 2021; Soo Sung & Park, 2018; Townsend & Coroama, 2018).

Chatzinikolaou et al. (2020) reinforce that SE growth largely influences socio-economic systems with national policies as the driving forces. Incorporating the "macro-meso-micro" mechanism perspectives (Haynes & Alemna, 2022) is not just limited to developed economies. Even emerging market can customize their ecosystem with this narrative to guide SE growth potential (Inkizhinov et al., 2019).

The right supporting ecosystem will assist more entrepreneurs in participating as SE players at the Micro-level; best practices are gradually surfacing with new research findings. Sustainable ventures have improved their ability on the go to market with complete innovation pathways similar to conventional processes but added sustainable products and solutions to solve environmental or social challenges. New emerging sustainable business incubators (SBI) begin to unfold. Are extended from technology-business incubators (TBI), where SE coached and nurtured to deliver their sustainable, innovative ideas to the marketplace (Amankwah-Amoah et al., 2019; Kalmakova and Bilan, 2021; Gast et al., 2017; Golsefid-Alavi et al., 2021; Pankov et al., 2021; Soo Sung & Park, 2018; Townsend & Coroama, 2018).

There are four significant Macro-level to SE development. Firstly, sustainability innovation delivers both environmental impact and tangible financial results. Secondly, developing nations such as India, Ghana, and Pakistan have benefited immensely from sustainability values creations. The evidence is clear from Pakistan, where a "1% increase per capital income" contributes to a 2.88% pollution level, when the extension over some time, it continues to capture a significant 4.54%" through a U-shape Kuznets study. Third, SE that wants to attain good support must work with their national government and raise awareness of the benefits of sustainable programs. Fourth, the SE orientation as a knowledge domain lacks sufficient theocratical and empirical research to support scholar and practitioner decision-making (Amankwah-Amoah et al., 2019; Alonso-Almeida & Alvarez-Gil, 2018; Golsefid-Alavi et al., 2021; Haldar, 2019).

The external driver will propel SE to align its strategy and operation efficiency to deliver

sustainability values at the Meso-level. Positive SE orientation will inspire SE's high performance, primarily when a cordial and robust stakeholder relationship occurs. However, over-extended industrial production might contribute to high energy usage and other environmental impact, so SE that adopts a circular economy process will help contain it. Hence this calls for further sustainable, innovative research and development, especially in the areas of scientific solutions or products that can assist in the fight to attain the NetZero agenda (Amankwah-Amoah et al., 2019; Bischoff & Volkmann, 2018; Kalmakova & Bilan, 2021; Gast et al., 2017; Iqbal et al., 2020; Pankov et al., 2021; Soo Sung & Park, 2018; Townsend & Coroama, 2018).

Would participating in SE ventures require high capital investment? This Micro-level perspective affirms that sustainability ventures do not require high capital injections. However, it does require sufficient sustainability knowledge and opportunity scanning capability by SE. There is a correlation between SE management and marketing competency in high SE performance. Positive SE orientation (both Micro Size and SME) will lead to SE venture success, especially for developing nations that simultaneously witness saving, earning, and environmental betterment (Amankwah-Amoah et al., 2019; Alonso-Almeida & Alvarez-Gil, 2018; Pankov et al., 2021).

Education Development

Nave and Franco (2019) investigate the collaboration between the university and entrepreneurial firms in understanding the strategic support for both entities in pursuit of sustainability best practices beneficial for businesses and academia. Meanwhile, Hermann and Bossle (2018) study the convergence of entrepreneurship and sustainability education by performing a benchmarking survey on education institutions. However, to establish best practices in introducing sustainability-oriented content, uncover the challenge in curriculum development to incorporate entrepreneurial skills and sustainability knowledge.

Hermann and Bossle (2020) further extend their research on the interdisciplinarity of sustainability education and entrepreneurial skills development. However, they discover gaps in integrating both competencies in practices within the business context. Geier et al. (2018) stress the importance of universities in preparing graduates to evolve into SE roles with the heightened pressure from the UN and government in dealing with climate change, environmental erosion, and lack of social development for their population. All studies focus on higher-level education program development with comprehensive internal and external relationship exploration. Systemic thinking has been adopted as the macro level perspectives in supporting SE development, lacking on individual competency and psychosocial dimension investigation.

Nave and Franco (2019) affirm that the university-SE firm partnership will lead to knowledge creation and enhancement of SE firm product improvement with tangible financial outcomes by adopting sustainability best practices. Hermann and Bossle (2018) stress that SE-oriented education would require a systematic approach to integrating real-life simulation in the classroom, best if the student launches a sustainable venture or creates a sustainable product. The findings support the organization's sustainability transformation program and experienced professionals exploring the SE pathway.

Hermann and Bossle (2020) reinforce that SE education development would incorporate multidisciplinary syllabus-content customization, induce active-learning participation, and involves external or industry collaboration. The sustainability-centric objectives drawn from SDG's 17 goals can guide the transformation of student-centric knowledge, skills, and attitude toward SE competency building.

Geier et al. (2018) uncovered that universities and industries collaborate and support each other on the sustainability journey. However, research on SE is lagging due to multidisciplinary challenges. Universities and industries play a pivotal role in developing SE as a discipline and disseminating industry best practices to enhance SE performance and support their global and national agendas. Institutional support and public funding can empower universities to become the catalyst of the SE ecosystem. Thomassen et al. (2020) emphasize that entrepreneurship education is highly contextual that intertwines with mechanism attributes (Micro, meso, and macro). Hence, it is a fluid social process embedded in education institutions and the marketplace (Montes-martínez & Ramírez-Montoya, 2021).

MICRO-LEVEL**Sustainable Business Model**

Sustainable Business Model (SBM) is a source of competitive development and risky simultaneously. Success comes from being resilient to external forces; failure occurs when an organization cannot cope with dynamic external changes (Franceschelli et al., 2018; Geissdoerfer et al., 2018; Nosratabadi et al., 2019; Sinkovics et al., 2021). Trapp and Kanbach (2021) and Sinkovics et al. (2021) concur on the impact of SBM but reveal that aim is to align the internal value chain in order to create and capture new values which support a resource-based view (RBV). The external forces that shape the sustainability business ecosystem are VUCA and PESTLE with global dynamic changes, e.g., Geopolitics Climate Change Impact (Chang, 2020; Nosratabadi et al., 2019; Trapp & Kanbach, 2021).

Nosratabadi et al. (2019) articulate that SMB success is highly contextual and requires bespoke customization to fit into every industry vertical with Organizational Industry (OI) lenses. For example, Pizzi and Corbo (2020) see that the Industry 4.0 revolution has forced the organization to embark on a rapid operation excellence journey and adopt the sustainability mindset as part of its SMB transformation. Lobosco et al. (2019) highlighted that Technology business incubators (TBIs) played a pivotal role in enhancing SMBs to deliver organizational efficiency and value generation. It is highly beneficial with states and nations sponsoring the advancement of TBI, which eventually leads to unicorn ventures that bring breakthrough economic values.

Franceschelli et al. (2018) finding is to extend Osterwalder's Business Model Canvas (BMC) framework to incorporate the sustainability dimension with contextual customization. Trapp and Kanbach (2021) amplify the findings of green technology business models with twelve unique attributes. It uncovered two prominent patterns, a sustainable business model (SMB) and a technological entrepreneurial model (TEM) that support sustainable value creation.

Nosratabadi et al. (2019) established the taxonomy for SMB with a mix of industry verticals (energy, fashion, healthcare, agri-food, engineering, construction, and real estate, mobility and transportation, and hospitality), contextual construct (supply chain management, circular economy, and developing countries) and management values chain (innovation, management, marketing, entrepreneurship, and innovation). Geissdoerfer et al. (2018) take a different perspective in investigating SMB by identifying similarities and contracting points of view to establish a more robust definition and mapping the research gap with probable research questions to address the gap.

Sinkovics et al. (2021) introduced a refreshing perspective with the "Antecedents-Phenomenon-Consequence framework (APC)," which resulted from the SLR investigation, drawing from diverse attributes themes such as "pyramid, circular, lean, green, product-service system, social-networking and integrative." The APC framework has three core advantages: an innovative construct that delivers sustainable outcomes and an innovative system that can accommodate balancing external-internal recalibration. Lastly, it is an activities-process flow for innovative agenda that aligns with sustainability goals. The APC framework is similar to Johnson and Schaltegger's (2019) SE Trifecta framework, which emphasizes the Macro-Meso-Micro interrelationship as the central system to support the development of SE.

Pizzi and Corbo's (2020) findings have uncovered significant contributions to SE and SMB in the Fintech context. It confirms that Fintech ventures are not functioning in isolation. However, it is related to sustainability values. It is essential to meet societal community demand and succumbs to global intuitional pressures (SDGs). Intentionally to meet ESG investors' requirement for further capital injection and not ignore the circularity to meet environmental agenda. Chang's (2020) contribution to SMB theory development comes with an innovative lens that defines Business Model Innovation (BMI) with three (3) dimensions (societal, technological, and organizational) that shape the sustainability outcomes. Lobosco et al. (2019) uncovered that technology business incubators (TBI) have enhanced technology venture efficiency and performance, simultaneously delivering sustainability values. However, the case focuses mainly on the incubator business operation perspectives, lacking insight into sustainability businesses.

Funding and Venturing

Antarciuc and Zhu (2018) articulate that investing in sustainable projects will lead to significant development for environmental impact and financial return. Ginsberg and Marcus (2018) concur that the venture capitalist (VC) aim is brought a transformative change in the marketplace with an innovative sustainable solution by riding on the demand curve from the global market. However, investors and stakeholders expect VC accountability for the SE ventures' success with a targeted return, regardless of the high risk of such ventures.

Liu and Jiang (2019) argue that SE works closely with VC as their avenue for entrepreneurial finance, even at global scales. VCs are risk-averse due to the radical changes in sustainability technologies and regulatory dynamics. Their investment decisions govern the deliverables for ESG impact and handsome financial returns via IPO or sellout on their SE venture investment. Bento et al. (2019) contrast that not all SE ventures will be able to have access to VC funding or conventional banking facilities, a disadvantage when seeking funding from traditional. It signifies the rise of crowdfunding as the avenue for SE capital sourcing. Hence clear investable values and performance tracking can accelerate the VC's decision (Perechuda, 2022).

Schaltegger (2018) highlighted an emerging trend where SE are forming alliances to serve the marketplaces by combining their solutions or creating complementary sustainability products to serve the global market. It is in reaction to SDG's Goals, in which some alliances are cross-border collaborations. Prat (2020) espouses that those alliances can march forward in the form of Joint Venture (JV) collaborations, especially when two national SE have common share goals, even with the trend of SE from different nations forming JV to capture global opportunities. This evolution is a positive development where environmental challenges are on the rise, and not all nations have the scientific, capital and management resources to complete the sustainable innovative cycle.

Ginsberg and Marcus (2018) identify that VC decisions on clean energy are influenced by their investors and motivated by investment exit, e.g., IPO & Venture Equity Sellout. Bento et al. (2019) reveal that 70% of SE ventures on the Kickstarter platform continue to perform after one year of their inception. SE with a female co-founder attracts higher chances of getting funded or sponsored. Antarciuc and Zhu (2018) stress that VC abides with SDGs and ESG criteria to inform SE investment, especially ventures that demonstrate a deep understanding of a sustainable business model. Liu and Jiang, (2019) confirm that geographic distance did not significantly impact VC funding syndication; instead, the differences surface between local VCs and foreign VCs that only participate in less risky SE ventures.

Schaltegger (2018) unveils that collaboration happens across multi-dimensional attributes, from cross-solutions, cross-nations, cross-sector, cross-discipline, and different entrepreneurial types. Similar to the finding, Prat (2020) identifies three types of JV design (Private and Private JV, Public and Intra-company JV) that aim to deliver sustainable development, environmental sustainability, management sustainability, and product sustainability.

Individual and Community

SE as an individual, requires the ability and empathy to function within their community. Two strengths can draw from themselves: firstly, the ability to control their behavior with a moral compass and align with the sustainability agenda, and secondly, the ingenuity to unleash their full creativity and deliver sustainable innovation. SE must also be adaptable and lead a social movement to support sustainability outcomes; these unique personalities and traits are sometimes intact. At times this will require robust and diverse skill sets such as leadership, marketing, innovation, and people management to apply their ability to sustainability ideas manifestation (Kimuli et al., 2020; Siqueira & Honig, 2019; Stephan, U. & Drencheva, 2017).

In functioning with the community, SE must understand the green purchasing behavior evolving in their society to develop bespoke sustainability products to meet their community's desires. Of late, there has been an emerging trend that youth have decided on SE as their career choice. Especially those playing active sustainability activist roles at higher education institutions are ready to morph into sustainability entrepreneurial roles (Soomro et al., 2020; Vuorio, 2017).

There are five studies, of which four perform empirical surveys and a study using SLR. Stephan and Drencheva (2017) conducted an SLR study synthesizing 50 empirical studies. Kimuli et al. (2020) performed a quantitative empirical study on 384 SMEs, using linear regression and coefficients

statistical model to analyze the data. On the other hand, Soomro et al. (2020) investigated green purchasing consumers through Shah Abdul Latif University by conducting an empirical quantitative survey with 361 respondents' data. Vuorio (2017) performed an empirical study by accessing a dataset from the "World Value Survey and Global Entrepreneurship Monitor" comprising 29 countries with N = 129,543, 24,221 data points. Siqueira and Honig (2019) performed an empirical qualitative survey with semi-structured interviews to engage business founders to share their insights and experience towards sustainability businesses.

On SE's level, sustainability intention and ingenuity shape how they behave ethically to reflect their value system, actively curating sustainability knowledge and opportunities. It inspires SE to explore sustainability ventures by integrating skills and competencies accumulated during professional life. Undisputedly, SE personalities (traits, identities, skills, and motivation) play a pivotal role in taking on transformational leadership responsibility, such as championing sustainability causes through commercial entities aligned with their values and economic benefits. This phenomenon has also influenced the youth's intention to participate in SE venture creation, and especially there are aware of the environmental and social impact on their generation. Developing outreach and engagement with green consumers or sustainability-aware buyers will be advantageous for SE success (Kimuli et al., 2020; Siqueira & Honig, 2019; Soomro et al., 2020; Stephan, U. & Drencheva, 2017; Vuorio, 2017).

Organizational

Even for SE ventures, organizational operation, and capability will determine how well they perform in the marketplace. Fundamental managerial and leadership capacities still apply – motivating, inspiring, building trust, empowering, valuing people, and instilling a solid sustainability mindset would lead to better innovation and stakeholder cohesion. These activities will lead to financial outcomes and sustainable value creation (Suriyankietkaew, 2019).

Conventional organizations move into sustainability positions and ride on the wave of sustainability opportunities. It is even more prevalent when the organization has the capacities and resources to exploit sustainability ventures. For example, how three Norwegian Oil and Gas exploit their organization resources to invest in cleantech ventures. First, by understanding their technological know-how and redeploying financial and workforce capacities to manifest a new possibility (Mäkitie, 2019).

Both researchers agree that SE organizational success must draw from the resource-based view (RBV) dimension. Whether financial or sustainability values creation, performance results from careful resource deployment, which needs to be managed and led effectively. Optimization and alignment on staffing, technology know-how, process streamlining, adoption of best practices, and delivering sustainable, innovative solutions will happen with solid leadership foundations and internal financial sponsors. Not forgetting the ability to foster better working relationships with stakeholders, shareholders, activists, and regulators will position SE organizations in a positive light. Since the externality fills with VUCA surprises, the organization's ability to navigate and stay resilient while embarking sustainability venture or transition is undoubtedly a competitive attribute (Mäkitie, 2019; Suriyankietkaew, 2019).

Competencies and Performance

Sustainability innovative values creation is the outcome of people's effort in an organized manner through their competencies input, which ties closely to the efficacy level of SE effort. It is an ongoing transformative process that requires the integration of diverse skill sets, knowledge, attitude, and social networking. Whether from a new SE venture or an established conventional business, entrepreneurs (owners) and their employees must consider sustainability opportunities and align their internal operations. It sometimes calls for skills and knowledge upgrades, primarily regulatory and technological advancements that have shaped customer demands and deliverables. Also, pay close attention to environmental crises by adopting circular operational practices (Diepolder & Weitzel, 2021; Hirunyawipada & Pan, 2020).

It was clear through the educational development perspectives that competency is cultivated through guidance via education and training. However, there is a lack of significant evidence to prove that competencies strongly correlate to performance delivery. Nevertheless, both

researchers agree that integrating sustainability competency will help organizations prepare to encounter the sustainability pressure from their local regulation and global movement (Diepolder & Weitzel, 2021; Hirunyawipada & Pan, 2020).

FINDINGS AND DISCUSSIONS

MACRO-LEVEL

In the quest for robust evidence, Johnson and Schaltegger (2019) leverage SLR to study 375 articles that systematically establish the research domain, perform searches through academic databases, leverage exclusion and inclusion quality filtering process, curate the identity studies with data, and transform into synthesis analysis. At the same time, the other three (3) groups of researchers perform bibliometric research methods that synthesize 1,295 articles to establish their findings (Terán-Yépez et al., 2020; Moya-Clemente & Ribes-giner, 2021; Piwowar-sulej & Kwil, 2021). Terán-Yépez et al. (2020) take the study further by incorporating the NVivo process to decode the semantics and meaning of the articles.

The review paper established the need to further explore the related factors in the SE Trifecta framework. All paper investigates the trend and phenomenon with comparative study as the primary intervention approach. It is also advisable to perform a thematic study on SE interrelated areas, e.g., ecosystem, support studies, and geographical-centric papers emphasizing economic developmental status. Bibliometrics and SLR are good indicators of the quantitative establishment of the body of knowledge (seeing the forest). However, they can still not establish the relationship, interconnectedness, and level of causality with each other's (the trees) (Johnson and Schaltegger, 2019, Terán-Yépez et al., 2020; Moya-Clemente & Ribes-giner, 2021; Piwowar-sulej & Kwil, 2021).

MESO-LEVEL

Orientation and Ecosystem

Five researchers employ review methods to extrapolate the literature for investigation. Alonso-Almeida and Alvarez-Gil (2018) perform a narrative review. Meanwhile, Gast et al. (2017), Golefid-Alavi et al. (2021), Bischoff and Volkmann (2018), and Kalmakova and Bilan (2021) perform an intense SLR method. Two thousand eight hundred thirty articles were in the search, and 427 were for synthesis analysis after the exclusion and inclusion quality filtering.

Two researchers conducted the case studies method. Haldar (2019) performed an exploratory case study supported by empirical quantitative data collection on India's SE development. Meanwhile, Townsend and Coroama (2018) investigate the ICT impact on SE development. Four researchers conducted an empirical survey to support their investigation. Amankwah-Amoah et al. (2019) interviewed 242 entrepreneurs and uncovered that stakeholder integration and robust relationship help deliver high SE performance. Iqbal et al. (2020), Soo Sung and Park (2018), and Pankov et al. (2021) used econometrics to establish the interrelation of the independent variables to their dependable variables.

Education Development

Nave and Franco (2019) conducted case-based qualitative research with semi-structured survey questions supported by document-content analysis. The study is performed "between the University of Beira Interior (Portugal) and Quinta Ribeira de Alpreade company" (food processing company) to understand the working relationship process and how their resolve sustainability challenges together.

Meanwhile, Hermann and Bossle (2018) performed a bibliometric method to investigate the emerging themes from 986 articles (published between 1972 and 2017). It helps establish the conceptual model with detailed content analysis through meta-knowledge, citation analysis, time-slice diagrams, and taxonomy analysis. Hermann and Bossle (2020) use the bibliometric method to synthesize a teaching framework with topic modeling on the selected articles. Geier et al. (2018) performed four case studies from USA and German universities to unveil the 41 best practices that combine into an open innovation framework that allows dynamic interactions and a robust support system. Two studies use case-study and content surveys on the SE education investigation to establish the evidence and data that allow sufficient depth on the SE evolutionary development. At the same time, other studies use bibliometrics to establish a conceptual framework for empirical

study. It also provided a broad understanding of SE epistemology.

MICRO-LEVEL

Sustainability Business Model

Five researchers use SLR as the core method to investigate SMB areas. Their search focuses on academic databases with quality exclusion and inclusion parameters to synthesize significant and relevant studies. One researcher uses the bibliometric method to broaden the investigation of SMB evolution (Chang, 2020; Geissdoerfer et al., 2018; Nosratabadi et al., 2019; Sinkovics et al., 2021; Trapp & Kanbach, 2021).

Franceschelli et al. (2018) performed a case study on an Italian pizzeria restaurant using an explorative qualitative method, combining media and online content analysis. Supplement the findings with a structured quantitative survey of the restaurant operators. Meanwhile, Lobosco et al. (2019) conducted 10 TBI (Technology Business Incubator) case studies from Brazil and Portugal. It uncovered TBI best practices to streamline their efficiency capacity to capture new values; this affirms that innovative SMBs make significant contributions.

Pizzi and Corbo (2020) explore the qualitative analysis of Fintech sectors (Industry 4.0) by studying the SME approach in aligning their SMB with circular economy intent. The researcher works with a conceptual framework known as the ReSOLVE model (Regenerate, Share, Optimize, Loop, Virtualize, and Exchange) that aligns with the circular flow of activities.

Funding and Venturing

Two researchers used the review method for this topic. Schaltegger (2018) uses a narrative review to extrapolate the investigation on SE evolution by UN SDG content analysis with cross-synthesis with ESG – under the pretext of sustainable development that intertwines with sustainability ventures, individuals, NGOs, and sovereign governments. This study has uncovered collaboration avenues for SE to deliver on common goals. Prat (2020) performed a cross-bibliometric study to understand the correlation between JV and sustainability, and it tracks Scopus's academics from 1997 to 2020.

Three researchers perform empirical studies through investment-dedicated databases. Ginsberg and Marcus (2018) extracted the United States VC dataset from 2000 to 2011 via Thomson-Reuters's VentureXpert, unveiling a 2% to 16% investment in clean energy ventures. Bento et al. (2019) leverage the Kickstarter crowdfunding platform to extract the dataset of 869 projects between 2014 and 2017 by performing exclusion and inclusion quality filtering. (2019) extract a dataset from the ZeroIPO platform (China VC Investment) that identifies 645 VCs and 592 ventures between 1991 and 2017. Antarciuc and Zhu (2018) performed the study using DEMATEL (Decision-Making Trial and Evaluation Laboratory) methods with Saudi Arabia's VC experts. The study combines secondary data and literature, guided by expert insight to form understanding on the causal relationship.

Individual and Community

There are five studies, of which four perform empirical surveys and a study using SLR. Stephan and Drencheva (2017) conducted an SLR study synthesizing 50 empirical studies. Kimuli et al. (2020) performed a quantitative empirical study on 384 SMEs, using linear regression and coefficients statistical model to analyze the data. On the other hand, Soomro et al. (2020) investigated green purchasing consumers through Shah Abdul Latif University by conducting an empirical quantitative survey with 361 respondents' data. Vuorio (2017) performed an empirical study by accessing a dataset from the "World Value Survey and Global Entrepreneurship Monitor" of 29 countries with N = 129,543, of which 24,221 data points are studied. Siqueira and Honig (2019) performed an empirical qualitative survey with semi-structured interviews to engage business founders to share their insights and experience towards sustainability businesses.

Organizational

Suriyankietkaew (2019) performed an empirical quantitative survey to engage 357 SME leaders in Thailand to understand managerial and leadership practices' correlation with their sustainability ventures. In contrast, Mäkitie (2019) conducted three case studies on the Norwegian oil and gas

sector through content analysis and a qualitative interview.

Competence and Performance

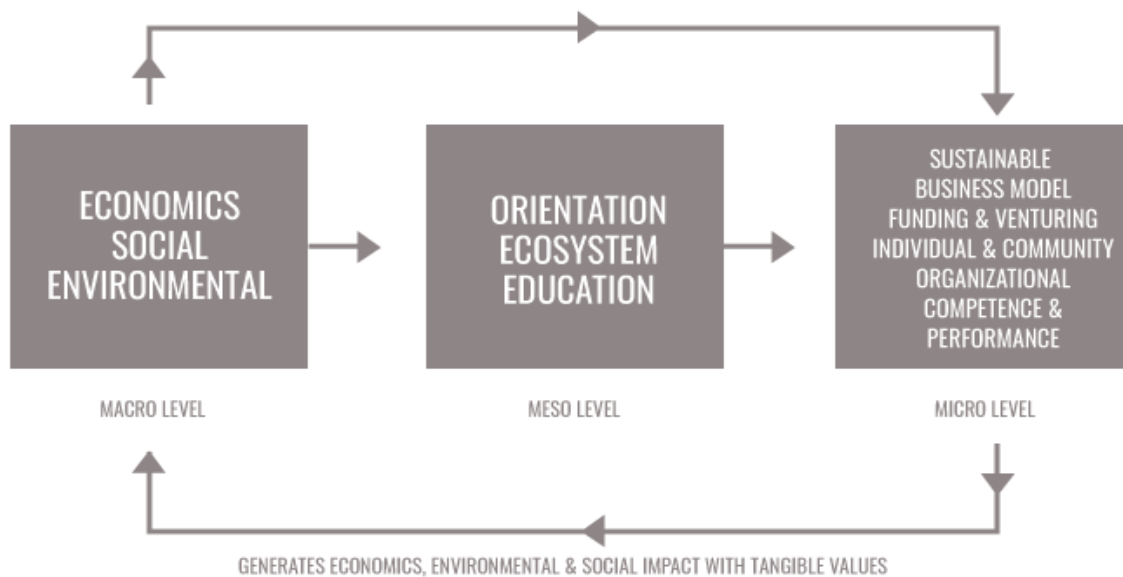
Diepolder and Weitzel (2021) performed a bibliometric method between 2010 and 2020 to identify competence frameworks for Sustainable Entrepreneurial Education with 65 empirical studies. At the same time, Hirunyawipada and Pan (2020) conducted a meta-analysis review with 94 empirical studies on environmental commitment and organizational performance to distill the correlation strength.

CONCLUSION

At the macro and micro levels, this work examines research gaps and essential results in sustainable entrepreneurship (SE). The research gaps at the macro-level include confusion about the terminology and meaning of SE, and a lack of clear indication of the Trifecta of SE as permanent attributes. The methodology did not provide research variables, the need for quality validation and checking of the dataset, and five significant macro variables that require further development. The primary discoveries include the emergence of SE from a macro-overview perspective and prospects for SE research in collaboration with interdisciplinary views. At the meso-level, research gaps include a narrow focus or overemphasis on qualitative surveys, bias errors, an inability to establish a relationship between variables and framework, a lack of understanding of the ecosystem and the SDGs, and the versatile attributes of education as a critical variable. The porous character of the meso-level and the interplay between SE organizations, society, and the government are among the significant discoveries.

In addressing the first question on macro-level key factors that drive SE, the economics, social and environmental which resemble current ESG materiality for sustainability focus. While on meso-level, the orientations, ecosystem, and education play a significant role in fusing SE dynamic changes. As for SE themselves at micro-level, attention is channeled toward Sustainable Business Models and how they can address Funding and Venturing issues. They are acknowledging that SE inherently influences their immediate community in their society. It also requires SE to be effective organizational managers with the necessary competence to deliver on their performance. All this can be explored with the Trifecta Sustainable Entrepreneur conceptual framework.

Figure 1: Trifecta of Sustainable Entrepreneurship



Note: Researcher's Schematic

RESEARCH LIMITATION

The Macro-Level findings highlight several study constraints that must be addressed in future investigations. There is some misunderstanding concerning the nomenclature and meaning of Sustainable Enterprise (SE) and other comparable concepts. As a result, future research should concentrate on determining the distinctions between these concepts. Second, no definite indication of the SE Trifecta (Macro-Meso-Micro) as permanent characteristics exists, and scholars should investigate the temporal nature of these characteristics and their future importance. Finally, most studies can only present emergent themes and theoretical frameworks as study variables. As a result, future studies should concentrate on generating research variables for the Macro-Level. Fourth, the dataset and evidence from the review research require quality assessment and testing to prevent deceiving academics and academicians. Finally, there is a need to investigate other macro factors besides the five key ones identified in all research (Johnson and Schaltegger, 2019; Terán-Yépez et al., 2020; Moya-Clemente & Ribes-giner, 2021; Piwowar-sulej & Kwil, 2021).

Various typical research gaps in Meso-level studies must be filled. Some researchers have overemphasized qualitative surveys or concentrated too narrowly on their research environment, failing to establish linkages between variables and frameworks under consideration. Also, there have been several biases in SLRs and bibliometric studies. Some writers neglect to show the measurability of variables to illustrate the framework's interactive character. Additionally, research has frequently failed to construct a discussion of the SE ecosystem and its mediation variables on the overall growth of the SE discipline, with some studies only analyzing the ecosystem in the context of vertical sectors, national policies, or cultural influences. Lastly, there has been inadequate depth in grasping the significance of SDGs in the development of sustainable disciplines (Amankwah & Abonge, 2011; Geier et al., 2018; Geissdoerfer et al., 2018; Soo Sung & Park, 2018; Dinara Kalmakova, Yuriy Bilan, 2021; Pankov et al., 2021; del Mar Alonso-Almeida & Alvarez-Gil, 2018; Haldar, 2019; Hermann & Bossle, 2018; Trapp & Kanbach, 2021; Gast et al., 2017; Townsend & Coroama, 2018).

The literature identifies specific recurrent challenges in the development of the Micro-level, such as case studies that are too limited and lack generalizability. Moreover, some studies lack evidence for factors in their discussion and have problems with partial, inaccurate, or incomplete performance data. In addition, there is a lack of evidence and in-depth discussion on the contrast between the sustainability agenda and for-profit-driven entrepreneurship. Conversely, the micro-level synthesis identified 60 variables engaged at the micro-level, with around one-third impacted by sustainable business models. In the varying interconnections, venture capitalists and incubators also play mediating and autonomous roles (Nosratabadi et al., 2019; Pizzi & Corbo, 2020; Sinkovics et al., 2021; Antarciuc & Zhu, 2018; Franceschelli et al. 2018; Ginsberg & Marcus, 2018; Trapp & Kanbach, 2021; Bento et al., 2019; Kimuli et al., 2020; Soomro et al., 2020; Vuorio, 2017; Diepolder & Weitzel, 2021; Hirunyawipada & Pan, 2020; Mäkitie, 2019; Suriyankietkaew, 2019).

FUTURE RESEARCH AGENDAS

Future research endeavors might focus on numerous areas to solve the research constraints mentioned in the Macro-Level results. Theoretical research is required to distinguish between SE and other interchangeable words. Second, future research might look at the temporal nature of the SE Trifecta (Macro-Meso-Micro) and its future relevance. Finally, researchers might create study variables beyond emergent topics and theoretical frameworks. Fourth, future research might evaluate and verify the dataset and evidence from the review study. Finally, there is a need to investigate other macro factors besides the five key ones identified in all research. Future research endeavors can help us comprehend Sustainable Enterprise and its influence on society and the environment (Johnson and Schaltegger, 2019; Terán-Yépez et al. 2020; Moya-Clemente & Ribes-giner, 2021; Piwowar-sulej & Kwil, 2021).

By forging ahead, there are various paths for future Meso-level study. The green movement has created new avenues for research into incorporating circular economy ideas, which leads to circular technologies and allows platforms. Furthermore, colleges may play an essential role in assisting the industry at the corporate and organizational levels by collaborating with them to create green technologies and solutions and providing educated and skilled individuals. In addition, research is required to understand how education and social cohesion impact sustainability knowledge and

action, particularly at the national level. Lastly, stakeholders, investors, venture capitalists, incubators, and the media may all be significant Meso-level players, and their effect on sustainable practices has to be studied more (Amankwah & Abonge, 2011; Geier et al., 2018; Geissdoerfer et al., 2018; Soo Sung & Park, 2018; Dinara Kalmakova, Yuriy Bilan, 2021; Pankov et al., 2021; del Mar Alonso-Almeida & Alvarez-Gil, 2018; Haldar, 2019; Hermann & Bossle, 2018; Trapp & Kanbach, 2021; Gast et al., 2017; Townsend & Coroama, 2018).

In terms of future study agenda, the depth and ever-expanding nature of the subject from the micro dimension offers 90 opportunities, with sustainable business models and venture capital funding as essential research themes. ESG measurements and standards significantly impact the area and are worth researching owing to their complexity and broader impact on SE development. Additionally, the emergence of sustainability-driven businesses has piqued the academic community's interest, with issues such as operation management, managerial-leadership development, innovation development, and mergers and acquisitions studied with a sustainability agenda in mind. Finally, the community's involvement in supporting and improving professional sustainability practices and socially-driven agendas in new companies is an essential topic to investigate (Nosratabadi et al., 2019; Pizzi & Corbo, 2020; Sinkovics et al., 2021; Antarciuc & Zhu, 2018; Franceschelli et al. 2018; Ginsberg & Marcus, 2018; Trapp & Kanbach, 2021; Bento et al., 2019; Kimuli et al., 2020; Soomro et al., 2020; Vuorio, 2017; Diepolder & Weitzel, 2021; Hirunyawipada & Pan, 2020; Mäkitie, 2019; Suriyankietkaew, 2019).

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