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Review

Understanding Resilience and Sustainability in Organizations: A Cutting-Edge Framework and the Research Agenda

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Abstract: Given the conceptual confusion between resilience and sustainability in organizations in the literature, the present study examined the literature on the relationship between the two by reviewing the past 27 years of global literature on resilience and sustainability in organizations, to clarify the relationship between the two. It adapted the Integrated Systematic Literature Review technique (ISLR) to identify the most influential scholars in the knowledge domain of resilience and sustainability in organizations, uncover the intellectual structure that defines the knowledge base on resilience and sustainability in organizations, identify the most influential documents in the knowledge domain, derive the most interesting topics in the knowledge domain, and derive the cutting-edge body of knowledge on resilience and sustainability in organizations in response to the dynamic nature of resilience and sustainability problems. The findings reveal that Ivanov, Bansal, and Sarkis are the most influential scholars in the knowledge domain, and the most influential document was authored by Ortiz-de-Mandojana and Bansal. This study uncovers five schools of thought: sustainable business strategy, predictive analytics, sustainable supply chain, ecological resilience, and sustainable leadership. Informed by the analyses, a cutting-edge framework, comprising sustainability practices, sustainability outputs, and sustainability and resilience outcomes, was derived to guide future research and inform practitioners on how to ensure resilience and sustainability in their organizations.

Keywords: resilience; sustainability; sufficiency economy; sustainable leadership; sustainable development; corporate sustainability

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1. Introduction

Sustainability and resilience in organizations have emerged as an important industrial strategic outlook. At the same time, the industry has also encountered concerns over sustainability and resilience due to the fast-paced nature of the environment. Sustainability and resilience are two distinct areas of research that have primarily been studied independently [1]. Despite their documented reciprocal effects, the study of the overlap between sustainability and resilience is still in its early stages, which hampers organizational leaders' ability to enhance their corporate performance and likelihood of survival. Although a few recent studies [2,3] have investigated the relationship between resilience and sustainability, they have not explored the entire collective body of knowledge on resilience and sustainability in organizations, nor its underlying intellectual structure. At present, confusion about the concepts and implementation methods of sustainability and resilience in organizations remains.

In this study, we conducted a comprehensive analysis of the existing literature to analyze and evaluate the relationship between resilience and sustainability in organizations, focusing on key observations and trends in the knowledge domain. In this article,

we begin by emphasizing the areas where knowledge is lacking, the contributions made, and the research questions raised. This is then followed by a description of the methodology employed to answer the questions. Findings as well as implications for researchers and practitioners are also discussed. Among them is a novel framework to improve the prospects for resilience and sustainability in organizations.

2. Knowledge Gaps, Contributions, and Research Questions

Scholars have interpreted organizational sustainability and resilience in a variety of ways. As a consequence, the terms "sustainability" and "resilience" have been used in numerous different ways. While some scholars define them as synonymous, others maintain that they are completely distinct and unconnected [4]. Marchese et al. [4] found that within the literature, there are three main management frameworks that govern the organization of sustainability and resilience: (1) viewing resilience as a part of sustainability, (2) considering sustainability as a part of resilience, and (3) treating resilience and sustainability as distinct objects. The first contribution of the current study is to define "organizational resilience" and "organizational sustainability" more broadly in order to systematically direct worldwide research efforts, given the varied and occasionally contradicting viewpoints surrounding these concepts. While some scholars may argue that organizational sustainability is already a mature topic, including derivative topics (environmental, social, and governance—ESG, for example), and propose that there is no need to define the term, the broader literature indicates otherwise [5]. Along the same line, another review [6] has indicated that the concept of organizational sustainability is generally divided into three dimensions, as economic, environmental, and social sustainability, based on the triple bottom line (TBL) approach, but some scholars have addressed organizational sustainability within the context of new dimensions such as holistic practices, capacity building, culture, leadership, organizational transformation, subjective wellbeing, stakeholder accountability, and shared purposes. To give a specific example, Lopes, Scavarda, Hofmeister, Thomé, and Vaccaro [7] assert that corporations focus their efforts on knowledge management and innovation to ensure organizational sustainability, which has no place in the traditional TBL-related organizational sustainability definition. Therefore, there is a need to define the term "organizational sustainability" for the purpose of the present article.

Both sustainability and resilience are employed to characterize a system [8]. This could be any system, from the global economy to the mental or physical health of a single individual. One commonality between sustainability and resilience is their shared focus on the long-term state and durability of a system or feature, both in the face of disturbances and under regular operating conditions [9]. Sustainability and resilience are both employed to characterize a highly dynamic system [8], and sustainability problems necessitate a dynamic approach [10,11]. However, no existing framework/model [12–15] is dynamic, with the exception of the interim theory by Kantabutra and Ketprapakorn [15], which necessitates further development. Hence, we utilized the dynamic character of resilience and sustainability problems to direct our review, thereby addressing an additional gap.

Furthermore, there is a lack of understanding of the practical approaches for attaining resilience [12]. It is still uncertain how resilient organizations may be created, and to what degree this can be achieved [13]. Organizational resilience and sustainability are interconnected in the literature. Nevertheless, the existing organizational resilience models [12–15] solely focus on particular elements such as resilience processes, crisis management, and organizational growth, without considering sustainability performance. Therefore, it is necessary to develop a complete organizational resilience theoretical framework that includes overall sustainability [12]. Since organizations are entities operating within society, and they can contribute to ensuring global sustainability [16], this framework will help them to ensure their organizational sustainability in difficult times and contribute, particularly through their core businesses, intersectoral

linkages, and global value chains, to ensuring the global sustainability. While Kantabutra and Ketprapakorn [11] have proposed a new organizational theory of resilience to address this gap in the literature, the theory is currently in a preliminary stage and needs additional refinement. Additional information is required to elucidate the operational dynamics of organizational resilience in the ever-evolving business landscape. Specifically, there is a lack of information regarding the specific ways in which resilience is implemented on a daily basis within an organization to maintain the long-term viability of the company. This study addresses the lack of a resilience model for organizational leaders to ensure the sustainability of their businesses by proposing such a model, as the cutting-edge knowledge originating from the present study.

In sum, the current study investigated the global body of knowledge on the relationship between resilience and sustainability in organizations by exploring its intellectual structure and identifying influential scholars and trending topics among scholars in the knowledge domain. Informed by these analyses, cutting-edge knowledge on organizational resilience and sustainability was derived, with policy and managerial implications. This article will conclude by outlining future research directions for scholars and research implications. The present study addressed the research questions (RQs) below.

RQ #1: Which scholars have had the most influence in the field of resilience and sustainability in organizations during the past 27 years?
RQ #2: What is the intellectual structure that defines the knowledge base on resilience and sustainability in organizations?
RQ #3: Which documents have had the most influence on the past 27 years of knowledge accumulation on resilience and sustainability in organizations?
RQ #4: Which topics in the body of knowledge on sustainability and resilience in organizations are most interesting to scholars?
RQ #5: What is the cutting-edge body of the knowledge on resilience and sustainability in organizations in response to the dynamic nature of resilience and sustainability problems?

3. Organizational Resilience Versus Sustainability

The idea of sustainability has been around for decades and has changed over the years [17]. An important factor in this development is the influence of many "intellectual and political streams of thought that have molded concepts of sustainability" [17] (p. 3). Organizational sustainability is based on the idea of enhancing the ecological, social, and economic systems in corporate operations [18]. Because sustainability ensures the company's continued operation and growth without jeopardizing its ability to meet future demands, it is an important guiding principle [19,20].

Sustainability is a complex term that can be interpreted differently in different fields, such as a sustainable competitive advantage in strategic management or sustainable development in corporate sustainability [21]. However, there is an agreement on the economic, social, and environmental ramifications of this idea [22]. Wilson [23] defines organizational sustainability as an organizational management set of concepts that recognizes the need for businesses to expand and be successful, with a focus on the public reporting of the three domain outputs. Thus, we define organizational sustainability as an organization's leadership and management strategy that allows it to expand while also delivering social, environmental, and economic benefits.

Resilience is a notion that refers to the ability of complex adaptive systems to evolve and interact across different time periods and geographical areas [24]. Resilience has been recognized and explored in various fields, with each field emphasizing different parts of the notion. As a result, there are multiple definitions of resilience that are interconnected. Within the context of organizational resilience, social resilience encompasses more than just reacting to a singular catastrophe. It necessitates the continuous capacity to foresee and adjust to evolving conditions [25]. Although there is increasing interest among scholars and practitioners in organizational resilience, its conception is still in

its nascent phase [12]. The idea of resilience has faced longstanding criticism due to its ambiguity and the absence of a universally accepted definition [14]. Nonetheless, resilience, while having some unanswered questions, is undeniably a result of the interactions within a dynamic system operating in a dynamic environment [26,27]. Based on a recent analysis conducted by Kantabutra and Ketprapakorn [11], the different notions of organizational resilience indicate that organizations possess the capacity to successfully navigate sudden environmental changes, ensuring not only their survival but also their prosperity. Organizational resilience, as described in this study, refers to an organization's capacity to improve its adaptability and buffering capability in order to efficiently address unexpected environmental changes. This enables the organization to recuperate and fortify its present condition by adaptively re-creating itself for the future in response to the evolving environment.

Given that organizational sustainability refers to the leadership and management approach adopted by a company to achieve growth while simultaneously producing positive social, environmental, and economic outputs, the company can do so only when it possesses an organizational capacity that enhances both adaptability and the buffering capacity in response to sudden external changes, allowing the company to recover and reinforce its current structure by vigorously re-creating itself for the future in line with the surrounding changes. Therefore, resilience and sustainability in organizations are related in complex ways because resilience capacity allows the organization to grow and concurrently deliver benefits to the society, environment, and economy.

4. Methodology

The Integrated Systematic Literature Review technique (ISLR) [28], which is discussed step by step, was utilized in the present study. Initially, a rudimentary keyword search was performed, superseded by a comprehensive examination of the existing literature to locate suitable literature that was pertinent to the topic. Subsequently, a bibliometric analysis was performed, followed by an identification of the primary findings derived from the analysis. Subsequently, the findings were analyzed, and a theoretical framework was finally constructed, drawing on the significant literature identified through the bibliometric study. This study was concluded by addressing areas of limited understanding, difficulties, and potential avenues for future investigation.

The current study utilized the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) to identify pertinent literature. This literature was then analyzed using bibliometric analysis to provide a visual representation. Ultimately, a coding methodology was employed to examine and integrate the latest knowledge on organizational resilience and sustainability into a framework.

4.1. Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA)

We adhered to the PRISMA criteria [29] when conducting a comprehensive evaluation of the literature on resilience and sustainability in organizations. This study utilized published documents from the Scopus database, which is renowned for its credibility in this field of research [30]. According to Scopus, it is also more comprehensive than other databases since it provides a greater amount of worldwide information (ranging from 50% to 230% more, depending on the location) compared to its closest competitor, especially in the social science subjects. Furthermore, the co-citation analysis method, which will be elaborated upon later, enabled the incorporation of significant documents that were not present in Scopus into this study.

A keyword search was implemented to identify documents from the Scopus database, followed by a search for published documents that were pertinent to the topics of resilience and sustainability in organizations. The keyword-based search commenced by formulating a conceptual definition of the subject matter being examined. The conceptual definition was "resilience and sustainability in organizations". Next, we utilized the search engine of the content repository to establish a practical explanation of the

central concept. This entailed choosing various phrases as search terms and employing AND/OR/AND NOT operators. The search term string precisely delineated the operational parameters of this review [31]. In order to locate publications connected to "resilience and sustainability in organizations" in the Scopus database, we used the following keywords as the operational definition: "organizational resilience" or "corporate resilience" and "organizational sustainability" or "corporate sustainability". They were employed to search keywords, abstracts, and titles. Specifically, we used author keywords because authors know best about the contents of their papers. These keywords were chosen in response to the research objective, which was to investigate the relationship between resilience and sustainability in organizations. We were interested in all types of organizations including business corporations. Using both the words "organizational" and "corporate" made our study inclusive.

The inclusion/exclusion criteria, which served as the guidelines for the screening procedure, are outlined in Table 1 below. Peer-reviewed journal articles in English were the sole focus of this investigation. To conduct a thorough literature assessment of resilience and sustainability in organizations, we maintained an indeterminate Scopus search timeframe to ensure that all pertinent articles were located, irrespective of their publication date. The initial article that Scopus identified as being of interest was published in 1997. We looked from then to July 2024, as our data capture occurred in that month.

Table 1. Criteria for literature inclusion and exclusion.

Selection Criteria	Inclusion	Exclusion
Type of access	All	Non-accessible
Period of literature	Undefined—2024	-
Subject area	Organization management aspects	All others
Type of document	Journal	All others
Language	English	All others

The search string below identified 552 documents:

(TITLE-ABS-KEY (organizational AND resilience) OR TITLE-ABS-KEY (corporate AND resilience) AND TITLE-ABS-KEY (organizational AND sustainability) OR TITLE-ABS-KEY (corporate AND sustainability)) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (PUBSTAGE, "final") OR LIMIT-TO (PUBSTAGE, "aip")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (LANGUAGE, "English")).

Two researchers conducted a fundamental content analysis to verify the documents' eligibility during the eligibility stage. In order to guarantee their relevance to sustainability and resilience in organizations, all abstracts were reviewed. Consensual decision-making between the two parties resolves any discrepancies. All documents were eligible. All eligible documents went through the bibliometric analysis, resulting in five documents for the final stage of framework development. Figure 1 depicts the overall screening process.

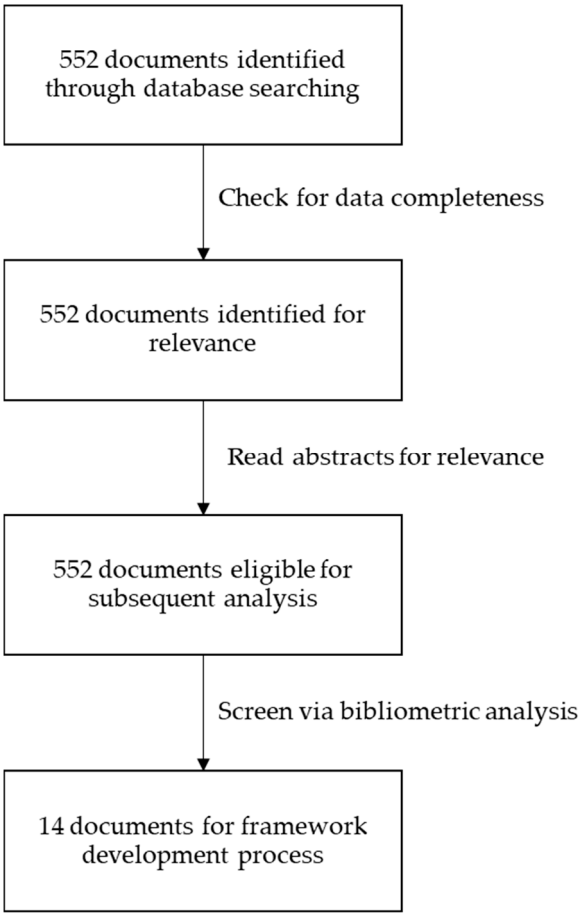


Figure 1. Document screening flowchart.

4.2. Bibliometric Analysis

The descriptive statistics of the literature were submitted to bibliometric analysis. A science map was generated using VOSviewer software version 1.6.18 [32,33]. A science map consists of nodes, each representing authors, documents, or keywords. This map enables researchers to obtain a comprehensive understanding of research trends by analyzing word occurrences, co-citations, and citations. The units of analysis in the current investigation were the author and document. Citation analysis was used as a metric to assess the impact when the number of unique article downloads was not available, as some publishers do not disclose this information [34].

The co-citation analysis approach was used to identify research fronts, as it is more precise than directly citing and using bibliographic coupling, and it produces coherent and distinctive results [35,36]. The co-citation approach, as recommended by Zupic and Cater [37], may be used to assess the associated characteristics and visually represent the resulting framework of knowledge pertaining to resilience and sustainability in organizations. This can be achieved by examining the frequency at which a Scopus document is referenced by another Scopus or non-Scopus document.

Co-citation analysis is also employed to assess the relational features and structure of a knowledge base [37], here by calculating the frequency with which a Scopus article was cited by another article inside or outside the Scopus database. Ultimately, keyword occurrence analysis reveals the "research front" and hot topics in the knowledge domain [35,37].

4.3. Cutting-Edge Knowledge: Framework Development

A framework is defined by its ontological, epistemological, and methodological assumptions, with each idea serving a specific purpose related to ontology or epistemology [38]. Ontological assumptions, as articulated by Guba and Lincoln [39], pertain to

one's comprehension of the fundamental nature of knowledge, reality, existence, and action. Epistemological assumptions relate to understanding the fundamental nature of reality and the underlying mechanisms that govern its operation. The present study examined the ontological and epistemological assumptions that contribute to the resilience and sustainability of organizations. A framework is not simply a collection of ideas, but rather a meticulously structured system in which each thought serves a crucial function. Miles and Huberman [40] (p. 440) define a conceptual framework as one that "lays out the key factors, constructs, or variables, and presumes relationships among them". We used this framework concept to review the relevant literature.

In order to ascertain the most current and cutting-edge knowledge in the domain of resilience and sustainability in organizations, we initiated the process by gathering relevant data. In the prior bibliometric analysis, we determined the authors and papers that were related to the topic. Subsequently, these papers served as the inputs for the last stage. To initiate the development of an organizational resilience and sustainability framework, it was crucial to perform a thorough analysis of the academic literature. This method necessitated employing a methodical, clear, and replicable strategy to identify and assess the existing corpus of documented research [41]. According to Cooper [42], linking relevant research studies helps to identify current achievements in a particular field and highlight important challenges that need to be resolved. A preliminary evaluation of the articles' contents was performed to determine their suitability for inclusion or exclusion. An article was required to satisfy two distinct requirements in order to be eligible for inclusion. Firstly, the source needed to be a peer-reviewed publication, which meant the article was carefully evaluated by professionals in the relevant field. Furthermore, the article was required to specifically address the topics of resilience and sustainability within organizational contexts.

A framework is a structure that encompasses the three essential components of a fundamental theory—"what," "how," and "why"—and it is a form of theory [43]. Accordingly, we employed the theory-building approach when developing the framework to ensure the resilience and sustainability of organizations. During the process of theory building, many plausible, logical, empirical, and/or epistemological claims [43] are analyzed and assessed, resulting in the identification of new themes. Since theory creation is an ongoing process, the suggested framework has the potential to be enhanced in the future by theorists who encounter new relevant information [44]. Furthermore, theorizing is specifically defined as the process of creating new ideas or concepts that can be tested through empirical research [44]. Accordingly, a set of essential theoretical statements that propose research inquiries and generalizations may be formulated to direct future studies [45]. Based on the above considerations, a framework for organizational resilience and sustainability was constructed as a rhetorical method to generate insights.

We used a coding process to find new themes in the articles we identified, as part of the theory-building process. Specifically, to identify the knowledge we could take from these articles, a coding method [46] was used. This method first looks for themes that run through all the articles that have been identified. That is performed by reading every line and paragraph of each identified article and drawing codes from these [47]. After that, these codes are combined into groups of ideas that are linked. These are called "open codes". There is often more than one open code during the open-coding process [48]. The researchers put together open codes that are closely linked and combine them to form a single set of main ideas [47]. Resilience and sustainability were definitely linked to the main codes in this study, a scenario that easily arose during the coding process because of the search keywords used. Moreover, all influential codes were interconnected with the main codes in some manner. The researchers determined the connections between the influential and main codes [48], utilizing the existing literature. The influential codes were found to fundamentally shape notions about the main codes.

Theorists have used several ways to name the resulting codes or constructs [49]. We strove to employ an "established construct" approach [49] to the greatest extent

in our work, facilitating comprehension and tracking of knowledge advancement by scholars. After assigning names to all constructs, we determined the links between them. During this phase, the process of conceptualizing was structured and causality was established, bringing about the development of a framework. The framework was underpinned by theoretical assumptions rooted in fundamental psychological, economic, or social dynamics. These assumptions served as the basis for selecting components and establishing causal links.

5. Evaluation of Research Questions

In this section, the findings are presented and discussed to address the research questions. The results of the author and document co-citation and citation analyses are presented, followed by a discussion of the conclusions from the co-occurrence study. After these analyses, we also identify the cutting-edge body of knowledge in the domain of the relationship between resilience and sustainability in organizations.

5.1. Citation and Co-Citation Analyses

To address RQ #1, we analyzed the citations and co-citations of authors and documents, as described in the following sections.

5.1.1. Analyses of Author Citations and Co-Citations

This section identifies prominent scholars researching resilience and sustainability in organizations, according to our bibliometric analysis [50] as shown in Table 2. It also ranks researchers based on their relevant publications and citations, as well as their influence and the clusters of thought they belong to.

Table 2. Top 10 authors in the organizational resilience and sustainability knowledge domain when ranked by citations, 1997–July 2024.

Rank Order	Author	No. of Documents	Citations	Year of First Publication
1	Ivanov, D.	2	703	2022
2	Sarkis, J.	2	599	2021
3	Fiksel, J.	1	560	2003
4	Bansal, P.	1	551	2016
4	Ortiz-de_Mandojana, N.	1	551	2016
5	Linnenluecke, M.K.	3	517	2011
6	Griffiths, A.	2	469	2011
6	Winn, M.	2	469	2011
7	Wamsler, C.	3	274	2015
8	Fahimnia, B.	1	243	2016
8	Jabbarzadeh, A.	1	243	2016

According to the findings, Ivanov, D. is the top-cited author in this knowledge domain with 703 citations, while the most productive authors are Linnenluecke, M.K. and Wamsler, C., each with three documents.

As shown in Table 3, the top co-cited author in the knowledge domain of resilience and sustainability in organizations is Folke, C., with 172 co-citations. Based on the author citation and co-citation analyses, Ivanov, D., Bansal, P., and Sarkis, J. are the most influential figures in the field of knowledge related to the connection between resilience and sustainability in organizations. These authors appear on both rankings, indicating their influence in this specific knowledge domain and its underlying conceptual foundation.

The author co-citation map in Figure 2 reveals the intellectual structure of the organizational sustainability and resilience knowledge domain. It identifies five key clusters that represent different schools of thought in this field, providing an answer to RQ #2.

Table 3. Top 10 authors in the organizational resilience and sustainability knowledge domain when ranked by co-citations, 1997–July 2024.

Rank Order	Author	Co-Citations	Year of First Publication
1	Folke, C.	172	2005
2	Ivanov, D.	146	2019
3	Holling, C.S.	127	1973
4	Walker, B.	112	2004
4	Bansal, P.	90	2016
5	Gunasekaran, A.	88	2020
6	Sarkis, J.	86	2014
6	Sutcliffe, K.M.	83	2007
7	Ringle, C.M.	82	2009
8	Sarstedt, M.	80	2011

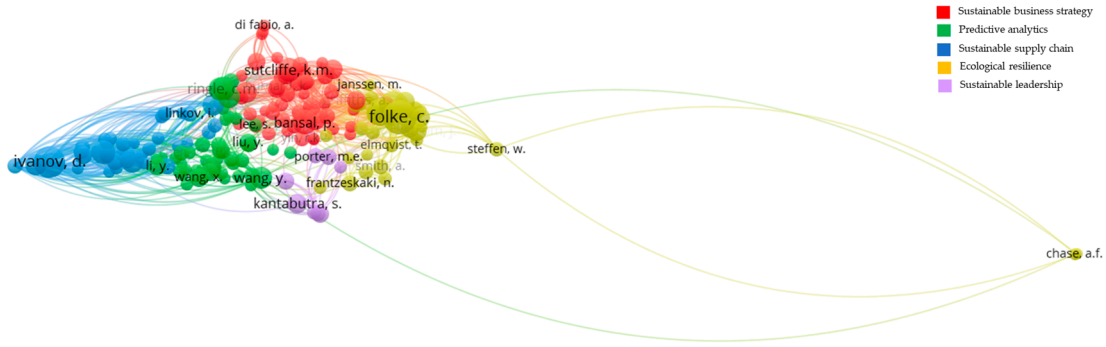


Figure 2. Author co-citation analysis of resilience and sustainability in organizations, 1997–July 2024.

There are five different schools of thought that arise when discussing resilience and sustainability in organizations, each of which provides a different perspective on the relationship between the two: sustainable business strategy (red cluster), predictive analytics (green cluster), sustainable supply chain (dark blue cluster), ecological resilience (yellow cluster), and sustainable leadership (purple cluster). The top-three scholars for each school are shown in Table 4.

Table 4. Top-three scholars per school of thought, 1997–July 2024.

Rank Order	Sustainable Business Strategy	Co-Citations	Predictive Analytics	Co-Citations	Sustainable Supply Chain	Co-Citations
	Red cluster		Green cluster		Dark blue cluster	
1	Bansal, P.	90	Ringle, C.M.	82	Ivanov, D.	146
2	Linnenluecke, M.K.	89	Sarstedt, M.	80	Gunasekaran, A.	88
3	Sutcliffe, K.A.	83	Hair, J.F.	75	Sarkis, J.	86
Rank Order	**Ecological Resilience**	**Co-Citations**	**Sustainable Leadership**	**Co-Citations**		
	Yellow cluster		Purple cluster			
1	Folke, C.	172	Kantabutra, S.	58		
2	Holling, C.S.	127	Avery, G.C.	51		
3	Walker, B.	112	Freeman, R.E.	45		

The first red cluster, spearheaded by Bansal, P., Linnenluecke, M.K., and Sutcliffe, K.A., stands as the most extensive, comprising 56 researchers. The green cluster, which consists

of 50 scholars, is led by Ringle, C.M., Sarstedt, M., and Hair, J.F. It is the second largest cluster. The third largest cluster, consisting of 36 scholars, is led by Ivanov, D., Gunasekaran, A., and Sarkis, J., and is represented by the color dark blue. The fourth cluster, highlighted in yellow, comprises 35 scholars, with Folke, C., Holling, C.S., and Walker, B. serving as the group's leaders. The purple cluster's final school of thought consists of nine scholars, with Kantabutra, S., Avery, G.C., and Freeman, R.E. leading the group.

5.1.2. Analyses of Document Citations and Co-Citations

To find the answer to RQ #3, key documents on resilience and sustainability in organizations were identified through the bibliometric analysis [50]. Seven out of the first ten most-cited articles (Table 5) recognized the relationship between resilience and sustainability, while two focused on resilience alone and one on sustainability. Eight out of ten of their sustainable development domains comprised the economy, while one was on society and the environment and another was on the environment. The most cited document was authored by Fiksel, J., the third most-cited author. The second most-cited document was written by Ortiz-de Mandojana, N. and Bansal, P., who were ranked the joint fourth most frequently cited authors. The third most-cited document was written by Ivanov, D., who was the most frequently cited author.

Table 5. Top 10 documents of the organizational resilience and sustainability knowledge domain when ranked by citations, 1997–July 2024.

Rank Order	Document	Citations	Theme	Focal Sustainable Development Domain
1	Fiksel, J. (2003). Designing resilient, sustainable systems. *Environmental Science & Technology*, 37(23), 5330–5339 [51]	560	Resilience and Sustainability	Environment
2	Ortiz-de-Mandojana, N., and Bansal, P. (2016). The long-term benefits of organizational resilience through sustainable business practices. *Strategic Management Journal*, 37(8), 1615–1631 [52]	551	Resilience and sustainability	Economy
3	Ivanov, D. (2022). Viable supply chain model: Integrating agility, resilience and sustainability perspectives—Lessons from and thinking beyond the COVID-19 pandemic. *Annals of Operations Research*, 319(1), 1411–1431 [53]	535	Resilience and sustainability	Economy
4	Sarkis, J. (2020). Supply chain sustainability: Learning from the COVID-19 pandemic. *International Journal of Operations & Production Management*, 41(1), 63–73 [54]	415	Sustainability	Economy
5	Linnenluecke, M. K., Griffiths, A., and Winn, M. (2012). Extreme weather events and the critical importance of anticipatory adaptation and organizational resilience in responding to impacts. *Business Strategy and the Environment*, 21(1), 17–32 [55]	265	Resilience	Economy
6	Fahimnia, B., and Jabbarzadeh, A. (2016). Marrying supply chain sustainability and resilience: A match made in heaven. *Transportation Research Part E: Logistics and Transportation Review*, 91, 306–324 [56]	243	Resilience and sustainability	Economy
7	Ates, A., and Bititci, U. (2011). Change process: A key enabler for building resilient SMEs. *International Journal of Production Research*, 49(18), 5601–5618 [57]	227	Resilience	Economy
8	Feola, G., and Nunes, R. (2014). Success and failure of grassroots innovations for addressing climate change: The case of the Transition Movement. *Global Environmental Change*, 24, 232–250 [58]	221	Resilience and sustainability	Society and environment

Table 5. *Cont.*

Rank Order	Document	Citations	Theme	Focal Sustainable Development Domain
9	Winn, M., Kirchgeorg, M., Griffiths, A., Linnenluecke, M. K., and Günther, E. (2011). Impacts from climate change on organizations: A conceptual foundation. *Business Strategy and the Environment*, 20(3), 157–173 [59]	204	Resilience and sustainability	Economy
10	Negri, M., Cagno, E., Colicchia, C., and Sarkis, J. (2021). Integrating sustainability and resilience in the supply chain: A systematic literature review and a research agenda. *Business Strategy and the Environment*, 30(7), 2858–2886 [60]	184	Resilience and sustainability	Economy

Eight of the first ten most co-cited articles (Table 6) focused on resilience alone, along with one on sustainability and one on both resilience and sustainability. In the sustainable development domain, the economy dominated the ranking of top co-cited documents, with only one document on the environment. The top co-cited document focusing on the environment was authored by Holling, C.S., who was ranked third in the list of top author co-citations. The second most co-cited article was authored by Linnenluecke, M. K., who was the fifth most cited author. The article produced by Ortiz-de-Mandojana, N. and Bansal, P. was ranked third for co-citations. This study is regarded as prominent in the field of resilience and sustainability in organizations, which we inferred from its inclusion in both the document citation and co-citation analyses. This demonstrates that it holds significant influence in the particular field of knowledge and with regard to its fundamental conceptual basis. Ortiz-de-Mandojana, N. and Bansal, P. belong to the sustainable business strategy school of thought.

Table 6. Top 10 documents of the organizational resilience and sustainability knowledge domain when ranked by co-citations, 1997–July 2024.

Rank Order	Document	Citations	Theme	Focal Sustainable Development Domain
1	Holling, C. S. (1973). Resilience and stability of ecological systems [61]	16	Resilience	Environment
2	Linnenluecke, M. K. (2017). Resilience in business and management research: A review of influential publications and a research agenda. *International Journal of Management Reviews*, 19(1), 4–30 [62]	14	Resilience	Economy
3	Ortiz-de-Mandojana, N., and Bansal, P. (2016). The long-term benefits of organizational resilience through sustainable business practices. *Strategic Management Journal*, 37(8), 1615–1631 [52]	10	Resilience and sustainability	Economy
4	Burnard, K., and Bhamra, R. (2011). Organisational resilience: Development of a conceptual framework for organisational responses. *International Journal of Production Research*, 49(18), 5581–5599 [63]	9	Resilience	Economy
5	Lengnick-Hall, C. A., Beck, T. E., and Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. *Human Resource Management Review*, 21(3), 243–255 [64]	8	Resilience	Economy
6	Duchek, S. (2020). Organizational resilience: A capability-based conceptualization. *Business Research*, 13(1), 215–246 [12]	7	Resilience	Economy

Table 6. *Cont.*

Rank Order	Document	Citations	Theme	Focal Sustainable Development Domain
6	Bhamra, R., Dani, S., and Burnard, K. (2011). Resilience: The concept, a literature review and future directions. *International Journal of Production Research*, 49(18), 5375–5393 [65]	7	Resilience	Economy
6	Teece, D. J., Pisano, G., and Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533 [66]	7	Resilience	Economy
6	Annarelli, A., and Nonino, F. (2016). Strategic and operational management of organizational resilience: Current state of research and future directions. *Omega*, 62, 1–18 [67]	7	Resilience	Economy
6	He, H., and Harris, L. (2020). The impact of COVID-19 pandemic on corporate social responsibility and marketing philosophy. *Journal of Business Research*, 116, 176–182 [68]	7	Sustainability	Economy

5.2. Co-Occurrence Analysis

Co-occurrence analysis was used to answer RQ #4. This explored thematic specialization in the knowledge domain of organizational resilience and sustainability studies, extending the citation analysis [37]. The search for co-occurrences leveraged "author keywords" as the criterion, with a minimum threshold of five occurrences of a term. This decision was made because authors are considered the most trustworthy authorities in determining the relevance of reports on resilience and sustainability in organizations.

Out of a total of 2017 keywords, only 55 satisfied the threshold criteria. In Figure 3, a co-word map illustrates the degree of focus on several subjects pertaining to resilience and sustainability in organizations. A connecting line symbolizes the strength of a link, while the thickness of a node reflects the relationship between keyword nodes.

As shown in Table 7, the top ten frequently co-occurring keywords in the analysis were sustainability (157 occurrences), resilience (150 occurrences), organizational resilience (41 occurrences), COVID-19 (37 occurrences), sustainable development (27 occurrences), corporate social responsibility (24 occurrences), climate change (22 occurrences), leadership (16 occurrences), corporate sustainability (14 occurrences), risk management (12 occurrences), and supply chain resilience (12 occurrences), revealing that these keywords are of significance among scholars studying resilience and sustainability in organizations.

Given the dynamism of the research front, scholars are known to promptly adapt, particularly when new knowledge is introduced. Zupic and Cater [37] and Boyack and Klavans [35] propose that a science map can effectively depict the "research front", here for the knowledge base of resilience and sustainability in organizations. Therefore, science mapping was carried out to illustrate the trending subjects and cutting-edge research areas, as depicted in Figure 3.

This keyword co-occurrence map indicates that scholars conducted research on climate change prior to 2019. Given the scholarly interest in climate change, resilience emerged as a keyword around mid-2019. Sustainability and organizational resilience then became popular among scholars and emerged as keywords at approximately the same time as one another, around early 2020. The trending topics are Industry 4.0 and Industry 5.0, which emerged around early 2023.

It can be observed from the various analyses above that scholars in the domain of resilience and sustainability in organizations have focused their efforts on the economy, leaving out to varying extents the environment and society. This is possibly because Anglo/US capitalism still prevails, where the economy is the main concern [69–71].

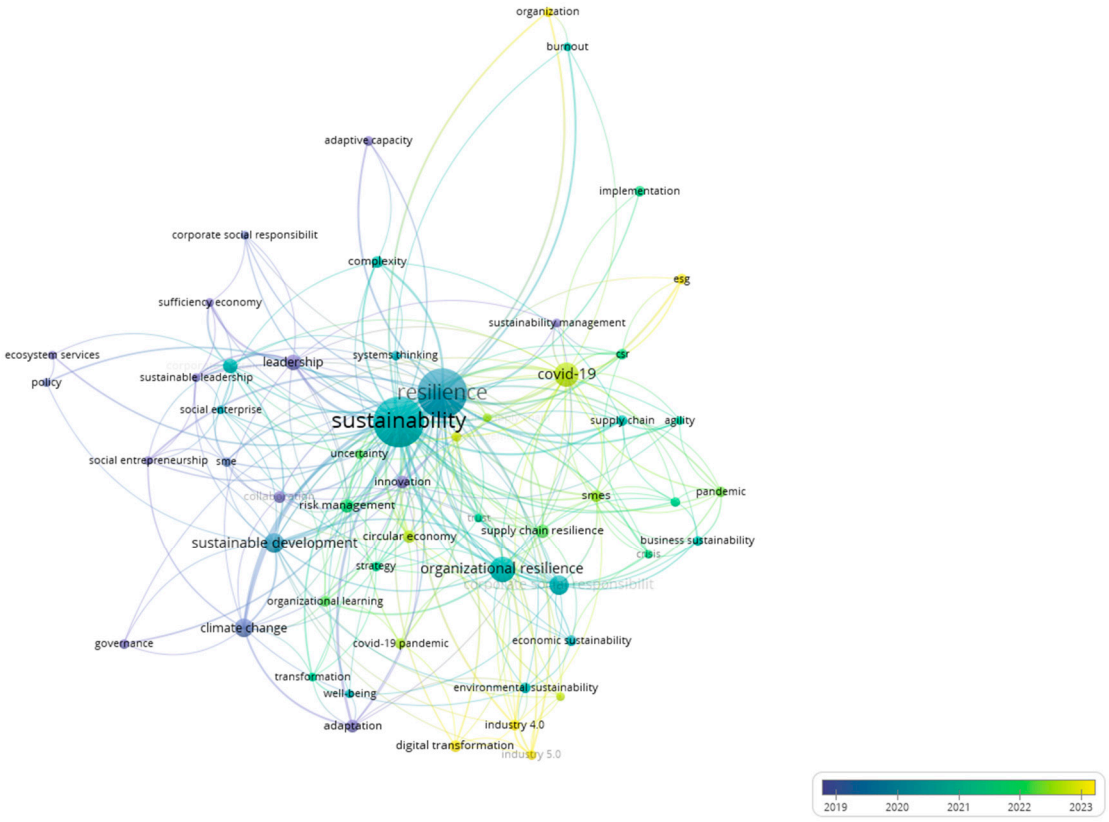


Figure 3. Virtualization map of word co-occurrence in the organizational resilience and sustainability literature by recency, 1997–July 2024.

Table 7. Top 10 keywords of the organizational resilience and sustainability knowledge domain by rank order based on co-concurrence, 1997–July 2024.

Rank Order	Keyword	Occurrences
1	Sustainability	157
2	Resilience	150
3	Organizational resilience	41
4	COVID-19	37
5	Sustainable development	27
6	Corporate social responsibility	24
7	Climate change	22
8	Leadership	16
9	Corporate sustainability	14
10	Risk management	12
10	Supply chain resilience	12

5.3. Cutting-Edge Knowledge in the Organizational Resilience and Sustainability Knowledge Domain

In this section, we draw upon the five schools of thought as the bases for identifying the cutting-edge knowledge on the relationship between resilience and sustainability in organizations. From the author co-citation analysis, we surmised that there are five different schools of thought: sustainable business strategy, predictive analytics, sustainable supply chain, ecological resilience, and sustainable leadership. To determine the cutting-edge knowledge of interest, we determined the schools of thought that are concerned with management within an organization, since the objective of the present study was to investigate the relationship between resilience and sustainability in organizations.

Accordingly, we selected only scholars from the three schools of thought on sustainable business strategy, sustainable supply chain, and sustainable leadership. The other two schools, of predictive analytics and ecological resilience, are not within the organizational boundary. Thus, the development of ideas on the cutting-edge knowledge and the resulting framework and its elements were drawn from the collective works of scholars in these three first schools of thought, which are within the organizational boundary.

In the author citation and co-citation analyses, we identified Ivanov, D., Sarkis, J., Bansal, P., Linnenluecke, M.K., Avery, G.C., and Kantabutra, S. as the authors who are most influential in the knowledge domain of resilience and sustainability in organizations and its underpinning conceptual foundation, as evidenced by their rankings. Therefore, we explored their collective works (see Appendix A) in this knowledge domain and derived the cutting-edge knowledge on resilience and sustainability in organizations. In total, we analyzed 14 articles, including the most influential document by Bansal, P., as identified earlier.

To answer RQ #5, from the 14 articles, we identified 7 relevant to creating a holistic framework to ensure resilience and sustainability in organizations. The articles by Ivanov, D. and Sarkis J. were specific to supply chain management, while the articles by Linnenluecke, M.K. were specific to climate change; given their highly specific nature, they were excluded from the subsequent framework development. Ultimately, we include only articles by Bansal, P., Avery, G.C., and Kantabutra, S., which were relevant to developing a holistic framework to ensure resilience and sustainability in organizations.

Based on the articles from Bansal, Avery, and Kantabutra, the coding process revealed four emerging themes: sustainability practice, sustainability output, sustainability outcome, and resilience outcome. The corporate sustainability practices of perseverance, resilience development, moderation, geosocial development, and sharing, as well as the 23 sustainable leadership practices, gave rise to the sustainability practice theme, as shown in Table 8. The sustainability output theme emerged from the results of the corporate sustainability practices and sustainable leadership practices, including economic/financial, environmental, and social performance outputs. The sustainability outcome theme emerged from the results of delivering the sustainability outputs, including brand and reputation, long-term shareholder value, and long-term stakeholder returns. Finally, the resilience outcome theme emerged from the results of delivering sustainability outputs, including market leadership, financial volatility, survival rates, and crisis endurance.

In the current article, outputs refer to tangible consequences that are documented in a variety of formats, including a management plan, indicating the conclusion of the decision-making process. Outcomes, in this context, denote specific changes in human perceptions or future behaviors that directly result from the outputs. These changes are considered intermediate effects within a mid-range time span.

Informed by the identified articles and the broader literature [72], we sought to understand the relationships between the emergent constructs. The triple bottom line outcomes—economic/financial, environmental, and social performance—are consequences of the sustainability practices of perseverance, resilience development, moderation, geosocial development, and sharing, which in turn lead to sustainability outcomes such as an improved brand and reputation, increased shareholder value in the long run, and enhanced returns for stakeholders over the long term. These sustainability outputs also lead to resilience outcomes such as improved market leadership, financial volatility, survival rates, and crisis endurance. It must be noted that the outputs and outcomes, once successfully delivered, are fed back to strengthen the sustainability practices, as informed by the system theory of corporate sustainability [72]. On the other hand, if not successful, the sustainability practices are adjusted to ensure the successful delivery of outputs and outcomes. This feedback loop is triggered in response to sustainability problems.

The resulting framework addresses the gap concerning the environment and society in the existing body of knowledge in this domain. As can be seen, the emergent sustainability practice to ensure resilience and sustainability in organizations, shown in Table 8, as well as the resulting framework, given in Figure 4, incorporate aspects of the environment and society.

Table 8. Emergent sustainability practices to ensure resilience and sustainability in organizations.

No.	Kantabutra's Corporate Sustainability Practices		Bansal's Sustainability Practices		Avery's Sustainable Leadership Elements																							
			Social Practice	Environmental Practice	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Perseverance	Persevere to improve processes, products and services for stakeholders	X	X	X							X	X		X	X	X	X							X		X
2	Resilience Development	Anticipate and prepare for change	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X		X		X			X	X	X
3	Moderation	Make a decision prudently, taking into account its consequences on stakeholders	X	X		X	X		X	X	X	X	X		X	X	X		X		X				X	X	X
4	Geosocial Development	Invest in taking care of stakeholders	X	X	X				X		X	X	X		X	X	X								X		X
		Integrate social and environmental responsibility with its operation	X	X							X	X	X		X	X	X								X		X
5	Sharing	Share knowledge internally and externally	X	X				X		X	X	X	X		X	X	X				X		X	X	X	X	X

1	2	3	4	5	6	7	8	9	10
Developing people	Labor relations	Retaining staff	Succession planning	Valuing staff	CEO & top team	Ethical behavior	Long-term perspective	Organizational change	Financial independence

11	12	13	14	15	16	17	18	19	20
Environmental responsibility	Social responsibility	Stakeholder consideration	Strong, shared vision	Decision-making	Self-management	Team orientation	Culture	Knowledge sharing & retention	Trust

21	22	23
Innovation	Staff engagement	Quality

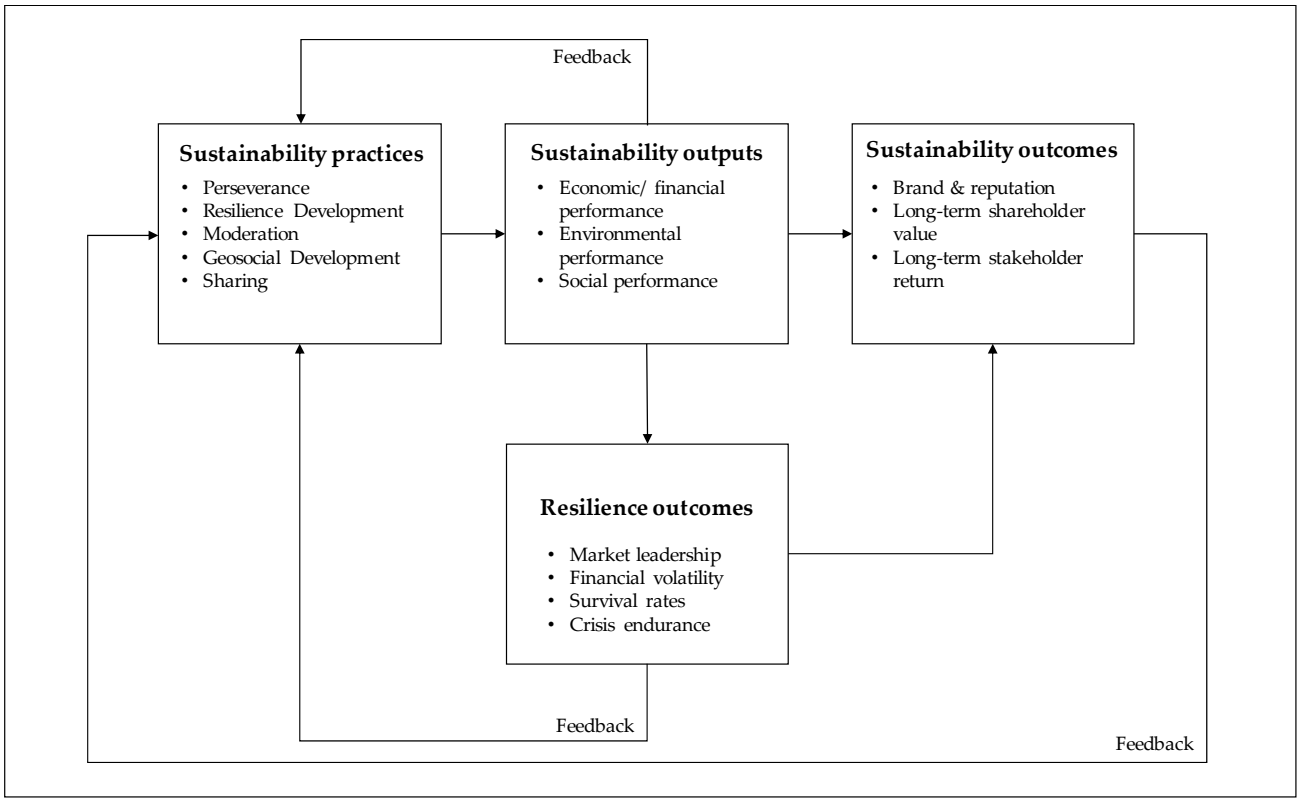


Figure 4. Resilience and sustainability in organizations (RSiO) framework.

Based on this framework, the following propositions can be developed to guide future research:

P1: The economic/financial, environmental, and social performance are sustainability outputs achieved through the sustainability practices of perseverance, resilience development, moderation, geosocial development, and sharing.

P2: An enhanced brand and reputation, long-term shareholder value, and long-term stakeholder return are sustainability outcomes that result from the economic/financial, environmental, and social performance as sustainability outputs.

P3: The economic/ financial, environmental, and social performance as sustainability outputs lead to the delivery of an improved market leadership, financial volatility, survival rates, and crisis endurance as resilience outcomes.

P4: An improved market leadership, financial volatility, survival rates, and crisis endurance as resilience outcomes lead to the delivery of an enhanced brand and reputation, long-term shareholder value, and long-term stakeholder return as sustainability outcomes.

P5: The sustainability practices of perseverance, resilience development, moderation, geosocial development, and sharing are reinforced or adjusted by the economic/financial, environmental, and social performance as sustainability outputs.

P6: The sustainability practices of perseverance, resilience development, moderation, geosocial development, and sharing are also reinforced or adjusted by an enhanced brand and reputation, long-term shareholder value, and long-term stakeholder return as sustainability outcomes.

P7: An improved market leadership, financial volatility, survival rates, and crisis endurance as resilience outcomes reinforce or adjust the sustainability practices of perseverance, resilience development, moderation, geosocial development, and sharing.

6. Discussion

According to the author citation analysis, Ivanov, D. is the top-cited author in this knowledge domain with 703 citations, while the most productive authors are Linnenluecke, M.K. and Wamsler, C., each with three documents. This analysis result suggests that Ivanov, D. is the preeminent scholar in the specialized domain of resilience and sustainability in organizations. The author co-citation analysis results reveal that Folke, C. is the preeminent scholar in the foundational knowledge that forms the basis for the field of research into resilience and sustainability in organizations. When looking closely into the profiles of Ivanov, D. and Folke, C., these results are logical since Ivanov, D. has studied supply chain resilience and Folke, C. has studied ecological resilience. The supply chain is a major area of sustainability research [73,74], while ecological resilience is fundamental to resilience and sustainability in organizations since human activities such as the decrease in biodiversity, the exploitation of natural resources, pollution, and changes in land use have negative impacts on ecological resilience [75,76].

The author citation and co-citation analyses helped us figure out which authors are the most important in the domain of resilience and sustainability in organizations by looking at authors who have influenced both the specific knowledge body on resilience and sustainability in organizations via author citation analysis and the underpinning conceptual foundation of the body of knowledge via author co-citation analysis. Three authors, Ivanov, D., Bansal, P., and Sarkis, J., were included on both the lists in the top author citation and co-citation analyses, and so their collective research of which was discussed and used to inform the development of a novel framework, as described in Section 5.3.

The author's co-citation analysis identified five distinct schools of thought that serve as the basis for the knowledge domain of resilience and sustainability in organizations. The predictive analytics school of thought suggests that the knowledge domain is predominantly empirical and quantitative, which is not a surprise since scholars have been trying to find a universal approach to organizational resilience and sustainability [14]. All of the top three co-cited scholars focus on partial least squares structural equation modeling (PLS SEM). The ecological resilience school of thought is logically located as a foundation for the knowledge domain since human activities certainly affect the ecology, and thus the resilience and sustainability, of the organizations they occur within. It must be noted that these two schools of thought are outside the organizational boundary. The other three schools of sustainability—business strategy, sustainable supply chain, and sustainable leadership—are within the organizational boundary, and so they were the focuses of the present study.

In the sustainable business strategy school of thought, Bansal, P. has focused her work on sustainable business strategy, e.g., [62], while Linnenluecke, M.K. and Sutcliffe, K.A. have focused their work, respectively, on organizational adaptation, e.g., [64], and on uncertainty and risk management within an organization, e.g., [77]. It must be noted that Sutcliffe, K.A. was not identified in our Scopus dataset; as this exemplifies, the advantage of co-citation analysis is that can it bring in an influential author from outside the original dataset.

The school of sustainable supply chain is the third-largest cluster within this knowledge domain, which was expected since supply chain management is a major area of sustainability research [63,64]. The supply chain affects a wide range of stakeholders, meaning it is pivotal to ensuring a sustainable and resilient organization. Ivanov, D. focuses on supply chain resilience, e.g., [53,78], while Gunasekaran, A. and Sarkis, J., respectively, concentrate on supply chain management, e.g., [79], and ecological supply chain management, e.g., [60]. Similarly to before, it must be noted that the works of Gunasekaran, A. were not included in our Scopus dataset; instead, they were brought into this study through co-citation analysis study because his work on supply chain management is fundamental to the knowledge domain of resilience and sustainability in organizations.

As the smallest school of thought, the cluster on sustainable leadership comprises Kantabutra, S., Avery, G.C., and Freeman, R.E. Here, Kantabutra, S. and Avery, G.C. have focused their research on sustainable leadership that emphasizes the necessity of taking

care of a range of stakeholders, e.g., [80–82]. This explains why Freeman, R.E. is in the same cluster since he is well-known for his stakeholder theory, e.g., [83]. Sustainable leadership brings about sustainability and resilience in organizations. It must be noted that Freeman, R.E. was not included in our Scopus dataset; instead, his works appeared in the author co-citation analysis because his stakeholder theory has influenced the knowledge domain of resilience and sustainability in organizations.

When we inspected the clusters, we found that the schools of predictive analytics and the sustainable supply chain were located closely, suggesting that sustainable supply chain scholars have widely used PLS SEM. The sustainable business strategy and sustainable leadership schools of thought were located far away from each other because sustainable business strategy focuses on a high-level strategy for organizational adaptation, while sustainable leadership focuses on a holistic approach to ensure both organizational resilience and sustainability. Both schools were also located far away from the sustainable supply chain school because they do not focus on just one function, but the whole organization. The sustainable supply chain school was also unrelated to the ecological resilience school, which suggests a new research direction for supply chain scholars to relate their research to ecology in order to ensure resilience and sustainability in organizations.

As expected, sustainability and resilience were the top two keywords. Notably, COVID-19 appeared fourth in the ranking, suggesting that scholars paid more attention to the resilience and sustainability phenomenon during the COVID-19 pandemic or that they have done so since the pandemic. We grouped the top keywords into the three categories of "resilience", "sustainability", and "others": resilience (150), organizational resilience (41), and supply chain resilience (12); sustainability (157), sustainable development (27), and corporate sustainability (14); and COVID-19 (37), corporate social responsibility (24), climate change (22), leadership (16), and risk management (12).

Climate change was the prime topic of study in 2018, and scholars investigated resilience before sustainability, starting in late 2019. Then, sustainability emerged in mid-2020 and organizational resilience in early 2021 as topics of study. A relatively recent trend is COVID-19 as a topic of study, which emerged in mid-2022, followed by digital transformation, Industry 4.0, and Industry 5.0 in 2023. Other keywords appear to be involve approaches to achieving resilience and sustainability in organizations, including sustainable leadership, risk management, systems thinking, sustainability management, and ESG.

Informed by the analyses above, we wish to note that although the present study carried out a comprehensive analysis of the existing literature to "analyze and evaluate the relationship between resilience and sustainability in organizations", the existing knowledge in this domain still focuses on the economy, to a significant extent leaving out the environment and society, as shown in the document citation and co-citation analyses. In addition, there is only one school of thought directly relevant to the environment, that of ecological resilience, suggesting that even the underpinning conceptual foundation of the knowledge domain does not focus on the environment and society. Therefore, we include aspects of the environment and society in our cutting-edge knowledge base as exhibited in the resilience and sustainability in organizations (RSiO) framework. The RSiO framework illuminates the perplexing relationship between organizational resilience and sustainability in the literature by illustrating that organizational resilience is a consequence of the deliverance of sustainability outputs following the implementation of sustainability practices. In addition, resilience outcomes can improve sustainability outcomes, as shown in Figure 4.

7. Future Research Directions

Future studies may determine measurement items for the following constructs: sustainability practices: perseverance, resilience development, moderation, geosocial development, and sharing; sustainability outputs: financial, environmental, and social performance; sustainability outcomes: improved market leadership, financial volatility, survival rates,

and crisis endurance; and resilience outcomes: enhanced brand and reputation, long-term shareholder value, and long-term stakeholder return. These measurement items will help future researchers in developing a questionnaire and conducting a quantitative study, and developing interview questions and conducting a qualitative study, to explore the relationship under study.

Moreover, future research can explore the seven propositions outlined. Beyond this, investigations can explore whether and how the achievement of sustainability results is facilitated by the five sustainability practices. In addition, since the relationship between the sustainability outputs and outcomes is rarely explored in the literature, future research can explore whether and how sustainability outcomes are derived from sustainability outputs. The results will offer a significant contribution to the field of sustainable development. Future research can also explore if and how the relationship between sustainability outcomes and resilience outcomes exists over time.

Finally, future studies can investigate the links between the constructs of sustainability practices, sustainability outputs, sustainability outcomes, and resilience outcomes, quantitatively seeking to determine whether they exist and are statistically significant, including the reciprocal links.

8. Managerial Implications

The resilience and sustainability in organizations (RSiO) framework just developed is informed by the existing theoretical and empirical literature. Thus, managerial implications can be drawn.

First, practicing corporate leaders may adopt or adapt the five corporate sustainability practices. They may compare their existing practices against the five sustainability practices or the 23 sustainable leadership elements. After the comparison, they may adjust or add new sustainability practices that are not being implemented.

Many companies have already adopted the UN Sustainable Development Goals (SDGs) as part of their sustainability reporting. These SDGs are actually sustainability outputs. For those who have not adopted the SDGs, they can start by identifying relevant economic/financial, environmental, and social indicators, collecting the relevant data, and monitoring and managing these indicators.

Sustainability outcomes can be supported by conducting a brand awareness survey among stakeholders annually. This requires identifying a broad range of stakeholders who are indirectly or directly affected by business operations, including shareholders, customers, surrounding community members, academics, journalists, and the local government, and requesting that they respond to the survey. The survey should contain measured items about stakeholder perceptions of the company's brand and reputation and how the company benefits them.

It is quite challenging to capture resilience outcomes of market leadership, crisis endurance, financial volatility, and survival rates. As for the ability to maintain market leadership, practicing corporate leaders can observe their market share over time and see if they can maintain a significant market share. Similarly, the ability to endure a crisis and survival rates can be observed over time. As for the financial volatility of listed companies, practicing corporate leaders can observe their share price over time, to see if it is moving (both up and down) quickly and steeply, and record its frequency per year.

In continuing to improve both resilience and sustainability in their organization, practicing corporate leaders should, once an output or outcome is delivered, revisit their sustainability practices to see if there is room for improvement or if a practice should be confirmed as the right practice to continue with.

9. Conclusions

In this article, we have answered RQ #1, demonstrating that Ivanov, D., Bansal, P., and Sarkis, J. are the most influential authors in the knowledge domain of the relationship between resilience and sustainability in organizations. We have also answered RQ #2

in stating that the knowledge base is characterized by five distinct schools of thought, each of which provides a different perspective on the relationship between resilience and sustainability in organizations. They are sustainable business strategy, predictive analytics, sustainable supply chain, ecological resilience, and sustainable leadership. Leading scholars for each school have also been identified. To answer RQ #3, we conducted document citation and co-citation analyses. The most influential document was found to be the paper by Ortiz-de-Mandojana, N. and Bansal, P., entitled "The long-term benefits of organizational resilience through sustainable business practices", published in 2016 in the *Strategic Management Journal*.

For RQ #4, a keyword co-occurrence analysis was performed. The top-ten most commonly co-occurring keywords are sustainability (157 cases), resilience (150 cases), organizational resilience (41 cases), COVID-19 (37 cases), sustainable development (27 cases), corporate social responsibility (24 cases), climate change (22 cases), leadership (16 cases), corporate sustainability (14 cases), risk management (12 cases), and supply chain resilience (12 cases), which are pertinent to scholars of organizational resilience and sustainability. The trending topics among them are Industry 4.0 and Industry 5.0, which emerged around early 2023.

Finally, based on the articles by Bansal, Avery, and Kantabutra, we developed a framework, termed resilience and sustainability in organizations (RSiO), for the cutting-edge body of knowledge in the domain of resilience and sustainability in organizations in response to dynamic problems. The framework includes the sustainability practices of moderation, perseverance, resilience development, geosocial development, and sharing; the sustainability outputs of social, economic, and financial performance; the resilience outcomes of improved market leadership, financial volatility, survival rates, and crisis endurance; and the sustainability outcomes of an enhanced brand and reputation, long-term shareholder value, and long-term stakeholder return. The outputs and outcomes, once successfully delivered, are fed back to strengthen sustainability practices. On the other hand, if not successful, the sustainability practices are adjusted to ensure the successful delivery of outputs and outcomes. Propositions, future research directions, and managerial implications have been discussed.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Articles from the Most Influential Authors in the Knowledge Domain of Resilience and Sustainability in Organizations

No.	Author	School of Thought	Citations	Co-Citation	Article(s)	Article Type	SJR Quartile	FWCI (2024)	Focal Theme	Objective	Relevant to Organizational Resilience & Sustainability Development Framework		
											Input	Throughput	Output
1	Ivanov, D.	Sustainable Supply Chain	703	146	Ivanov, D. (2023). The Industry 5.0 framework: viability-based integration of the resilience, sustainability, and human-centricity perspectives. International Journal of Production Research, 61(5), 1683–1695. [78]	Review	Q1(2023)	44.31	Supply chain	To propose a conceptualisation of Industry 5.0 from the perspectives of operations and supply chain management.			
					Ivanov, D. (2022). Viable supply chain model: integrating agility, resilience and sustainability perspectives—lessons from and thinking beyond the COVID-19 pandemic. Annals of Operations Research, 319(1), 1411–1431. [53]	Review	Q1(2022)	46.95	Supply chain	To theorize a new notion of the viable supply chain (VSC).			
2	Sarkis, J.	Sustainable Supply Chain	599	86	Negri, M., Cagno, E., Colicchia, C., & Sarkis, J. (2021). Integrating sustainability and resilience in the supply chain: A systematic literature review and a research agenda. Business Strategy and the Environment, 30(7), 2858–2886. [60]	Review	Q1(2021)	15.04	Supply chain	To study the inter-relationship between these two constructs of supply chain sustainability and resilience, and provide future research directions.			
					Sarkis, J. (2020). Supply chain sustainability: learning from the COVID-19 pandemic. International Journal of Operations & Production Management, 41(1), 63–73. [54]	Review	Q1(2020)	27.24	Supply chain	To provide research guidance for investigating environmental sustainability in supply chains in a Post-COVID-19 environment.			
3	Bansal, P.	Sustainable Business Strategy	551	90	Ortiz-de-Mandojana, N., & Bansal, P. (2016). The long-term benefits of organizational resilience through sustainable business practices. Strategic Management Journal, 37(8), 1615–1631. [52]	Empirical study	Q1(2016)	9.61	Overall	To theorize and examine the relationship among social and environmental practices and organizational resilience.	X		X

No.	Author	School of Thought	Citations	Co-Citation	Article(s)	Article Type	SJR Quartile	FWCI (2024)	Focal Theme	Objective	Relevant to Organizational Resilience & Sustainability Development Framework		
											Input	Throughput	Output
4	Linnenluecke, M.K.	Sustainable Business Strategy	517	89	Beggs, P.J., Zhang, Y., Bambrick, H., Berry, H.L., Linnenluecke, M.K., Trueck, S., Bi, P., Boylan, S.M., Green, D., Guo, Y., Hanigan, I.C., Johnston, F.H., Madden, D.L., Malik, A., Morgan, G.G., Perkins-Kirkpatrick, S., Rychetnik, L., Stevenson, M., Watts, N. and Capon, A.G. (2019). The 2019 report of the MJA–Lancet Countdown on health and climate change: a turbulent year with mixed progress. Medical Journal of Australia, 211(11), 490–491. [84]	Empirical study	Q2(2019)	3.97	Climate change	To report progress on health and climate change in Australia across 31 indicators.			
					Linnenluecke, M. K., Griffiths, A., & Winn, M. (2012). Extreme weather events and the critical importance of anticipatory adaptation and organizational resilience in responding to impacts. Business Strategy and the Environment, 21(1), 17–32. [55]	Review	Q1(2012)	5.77	Climate change	To propose a comprehensive conceptual framework of organizational adaptation and resilience to extreme weather events.			
					Winn, M., Kirchgeorg, M., Griffiths, A., Linnenluecke, M. K., & Günther, E. (2011). Impacts from climate change on organizations: a conceptual foundation. Business Strategy and the Environment, 20(3), 157–173. [59]	Review	Q1(2011)	5.2	Climate change	To examine contributions from literatures on the management of sustainability, crisis, risk, resilience and adaptive organizational change.			
5	Avery, G.C.	Sustainable Leadership	106	62	Suriyankietkaew, S., & Avery, G. (2016). Sustainable leadership practices driving financial performance: Empirical evidence from Thai SMEs. Sustainability, 8(4), 327. [82]	Empirical study	Q2(2016)	1.51	Overall	To examine the relationship between sustainable leadership practices and financial performance.	X		X
					Avery, G. C., & Bergsteiner, H. (2011). How BMW successfully practices sustainable leadership principles. Strategy & Leadership, 39(6), 11–18. [85]	Empirical study	Q3(2011)	0.77	Overall	To explore BMW practices against the sustainable leadership principles.	X	X	X
6	Kantabutra, S.	Sustainable Leadership	129	58	Kantabutra, S. (2014). Measuring corporate sustainability: A Thai approach. Measuring Business Excellence, 18(2), 73–88. [80]	Empirical study	Q2(2014)	1.28	Overall	To measure corporate sustainability.	X		X
					Kantabutra, S., & Siebenhuner, T. (2011). Predicting corporate sustainability: A Thai approach. Journal of Applied Business Research (JABR), 27(6), 123–134. [86]	Empirical study	Q3(2011)	1.49	Overall	To predict corporate sustainability.	X		X

No.	Author	School of Thought	Citations	Co-Citation	Article(s)	Article Type	SJR Quartile	FWCI (2024)	Focal Theme	Objective	Relevant to Organizational Resilience & Sustainability Development Framework		
											Input	Throughput	Output
					Ketprapakorn, N., & Kantabutra, S. (2019). Sustainable social enterprise model: Relationships and consequences. Sustainability, 11(14), 3772. [87]	Empirical study	Q2(2019)	2.04	Overall	To develop a sustainable social enterprise model.	X		X
					Kantabutra, S. (2017). Exploring the corporate sustainability process: A Thai perspective. International Journal of Productivity and Quality Management, 22(2), 170–189. [88]	Empirical study	Q2(2017)	1.94	Overall	To explore a corporate sustainability process.	X	X	X

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