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# Addressing the conceptualization and measurement challenges of sustainability orientation: A systematic review and research agenda

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## ABSTRACT

Sustainability orientation (SO) has emerged as a fundamental issue in scholarly studies during the last decade. Despite recent advances and the increasing number of research studies on SO, there exists a lack of scholarly agreement on its conceptualization and measurement. A systematic analysis of 53 journal articles published over the two decades shows that SO studies are vibrant and rapidly growing in various disciplines. The findings of this review provide a deeper understanding of the scope, conceptualization, and measurements of the SO construct. A key contribution of this review is the development of a comprehensive framework of SO to provide a succinct and informed summary of its conceptual domain, dimensionality, antecedents, outcomes, and contextualizations. Our review also offers a research agenda that articulates a number of emergent sustainability phenomena and provides exciting new research questions for scholars in strategy and sustainability research. In addition, our review may serve as a guide for various stakeholders; particularly, practitioners and policymakers can effectively develop their strategies and policies to promote the sustainable development agenda.

## 1. Introduction

Improvement in sustainability practices is now a key factor in a firm's pursuit of competitive advantage (Claudy, Peterson, & Pagell, 2016). Policymakers, local, and international pressure groups continue to put pressure on firms to balance their economic performance with social and environmental practices. This development has prompted many researchers to consider the role of sustainability orientation (SO) in firm outcomes. Thus, SO has emerged as a new paradigm that has attracted considerable attention in the strategic management and entrepreneurship literature (Adomako, Amankwah-Amoah, Danso, & Dankwah, 2021; Bartolacci, Caputo, & Soverchia, 2020; Kuckertz & Wagner, 2010). The increasing attention on SO research could be attributed to the severe impacts of organizations on the environment and society (World Bank (2019) (2019, 2019), making SO an imperative for every organization. SO is a strategic construct that reflects the integration of natural environmental considerations into the firm's business strategy (Hart, 1995; Roxas, Ashill, & Chadee, 2017). This includes a deliberate attempt to reconfigure the firm's structure,

processes, and activities to reduce the negative impact of its activities on the natural environment.

Typically, organizations implement a sustainability strategy for two important reasons: (i) immense pressure from various stakeholders (e.g., customers, employees, and policymakers) to behave in a socially and environmentally responsible manner (Schaltegger, Hörisch, & Freeman, 2019; UN, 2020), and (ii) integrating sustainability principles yields long-term organizational benefits (Calabrese, Costa, Leviardi, & Menichini, 2019). Given that the improvements in sustainability practices demonstrate a firm's moral behavior as well as result in superior outcomes, organizations strive to reconfigure their strategic orientation by aligning their economic gains with social and environmental aspects of sustainability (Boso et al., 2017; Danso, Adomako, Lartey, Amankwah-Amoah, & Owusu-Yirenkyi, 2020; Zhang & Zhu, 2019).

Ostensibly, the recent past has witnessed an upsurge in SO studies (e.g., Adomako, Ning, & Adu-Ameyaw, 2021; Roxas et al., 2017). This clearly indicates a high scholarly interest in SO from multiple academic disciplines (e.g., business, entrepreneurship, management, marketing). Further, within the realm of SO literature, researchers have pursued a

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diverse set of objectives. These include the factors that drive SO (Danso et al., 2020; Hofmann, Theyel, & Wood, 2012), the identification of SO's impact on firm performance (Adomako, Amankwah-Amoah, Danso, Konadu, & Owusu-Agyei, 2019; Danso, Adomako, Amankwah-Amoah, Owusu-Agyei, & Konadu, 2019), and the factors that moderate the SO-performance linkage (Adomako et al., 2021; Amankwah-Amoah, Danso, & Adomako, 2019). Collectively, these studies have improved our understanding of the SO construct. However, the literature on SO has predominantly focused on the fundamental question: Does it pay to be sustainable? Or, in other words, is it really an opportunity (or a cost burden)? The empirical evidence has reported equivocal results in this regard. Some studies have highlighted the positive relationships of a firm's SO with superior organizational outcomes (e.g., Cheng, 2020) while others have found the exact opposite (e.g., Amankwah-Amoah & Syllias, 2020).

Despite advancements in SO research, recent reviews (e.g., Khizar, Iqbal, & Rasheed, 2021; Parente, El Tarabishy, Botti, Vesci, & Feola, 2021) have indicated the lack of a unified conceptualization of the SO construct in the extant literature. In other words, there exists a lack of conceptual clarity and scholarly agreement on the conceptualization of the construct. For instance, researchers have considered SO under the umbrella term of strategic orientation and referred to it as a firm-level phenomenon, such as organizational culture or business philosophy (e.g., Roxas & Coetzer, 2012; Shou, Shao, Lai, Kang, & Park, 2019; Tata & Prasad, 2015). On the other hand, another school of thought conceptualizes SO at an individual level (e.g., Kuckertz & Wagner, 2010). In addition, some studies have utilized secondary data (e.g., projects/campaigns, reviews) to operationalize the SO construct, notably, in crowd-funding research (e.g., Bento, Gianfrate, & Thoni, 2019; Calic & Mosakowski, 2016; Testa, Roma, Vasi, & Cincotti, 2020).

Given the existence of various approaches, the confusion about the conceptualization and assessment of the SO construct seems to be growing substantially. Some researchers have already underlined the predominant consequences of the conceptual ambiguities in organizational research (e.g., Podsakoff, MacKenzie, & Podsakoff, 2016). Thus, the use of distinct conceptualizations and various measurement approaches in the current SO research complicates the interpretations as well as the generalizability of empirical findings. Indeed, there have been several recent calls for more empirical studies to examine various drivers and consequences of SO (Cheng, 2020; Kautonen et al., 2021); a lack of common understanding of the conceptualization and measurement of SO may produce inconsistent results and could jeopardize the development of reliable knowledge. Moreover, considering the multifaceted nature of the SO construct and the multidisciplinary coverage of SO literature, recent calls have demonstrated the need to clarify existing confusion and misconceptions in SO research (Khizar et al., 2021; Parente et al., 2021). Based on the foregoing discussion, our study aims to bridge the existing gaps in the SO literature by answering the following research questions:

RQ1 - What is the current status of SO research in management and entrepreneurship literature?

RQ2 - How has the concept of SO been defined/conceptualized in management and entrepreneurship literature?

RQ3 - How has the concept of SO been measured/operationalized in management and entrepreneurship literature?

RQ4 - What factors (i.e., drivers, contingent, and consequent) have been linked to SO in the management and entrepreneurship literature?

Our study contributes to the SO literature in several ways. First, our study presents a comprehensive review to critically evaluate the existing approaches to conceptualize and operationalize the concept of SO. Thus, we adopt the systematic literature review (SLR) technique to identify, review, and analyze existing definitional and measurement approaches in order to address the disagreements and ambiguities in the current SO

scholarship. Second, this study extends the extant SO literature by clarifying the widespread confusion related to the definitions and assessment of SO in extant literature. Third, we develop a comprehensive framework to provide a deeper understanding of the scope, conceptions, measurements, and various drivers, outcomes, and contextualizations of SO. The proposed framework helps to clarify misconceptions and measurement issues of SO in the existing body of literature. Fourth, our study provides new conceptual and theoretical insights for the consistent and comparable development of knowledge in this field of research. To ensure comparability with the previous SO research (e.g., Kuckertz & Wagner, 2010; Roxas & Coetzer, 2012), we systematically select, review, and critique prevailing SO themes, theoretical frameworks, and methodological orientations. Thus, we provide a research agenda that enhances theoretical and practical understanding of SO research and improves its rigor and impact. This study also specifies how increased attention to sustainability studies can contribute to the SO literature more generally and advance the fields of strategy and other related disciplines.

Our review also contributes to managerial practice and policy-making. From a managerial perspective, our study provides a platform for firms to adopt a business culture that signifies the integration of SO into overall business strategy. Our results suggest that managers can utilize the proposed framework to direct sustainability decisions in organizations. Finally, given that various governments across the globe are considering various ways to mitigate the impact of human/business activities on the environment, the results of this review can serve as a blueprint for guiding policymakers in drafting sustainable development policies to help businesses improve their sustainability footprints.

This study is organized as follows. The first section presents the background of the research problem in existing sustainability orientation literature and develops the research question to establish the scope of this study. The next section discusses the step-by-step systematic literature review method to identify, select, review, and evaluate the extant SO literature. Section three presents the findings of this study in terms of the conceptualization and measurement of the SO construct. Subsequently, the findings are discussed in section four, followed by the development of a comprehensive framework to unfold the complex nature of the construct. Implications for theory, practice, and future research are also discussed. Finally, the overall conclusion and limitations of the study are presented.

## 2. Theoretical background

### 2.1. Knowledge-based view and SO

It has been established that firms stand to gain sustainable competitive advantage from the acquisition, configuration, transformation, and exploitation of both internal and external knowledge sources (Roxas & Chadee, 2016). The knowledge-based view (KBV) (Grant, 1996; Nonaka & Takeuchi, 1995) builds on this assertion to suggest that firms that can search for, acquire, and leverage knowledge-based resources stand a better chance of developing unique capabilities. The strategic management literature recognizes firm capabilities as the accumulated knowledge and skills embedded in a firm's organizational processes and routines (Day, 1994). In terms of accumulated knowledge, it is the case that the firm's knowledge management machinery can play a critical role in advancing SO to achieve sustainable competitive advantage (Chang, Sabatini-Marques, Da Costa, Selig, & Yigitcanlar, 2018; Martins, Rampasso, Anholon, Quelhas, & Leal Filho, 2019). A major rationale is that knowledge management has been considered an important capability for ensuring and consolidating competitive advantage for firms. In addition, knowledge management is critical for the development of SO given its role in optimizing several approaches related to achieving sustainable development goals (Bucci & El-Diraby, 2018). Given this situation, it is critical to note that the use of knowledge management as a strategy signifies the recognition of the critical competencies needed to

implement SO by weaving the principles of sustainability into the overall company strategy (Robinson, Anumba, Carrillo, & Al-Ghassani, 2006). Instructively, the integration of knowledge management into sustainability practices is considered a new paradigm of sustainable development that can improve the guidelines for economic, environmental, and social sustainability (Chang et al., 2018; Martins et al., 2019).

## 2.2. SO as a strategic orientation

The SO literature has conceptualized SO as a strategic orientation that signifies a firm-level capability (Amankwah-Amoah et al., 2019; Roxas et al., 2017). Strategic orientation is generally considered as a firm-level capability, a philosophy, principles, and guidelines that direct the nature and scope of organizations' activities and policies (Cadogan, 2012; Hakala, 2011). The concept of strategic orientation has been widely applied to many distinct research areas (e.g., marketing, entrepreneurship). These investigations include, but are not limited to, (i) market orientation (Kohli & Jaworski, 1990; Narver & Slater, 1990), (ii) entrepreneurial orientation (Covin & Slevin, 1989; Lumpkin & Dess, 1996), (iii) technology orientation (Gatignon & Xuereb, 1997), and (iv) stakeholder orientation (Berman, Wicks, Kotha, & Jones, 1999).

More recently, there has been a paradigm shift in firms' strategic management as multiple stakeholders (e.g., governments, policymakers, scholars, and civil society) have suggested that firms should align the social and environmental concerns in their strategic decisions with their economic goals. Instructively, firms have increasingly realized the need to develop and deploy a strategic orientation to pursue the triple bottom line of sustainability (i.e., economic, social, environment) (Heikkurinen & Bonnedahl, 2013; Khizar & Iqbal, 2020; Zhang & Zhu, 2019). In this vein, firms' orientation toward social and environmental aspects of sustainable development is often termed as SO in the extant literature (Amankwah-Amoah et al., 2019; Roxas & Chadee, 2012). Like other strategic orientations (e.g., entrepreneurial, market, technology, and learning), previous studies have acknowledged SO as a firm's strategic resource or a dynamic capability that leads to attaining competitive advantage and superior firm performance (Claudy et al., 2016; Dixon-Fowler, Slater, Johnson, Ellstrand, & Romi, 2013).

The research on corporate sustainability and business orientation toward sustainable development has been increasing since the launch of the UN sustainable development goals (SDGs) (e.g., Del Giudice, Di Vaio, Hassan, & Palladino, 2021; Di Vaio, Palladino, Hassan, & Escobar, 2020). To this end, the existing literature is populated with several distinct concepts and terminologies to communicate social and environmental issues at the strategic level. Among many other concepts, corporate social responsibility (CSR) is one of the most debated concepts in academic and professional business literature (e.g., Caputo, Scuotto, Papa, & Del Giudice, 2021; Stoian & Gilman, 2017). There is much debate that CSR is a narrow term that is dominated by the social dimension while encompassing little to nothing of environmental and economic dimensions (Alshehhi, Nobanee, & Khare, 2018). However, the CSR construct does not capture all the essential elements of sustainability (i.e., economic, social, environmental); thus, literature is slowly replacing CSR with total sustainability encompassing the triple bottom line (TBL) approach (Elkington, 1994). Furthermore, previous studies have also demonstrated the contextual/cultural differences in viewing sustainability. For instance, Komppula, Honkanen, Rossi, and Kolesnikova (2018) found that Russian students understood the concept of sustainability as an ecological question, but, for Finns, it is a comprehensive concept covering all three elements of the TBL, i.e., ecological, economic, and social aspects.

Indeed, the concept of SO has emerged from the generic concept to an established construct that has received predominant scholarly attention and publication space in top management and entrepreneurship outlets. The recent past saw an exponential increase in the number of empirical studies on SO. This phenomenon has received enormous

scholarly attention from various academic disciplines (e.g., business, entrepreneurship, management, marketing, and supply chain) and produced widespread literature in a short span of time. More recently, a literature review study synthesized 93 SO publications into five key themes, as follows: (i) SO drivers, (ii) multiple orientations paradigm, (iii) SO elements, (iv) SO outcomes, and (v) crowd-funding sustainability (for details, see Khizar et al., 2021). Despite the emergent nature of this research domain, recent studies (e.g., Khizar et al., 2021; Parente et al., 2021) have highlighted the differences in empirical findings and conflicting views on the conceptualization and operationalization of the SO construct. These studies suggest that it is of the utmost importance to clarify the conceptual and measurement issues in SO literature. The present study is the first of its kind to identify, review, and critically evaluate the extant SO literature to develop and communicate a comprehensive unified framework and discusses knowledge gaps and limitations in the current literature to put forward potential research avenues.

## 3. Methodology

This study adopts the systematic literature review (SLR) method to identify and evaluate all the accumulated knowledge produced so far on firms' SO. Compared with traditional LR (i.e., subjective, unorganized, narrow literature coverage), SLR is an organized, transparent, and replicable method to evaluate the existing literature that systematically manages the diversity of knowledge and provides more objective, reliable, and rigorous findings (Thorpe, Holt, Macpherson, & Pittaway, 2005; Tranfield, Denyer, & Smart, 2003). The SLR approach is emerging as 'a new normal' technique to conduct literature reviews that has frequently been applied in business management and entrepreneurship research (e.g., Cillo, Petruzzelli, Ardito, & Del Giudice, 2019; Khan, Dhir, Parida, & Papa, 2021; Madanaguli, Kaur, Bresciani, & Dhir, 2021). In agreement with the guidelines provided for conducting SLR (Kitchenham & Charters, 2007; Tranfield et al., 2003), this study encompasses three main phases in the collection and evaluation of key scientific contributions on SO, as follows: i) planning the review, ii) conducting the review, and iii) reporting the review.

### 3.1. Planning the review

The planning phase consisted of two main stages: (i) framing the research question (i.e., delimiting the scope and conceptual boundaries of this review), and (ii) formulating the search strategy (i.e., determining search protocols and inclusion/exclusion criteria). After the development of RQs (see Section 1), the second stage concerns the search protocol and inclusion/exclusion criteria. Following the recommendations to determine a comprehensive search strategy (Hiebl, 2021; Mourão et al., 2020), we devised a hybrid strategy to locate all relevant scientific publications of SO. Our hybrid search strategy combines the merits of both i) database-driven approach (i.e., specifying keywords, databases, and exclusion/inclusion criteria), and ii) iterative snowballing technique (i.e., forward/backward).

In a database-driven approach, the selection of search keywords is a crucial task. In this regard, we initially conducted an exploratory search on Google Scholar to identify: i) relevant and synonymous terms for SO, and ii) the seminal works. First, we briefly reviewed the first 100 hits on Google Scholar. Afterward, we performed in-depth reading of the seminal SO literature (e.g., Kuckertz & Wagner, 2010) and a previously published literature review (Khizar et al., 2021) on this topic. As a result, we identified several keywords that were more or less similar to the SO concept (e.g., *sustainable orientation*, *orientation toward sustainable development*, *pro-sustainability orientation*, *eco-sustainability orientation*, *strategic sustainability orientation*, *social sustainability orientation*, *environmental sustainability orientation*). Consistent with the aim of this research, we finalized the keyword (i.e., "sustainab\* orientation") to identify relevant published articles. The rationale behind selecting this

search term is: i) the current study is a phenomena-based SLR; that is, our focus is to find the pertinent literature on the SO construct, and ii) we used wild card/truncation (\*) in the search syntax, supported by Web of Science, and Scopus search engine, to identify all the alternate and continuing terms (e.g., sustainable, sustainability, sustainable development).

We selected two scientific databases, namely, i) Web of Science, and ii) Scopus, to identify SO articles. Both of these databases cover a wide range of publication outlets related to business, entrepreneurship, and SO literature; thus, they have been used often in recent SLRs (e.g., Khan, Kaur, Jabeen, & Dhir, 2021; Arun, Kaur, Ferraris, & Dhir, 2021). We specified the inclusion and exclusion criteria to ensure that all the selected articles meet the eligibility criteria (i.e., quality and relevancy) to be included in this review. Fig. 1 below presents the specified exclusion/inclusion criteria. Once the initial sample (i.e., seed set) was selected through the database-driven approach, we supplemented our initial search by utilizing the snowballing technique (aka: citation chasing, citation chaining) for identifying any other potentially relevant studies missed in the database search (Jalali & Wohlin, 2012; Mourão et al., 2020). This iteration process was conducted according to our inclusion and exclusion criteria. We first manually searched and analyzed the title and abstract of all the papers selected in the seed set (i.e., backward snowballing). In the last step of our sample selection, we used Google Scholar to search for the articles citing the articles from our seed set.

### 3.2. Conducting the review

#### 3.2.1. Sample selection

After finalizing a comprehensive search strategy (see Fig. 1), we performed the keyword searching in Web of Science and Scopus on 20-06-2021. Our initial search resulted in 376 articles (Scopus = 208; WOS = 168). After that, we limited the search results by applying two search

criteria: (i) language – English, (ii) type – Articles + Reviews. At this stage, we developed an initial database of 323 papers (Scopus = 176; WOS = 147) and discarded the duplicate studies (n = 132). Subsequently, we reviewed the title and abstract of all the identified papers (n = 191) to establish their general relevance to be included in this review. As a result, we discarded 89 studies not fulfilling the relevancy and scope of the topic, i.e., business sustainability orientation. During our review of the titles and abstracts, we observed that scholars have also investigated the individual elements of sustainability orientation, such as environmental sustainability orientation (e.g., Adomako et al., 2021; Roxas & Coetzer, 2012), and social sustainability orientation (e.g., Croom, Vidal, Spetic, Marshall, & McCarthy, 2018; Nath & Agrawal, 2020). Moreover, we also noted another line of research (i.e., sustainable crowd-funding) that has predominantly utilized secondary data to assess SO in crowd-funding campaigns and projects (e.g., Bento et al., 2019; Testa et al., 2020). By consensus, consistent with the triple bottom line approach, we excluded all those studies that have either focused on a single aspect of sustainability in isolation (n = 16) or drawn SO investigations into crowd-funding research (n = 12).

Subsequently, two authors independently performed an in-depth review of all the remaining articles (n = 74) to identify the given definitions and measurements of SO, and tagged descriptive coding of all the articles. At this stage, we found that some studies do not define (e.g., Li, Okoroafo, & Gammoh, 2014; Steiner, Geissler, Schreder, & Zenk, 2018) and others do not measure SO (e.g., Parente, ElTarabishy, Vesci, & Botti, 2018). Hence, we only kept those studies for further review and analysis that have either: (i) given the definition of the SO concept, or (ii) have measured the SO construct. At this stage, we discussed any differences in our shortlists and/or coding to arrive at a consensus list of relevant articles to be taken for further analysis. By consensus, we selected 47 articles that fulfill the inclusion criteria and come under the scope of this review. In addition, we performed iterative backward-forward snowballing, which yielded six more relevant journal articles (e.g., Criado-

<p><b>Keywords (KW)</b></p>	<p><b>Preliminary set –</b>  <i>sustainable orientation</i>  <i>pro-sustainability orientation</i>  <i>eco-sustainability orientation</i>  <i>strategic sustainability orientation</i>  <i>orientation towards sustainable development</i>  <i>social sustainability orientation</i>  <i>environmental sustainability orientation</i></p>	<p><b>Search Syntax –</b>  <i>(title-abs-key (“sustainab* orientation”) and (limit-to (language, “english”)) and (limit-to (doctype, “ar”)) or (limit-to (doctype, “re”))</i>  <i>Boolean operators “AND” “OR” used</i>  <i>Wildcard/Truncation * used</i></p>
<p><b>Search Engines/ Databases (DB)</b></p>	<p>DB1 - Web of Science                  DB2- Scopus                  DB1- Google Scholar (for Preliminary search &amp; snowballing)</p>	
<p><b>Exclusion criteria (EC)</b></p>	<p>EC1- KW not appeared in the title, abstract, keywords                  EC2- Books, conference preceding, editorials, letter, essays                  EC3- Not in English                  EC4- duplicate studies                  EC5- beyond the scope of business and management                  EC6- not provided the definition &amp;/or measurements of SO</p>	
<p><b>Inclusion criteria (IC)</b></p>	<p>IC1- KW appeared in the title, abstract, keywords                  IC2- be published in any of the selected databases                  IC3- be a journal article – empirical or theoretical                  IC4- be in the English language                  IC5- published on or before June 20, 2021                  IC6- definition &amp;/or measurements of SO construct is given</p>	

Fig. 1. Search strategy (keywords, databases, and inclusion/exclusion criteria).

Gomis, Cervera-Taulet, & Iniesta-Bonillo, 2017; Gagnon, Michael, Elser, & Gyory, 2013; Khizar & Iqbal, 2020). Therefore, the final sample increased to 53 journal articles, marked with an asterisk (\*) in the reference section. Fig. 2 below depicts an overall summary of the rigorous data collection process.

3.2.2. Data coding and extraction

After systematic selection of the 53 journal articles to be included in this SLR, the standardized data extraction process was undertaken to reduce the subjectivity of the authors (Tranfield et al., 2003). We extracted relevant data from all the articles aided by the software package MaxQDA 2018 and Microsoft Excel 2013 spreadsheet. During this process, first, we uploaded all 53 articles (in PDF format) in MaxQDA. To extract all the relevant data from each article, two authors independently performed the full-text review and analysis for open coding. We coded each selected paper on 37 dimensions, which resulted in a total of 1961 codes. All the relevant data was extracted and recorded in a spreadsheet. The data included but was not limited to the name of the author(s), article title, publication year, the name of the journal, the type (i.e., empirical, or theoretical), and methods (i.e., qualitative, quantitative, hybrid), empirical base (i.e., sample/subject, geographical location, industry), main purpose, findings, theoretical approaches, SO definitions, and measurement scales. Subsequently, both authors compared their tags to validate and refine our coding for further

analysis. Coding differences were found in 21 cases (1.07%), which shows an acceptable level of intercoder agreement of 98.93% (Neuendorf, 2017). The differences in codings were then discussed to reach a consensus.

3.3. Reporting the review

After data extraction and an in-depth review of the selected studies in our SLR, the final task was to report the analysis and synthesis of the review. The analysis and findings of this review are reported in terms of: (i) research profiling, (ii) critical analysis of existing definitional and measurement approaches, and (iii) a synthesis framework of SO research. First, we conducted a quantitative descriptive research profiling to highlight the general characteristics of the selected articles. Subsequently, we critically compared and evaluated the extracted definitional and measurement approaches and developed a framework that provides a comprehensive overview of the phenomenon. The proposed framework sets the foundation to clarify existing ambiguities/confusions as well as to advance the development of knowledge in this field of study. Lastly, we performed a critical review of all studies to identify gaps and limitations in existing research and to propose future avenues of research.

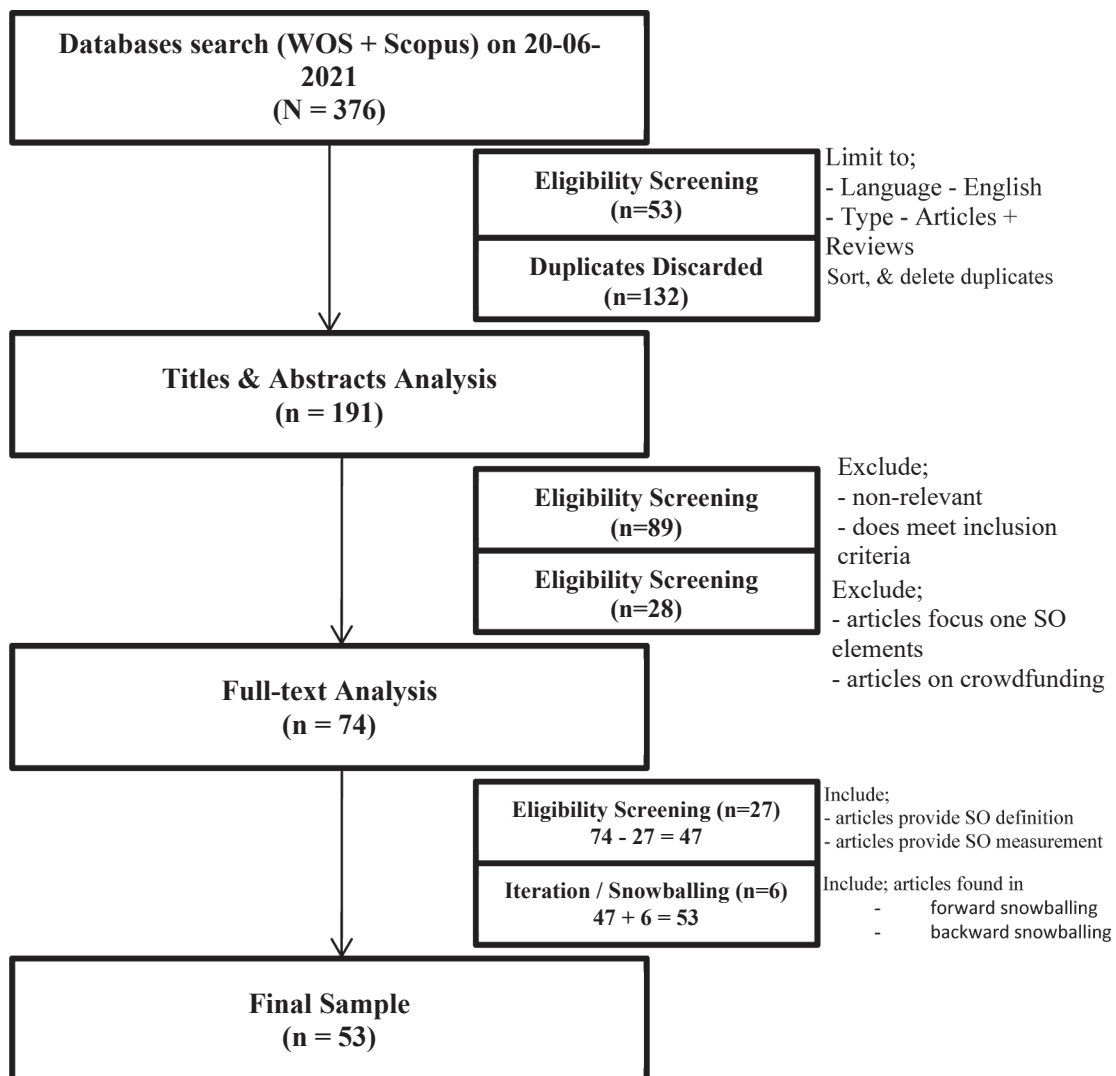


Fig. 2. Sample selection process.

## 4. Results

### 4.1. Research profiling

In this section, we present descriptive findings of research profiles of extant SO literature in terms of year-wise, journal-wise, and country-wise publications (Figs. 3 and 4). Fig. 3 below presents the publication activity of SO research over time. We can observe a consistently growing trend of SO publications from 2009 to 2021. More than 80% (43/53) of the articles were published during the last four years (2017–2021), which highlights the constantly growing scholarly interest in this field of study, responding to the call from UN's agenda-2030 for sustainable development. Concerning publication outlets, we found that the 53 articles selected in this SLR had been published in 34 separate journals (see appendix). Among those, we identified that the maximum number of articles are published in the following journals: *Journal of Cleaner Production*, *Business Strategy and the Environment*, *Journal of Business Research*, and *Sustainability*. The studies on SO investigations have also been published in entrepreneurship journals (e.g., *Journal of Small Business Management*, *Journal of Business Venturing*, and *International Journal of Entrepreneurial Behavior and Research*). Furthermore, we also observed the growing interest in SO research among leading journals as the majority of the papers selected in this SLR are published in journals indexed in Journal Citation Report (JCR) listed journals, Chartered Association of Business Schools (CABS), and Australian Business Dean Council (ABDC) journals' ranking list. Fig. 4 below presents the geographical contexts where empirical studies have been conducted. The findings reveal that most of the empirical studies are conducted in Germany (n = 5) and Malaysia (n = 5), followed by the USA (n = 3) and China (n = 3). Furthermore, the majority of studies (n = 39, 81%) were conducted in a single country context. Additionally, 15% of empirical studies (n = 8) in our sample utilized secondary data that was previously collected in multiple country contexts.

### 4.2. Conceptualization of SO

A common procedure to understand any phenomenon is to consider how it has been considered and examined in previous research (Combs, Crook, & Shook, 2005). Therefore, through a rigorous systematic process, we have identified, reviewed, and analyzed the existing approaches to define SO. In this regard, we developed a systemized coding scheme to ascertain how scholars have conceptualized SO in past studies. The definitions were extracted from the selected studies, and each study was coded based on the terminology used, theories, level of conception, and definitional clarity (see Table 1).

#### 4.2.1. Related terminologies

We found that previous studies have used several different terms to communicate SO. The distinct terminologies found in our review are as follows: sustainable development orientation (Heikkurinen & Bonne-dahl, 2013), sustainable orientation (St-Jean & Labelle, 2018), sustainability orientation (e.g., DiVito & Bohnsack, 2017; Kuckertz &

Wagner, 2010; Shou et al., 2019), sustainable management orientation (Seidel et al., 2018), and strategic sustainability orientation (Emamisa-leh & Rahmani, 2017; Hong, Jagani, Kim, & Youn, 2019). The most common term which was used by authors in the sustainability literature was “sustainability orientation” (e.g., DiVito & Bohnsack, 2017; Jin, Navare, & Lynch, 2019; Kuckertz & Wagner, 2010; Shou et al., 2019), followed by “sustainable orientation” (e.g., St-Jean & Labelle, 2018; Aboelmaged & Hashem, 2019). In addition, some researchers have used both of these terms interchangeably in a single study (e.g., Hong et al., 2019).

#### 4.2.2. Theoretical perspectives

The findings of our review indicated that several theoretical frameworks have been employed in the extant research to conceptualize SO (see Table 1). The most adopted theoretical frameworks in the selected studies are as follows: the resource-based view (RBV), upper echelon theory (UET), institutional theory, and stakeholder theory. Existing research has mainly utilized resource-based theories (e.g., RBV, NRBV, dynamic capabilities) and top management perspectives (e.g., UET) to investigate various drivers and consequent factors of SO. For instance, drawing from the resource-based theories, SO is regarded as an organizational resource and capability that can yield superior performance outcomes (Adomako et al., 2021). On the other hand, the upper echelon theory (UET) (Hambrick & Mason, 1984; Hambrick, 2007) underpins examining the concept of SO from the top management perspective.

In addition, our review identified that scholars have examined this concept utilizing popular theoretical frameworks from other management disciplines, for instance, intention-behavior models, leadership theories, entrepreneurship theories, and innovation theories. Table 1 reports the summary of the theoretical lenses which have been used in prior SO research. A large number of theories are beneficial, indicating the multidisciplinary scholarly interests in SO research, consequently, contributing different ideas on this topic. However, this certainly highlights the lack of a unifying conceptual framework and complicates the integration and development of consistent knowledge.

#### 4.2.3. Definitional analysis

In agreement with the previous studies regarding the definitional analysis of concepts (e.g., Baggetta & Alexander, 2016; Andiliou & Murphy, 2010), this study analyzed all the existing definitions of SO in terms of the explicitness of the definition provided in the paper. According to Suddaby (2010), a good definition of a construct captures its essential properties and characteristics. At the same time, it should be as concise as possible (i.e., parsimonious) and should avoid terminological tautology and circularity. In this review, we categorized all the definitions extracted from the selected articles into either an *explicit (E)* or an *implicit (I)* definition.

A definition was coded as explicit (E) if it addressed both its *salient attributes* and its *sphere of influence* (Baggetta & Alexander, 2016). Next, the explicit definitions were further examined to identify whether the authors stated a definition of SO supported *with* or *without* citing the previous references. If no citations were given with an explicit definition, it was coded as *explicit-author developed (Ea)*; on the other hand, if the authors had cited references from past studies, then the definitions were coded as *explicit-referential (Er)*. Moreover, in cases where the authors had utilized the reference support to explicitly define SO, the source is mentioned in the table along with the definition.

In addition to coding all explicit definitions, the remaining definitions were coded as implicit (I) when the author did not explicitly define the SO concept or, otherwise, had just described the intended meanings of SO indirectly. Next, the implicit (I) definitions were further categorized into *implicit-conceptual (Ic)* – when the intended meanings are communicated through some words or phrases, *implicit-referential (Ir)* – when the author(s) provided any reference to communicate SO, and *implicit-operational (Io)* when the author(s) did not provide any definition of SO (directly or indirectly), yet the concept was just

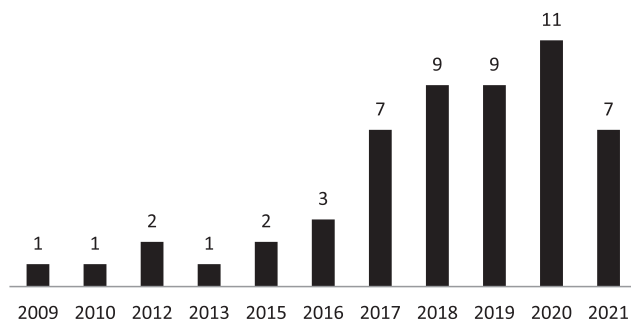


Fig. 3. Year-wise publication frequency.

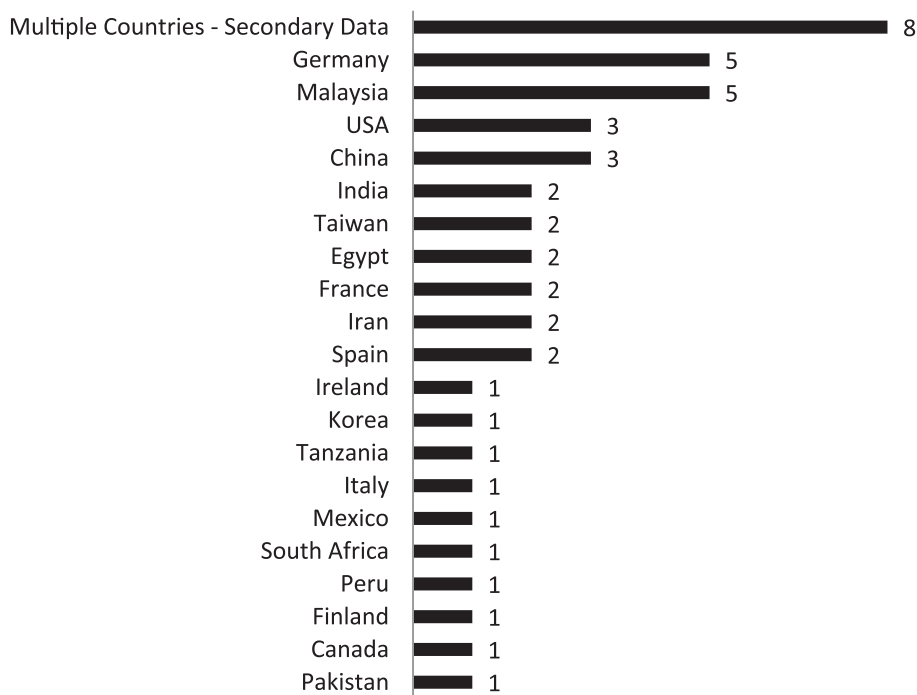


Fig. 4. Country-wise publication.

operationalized with a scale and/or its measurements. More interestingly, we also found that much of the empirical research does not define, or utilize a range of definitions without selecting one on which to frame the particular study. Table 1 presents all the definitions of SO used in previous literature, providing details of the author and the year of publication corresponding to the definitional explicitness, the terminology used, and whether SO has been conceptualized at an individual level or the firm level.

#### 4.3. Assessment/measurement of the SO construct

Once the nature and conceptualization of SO have been clarified, the subsequent fundamental issue with the SO construct is the methods and measures used in previous research. In past studies, some scholars have highlighted the measurement concerns regarding SO that need to be resolved for further advancements in this field of study (Khizar et al., 2021; Parento et al., 2021). To address this issue, this section highlights the detailed analysis of how the concept of SO has been assessed and/or measured by the scholars in the existing body of empirical research. Results in this section are categorized as follows: (i) research methods, (ii) empirical base, and (iii) measurement scales that have been utilized in the existing SO research.

### 5. Research methods

We found that five (9%) studies in our sample are purely conceptual or theoretical (e.g., Amankwah-Amoah & Syllias, 2020; Criado-Gomis et al., 2017; Parente et al., 2018) and all the remaining studies (48, 91%) are empirical (Fig. 5a). Given that five studies did not operationalize and/or measure the SO construct, therefore, these theoretical papers were excluded from this part of the analysis to focus only on empirical studies that have utilized SO measurement. However, 48 articles from our selected sample fulfilled this additional criterion (empirically investigated SO and employed certain measurement methods); thus, they were retained for further review and analysis.

Subsequently, empirical studies were categorized in terms of, qualitative – that measured SO construct through qualitative methods, quantitative – that measured SO construct through quantitative

methods, and mixed methods – that employed both qualitative and quantitative methods. Fig. 5b clearly shows the dominance of quantitative methods in our selected sample of empirical studies (n = 42, 88%) while qualitative methods were used only in four studies (8%). Moreover, a mixed-method approach was found in only two papers. Regarding data collection techniques, our review highlighted that the survey technique (e.g., self-administered, email, online) was intensively employed in the majority of the quantitative studies. We also found that some papers in our review utilized large-scale secondary data for the operationalization and measurement of SO. In addition, qualitative studies have predominantly relied on interviews as the major source of data collection whereas a few studies also employed case study research designs.

#### 5.1. Empirical base

Fig. 6 depicts the statistics in terms of the studies' subjects. We found that more than half of the empirical studies (29, 60%) included in this SLR collected data from top management or entrepreneurs, followed by students (8, 17%), and large-scale secondary data (7, 15%). Only two empirical studies (4%) collected data from employees and two studies (4%) utilized data collected from customers and households.

#### 5.2. SO measurements

Our review highlighted that most of the articles (80%) conceptualized the SO construct as multi-dimensional and the remaining studies conceptualized SO as either a unitary or single dimensional construct or simply did not discuss the unitary or non-unitary specifications. The results show that 20 different measurement scales/models of SO have been utilized (see Table 2). However, two models were found to be most cited in different studies. The remaining articles (n = 10) proposed a uni-dimensional or multi-dimensional measurement model of SO. However, these studies developed measurement models that differ in the sense that they employed different components and on the specifications of whether the utilized measurement model is reflective or formative. For SO measurements, the scale of Kuckertz and Wagner (2010) is considered a pioneer in using the term “sustainability orientation” and



**Table 1**  
SO definitions extracted from the reviewed articles.

#	Author/Year	Term used	Level	Theory	Clarity	Definition
1	Kuckertz and Wagner (2010)	Sustainability Orientation	I	Sustainable Entrepreneurship	I (C)	“...Underlying attitudes and convictions”  “Individuals with stronger sustainability orientations are precisely those that value non-monetary benefits, as well as existence and option values with regard to environmental goods”.
2	Ahmad, Rahman, Rajendran, and Halim (2020)	Sustainability Orientation	I O	Resource-Based View (RBV), Upper Echelons Theory	E (R)	“...refers to the <b>belief</b> in the integration of <b>environmental and societal</b> considerations in business operations” (Kuckertz & Wagner, 2010).
		Sustainable Orientation		(UET), Institutional Theory		“...it demonstrates the <b>readiness</b> of an organization to <b>implement sustainability-related</b> initiatives (Hooi, Ahmad, Amran, & Rahman, 2016)”.
3	Hooi et al. (2016)	Sustainability Orientation	I O	Resource-Based View (RBV), Upper Echelons Theory	E (R)	“...refers to <b>belief</b> in the integration of <b>environmental and societal</b> considerations in business operations (Kuckertz & Wagner, 2010) and demonstrates the readiness of the organization to <b>implement sustainability-related</b> initiatives (Tata & Prasad, 2015)”.
		Sustainable Orientation		(UET)		“... SO is comprised of (i) generation of intelligence pertained to creating opportunities and managing risks related with both present and future initiatives of economic, social and environmental progression; (ii) the diffusion of that acumen across departments; and (iii) the organization’s receptiveness to it”(Dacko, Claudy, Garcia, & Wilner 2013)
4	Seidel et al. (2018)	Sustainable Management Orientation	I		E (R)	“... <b>individuals’ inclination</b> to direct their attention to management practices which allow the achievement of <b>economic</b> growth through, the demonstration of <b>environmental</b> integrity and <b>social</b> responsiveness” (Louche et al., 2010, p. 97).
5	Fichter and Tiemann (2020)	Sustainability Orientation	I	Framing Theory, System Support Theory	I O	<i>General sustainability orientation</i> : “Attitudes in regard to the relevance and valuation of sustainability and sustainability goals, in general, are located at this most abstract level. Here sustainability is related to nature and society as a whole” <i>Entrepreneurial sustainability orientation</i> : “Kuckertz and Wagner (2010) revealed that sustainability-oriented individuals are not only more likely to recognize a higher number of sustainability-related entrepreneurial opportunities but have also been found to be more ambitious in acting upon the opportunities identified. Here sustainable orientation is conceptualized more concretely and is specifically related to the role of companies and entrepreneurship in contributing to and achieving sustainability goals”.
		-General -Entrepreneurial				“...the <b>active and committed decision-making</b> of an organization and its whole supply chain about the <b>economic, social, and environmental issues</b> ”. (Pagell & Wu, 2009)
6	Emamisaleh and Rahmani (2017)	Strategic Sustainability Orientation	O	Resource-Based View (RBV), Institutional Theory	E (R)	“...is often translated into, offering added value to ‘loyal’ customers in an attempt to sustain long-term relationships”.
7	Vatamanescu et al. (2017)	Sustainability Orientation	O		I (C)	“...emerges as a second-order latent variable from the interrelations between the psychological first-order factors of sustainability”.
8	Corral-Verdugo et al. (2009)	Pro-Sustainability Orientation	I		I (O)	“...founders of sustainable enterprises (green, social or both) have a sustainability orientation (SO) comprising values that shape formally and informally the decision-making processes and policies of the firm and the logic they use to choose between competing priorities”.
9	DiVito and Bohnsack (2017)	Sustainability Orientation	I	Sustainable Entrepreneurship	I (C)	“...refers to the <b>managerial perception</b> of the importance of <b>environmental and social</b> issues encountered by firms”.
10	Shou et al. (2019)	Sustainability Orientation	O	Strategic Choice Theory (SCT)	E	“...it represents the extent to which a firm considers sustainability as a competitive priority”.
11	St-Jean and Labelle (2018)	Sustainable Orientation Sustainability Orientation	I	Socio-cognitive Career Theory (SCT)	E (R)	“...refers to a <b>person’s pro-environmental and pro-social values</b> and implies positive <b>attitudes</b> towards the <b>environment and society</b> as well as a strong opposition to behaviors that can alter their state (Corral-Verdugo et al., 2009)”.
12	Claudy et al. (2016)	Sustainability Orientation	O	Natural Resource-Based View (NRBV)	E (R)	“...the overall <b>proactive strategic stance</b> of firms towards the integration of <b>environmental [and social]</b> concerns and practices into their strategic, tactical and operational activities.” Roxas and Coetzer (2012, p. 464)
13	Sun, Kim, and Kim (2014)	Sustainable Orientation	O		E (R)	“... <b>firms’ attitudes</b> toward integrating <b>environmental, social, and economic</b> concerns and practices into their strategic and marketing activities” Banjo & Alan (2012)

(continued on next page)

Table 1 (continued)

#	Author/Year	Term used	Level	Theory	Clarity	Definition
		(Customer Point of View)				
14	Dabija, Postelnicu, Dinu, and Mihaila (2017)	Sustainability Orientation	O		I (R)	"...customers' evaluations regarding firms' attitudes toward sustainability and activities in balancing environmental, social, and economic needs".
15	Calic and Mosakowski (2016)	Sustainability Orientation	I		E (R)	"...capacity to support the economic, social and cultural aspects as well as environment protection over a long period of time" (Breslin, 2014). "...embracing goals or objectives that focus on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where the gain is broadly construed to include economic and non-economic gains to individuals, the economy, and society" (Shepherd and Patzelt, 2011, p. 137)".
16	Hong et al. (2019)	Sustainability Orientation Strategic Sustainability Orientation	O	Upper Echelons Theory, Strategic Intent, and Performance Chains	I (R)	"...clarifying environmental and social corporate intent, priorities and value through clarifying order winner requirements to strategic suppliers Burmitt et al. (2002), Figge et al. (2002), Hahn et al. (2014)".
17	Wagner (2012)	Sustainability Orientation	I	Sustainable Entrepreneurship	O	"...Underlying attitudes and convictions" -operationalized in agreement with Kuckertz and Wagner (2010)
18	Lei, Wu, and Fu (2019)	Sustainability Orientation	O	Resource-Based View (RBV)	I (R)	"...organizational willingness to act on a variety of sustainability-related issues in their operations". (Roxas & Coetzer, 2012)
19	Shashi, Cerchione, Centobelli, and Shabani (2018)	Sustainability Orientation	O		E(R)	"...is the identification of critical environmental issues faced by the firm". Banerjee et al. (2003), "...intrinsic values and ethical standards of company commitment towards environmental protection". Chan (2010)
20	Aboelmaged and Hashem (2019)	Sustainable Orientation	O	Natural Resource-Based View (RBV), Knowledge Capability	E (R)	"...a proactive organizational capability that reflects the continuous tracking of existing and upcoming environmental opportunities in order to evade undesired environmental consequences" (Graham & Potter, 2015).
21	Reynolds, Sheehan, and Hilliard (2018)	Sustainability Orientation	I	Sustainable Entrepreneurship	E	"...underlying attitudes and convictions" about issues of "environmental protection and social responsibility,"
22	Tata and Prasad (2015)	Sustainability Orientation	O		E	"...refers to the extent to which an organization demonstrates readiness to implement sustainability initiatives".
23	Du, Yalcinkaya, and Bstieler (2016)	Sustainability Orientation	O	Resource-Based View (RBV)	I (R)	"...the organizational culture, principles, and behaviors that induce organizational members to be aware of and willing to incorporate and act on a variety of stakeholder- and sustainability-related issues related to their operations". (Ferrell et al., 2010; Hult, 2011)
24	Eijdenberg (2019)	Sustainability Orientation	I		I	"...owner's willingness to address environmental and social issues". "...the entrepreneur's (i.e., the MSME-owner in this paper) attitude towards ecological, social, and economic concerns". (Kuckertz & Wagner, 2010; Roxas & Coetzer, 2012).
25	Parente et al. (2018)	Sustainable Orientation	O	CSR Theory	I (R)	"...a firm-level strategic orientation that reflects the firm's philosophy of doing business in an environmentally sustainable way". Roxas and Coetzer (2012, p. 464).
26	Eisenbeiss (2012)	Responsibility and sustainability orientation	I	Ethical Leadership	E	"...refers to leaders' long-term views on success and their concern for the welfare of society and the environment".
27	Wang, Feng, and Lawton (2017)	Responsibility and sustainability orientation	I	Ethical Leadership		"...refers to leaders' long-term views on success and their concern for the welfare of society and the environment". (Eisenbeiss, 2012, p. 796).
28	Soomro, Ghumro, and Shah (2020)	Sustainability Orientation	I	Social Cognitive theory/ green entrepreneurship	I (R)	"...is associated with the ideology that merges environmental and societal reflections in business activities (Kuckertz & Wagner, 2010)".
29	Zhao, Yang, Shu, and Liu (2021)	Sustainability Orientation	O		E (R)	"...firm's propensity to practice sustainability". "...the extent to which the firm's overall strategic posture, decision-making philosophies, and managerial preferences involve integrating environmental and social issues into its business activities (Cheng, 2020; Du et al., 2016; Van Marrewijk, 2003)".
30	Abdullahi et al. (2018)	Strategic Sustainability Orientation	O	Resource-Based View (RBV)	E (R)	"...the extent to which an organization is proactive and committed to economic, environmental, and social priorities in its decisionmaking. (Pagell & Wu, 2009)".

-other referential definitions are also given but not according to the triple bottom line, such as "strategy-making process"/"entrepreneurial strategic posture"

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Table 1 (continued)

#	Author/Year	Term used	Level	Theory	Clarity	Definition
31	Muhammad Auwal, Mohamed, Nasir Shamsudin, Sharifuddin, and Ali (2020)	Strategic Sustainability Orientation	O		E (R)	"...the extent to which an organization is <b>proactive and committed to economic, environmental, and social</b> priorities in its decision making. (Pagell & Wu, 2009)".
32	Abdelnaeem and El-Bassiouny (2020).	Sustainability orientation	I	Schema Theory	I (R)	"... reflects <b>entrepreneurs' tendency</b> to match their <b>economic</b> objective with preserving the <b>environment</b> and the <b>society</b> (Calic & Mosakowski, 2016)". "...includes the three dimensions of the triple bottom line (Calic & Mosakowski, 2016)".
33	Dickel and Eckardt (2021)	Sustainability orientation	I	Theory of Planned Behavior (TPB) / Entrepreneurial Event Model (EEM)	E (R)	"...an <b>individual's concern</b> about <b>environmental</b> protection and <b>social</b> responsibility (Kuckertz & Wagner, 2010; Sung & Park, 2018)".
34	Shahidi (2020)	Sustainability orientation	I	Theory of Planned Behavior (TPB)	I (R)	"... <b>beliefs</b> in the importance of considering <b>sustainable development</b> -related concepts in a firm (Kuckertz & Wagner, 2010)".
35	Jin et al. (2019)	Sustainability orientation	O	Resource-Based View (RBV)	E (R)	"...the extent to which firms are actively integrating sustainability principles into their business purpose' (Claudy et al., 2016)".
36	Cheng (2020)	Sustainability orientation	O	Resource-Based View (RBV)	E (R)	"...the overall proactive strategic stance of firms towards the integration of environmental [and social] concerns and practices into their strategic, tactical and operational activities" Roxas and Coetzer (2012) (p. 464). "...consists of deeply rooted values and beliefs that provide behavioral norms that shape a firm's sustainability activities (Calic & Mosakowski, 2016; Varadarajan 2017)".
37	Gagnon et al. (2013)	Sustainable orientation	I		I (R)	"...an <b>individual's belief</b> system that is directed toward sustainability and its tenets (Kuckertz & Wagner, 2010; Gagnon 2012)".
38	Jahanshahi and Brem (2017)	Sustainable orientation	I	Upper Echelons Theory (UET)	I (R)	"...refers to the TMTs' strategic orientation toward environmental protection and social responsibility Liu, Phillips, 2010". (wrongly cited at 2 places in their paper)
39	Sung and Park (2018)	Sustainability Orientation	I	Sustainable Entrepreneurship	I (R)	"...refers to the level of concern about the environmental protection and social responsibility of individuals, and consists of items that measure the <b>underlying attitudes and personal traits</b> on environmental protection and social responsibility Kuckertz and Wagner (2010)". "...reflects underlying attitudes and personal traits of environmental protection and social responsibility".
40	Criado-Gomis et al. (2017)	Sustainability Orientation	O		I (R)	"...organizational strategic orientation toward the integration of sustainable interests and practices into strategic, tactical and operational activities. Roxas and Coetzer (2012)".
41	Kautonen et al. (2021)	Sustainability Orientation	O	Stakeholder Theory	E (R)	"... referring to the management's attitude and conviction that the firm should act in ways beneficial for the environment and social welfare (Kuckertz & Wagner, 2010; Mu ~ noz and Dimov, 2015)".
42	Fatoki (2019)	Sustainability Orientation	I	Theory of Planned Behavior (TPB)	E (R)	"...refers to businesses that focus on sustainability". "Kuckertz and Wagner (2010) ascribe SO to entrepreneurs as individuals rather than to businesses, At the individual level, SO is the situation where the owner/manager of a business has a proactive orientation towards societal and environmental issues (Diehl, Greenvoss & Klee, 2015)". "Roxas and Coetzer (2012) describe SO as a business orientation that focuses a company's philosophy on doing business in a socially and environmentally sustainable way".
43	Ahmad, Halim, Ramayah, and Rahman (2015)	Sustainability Orientation	I	Sustainable Entrepreneurship	E (R)	"...the ideology that incorporates environmental and societal considerations in business operations (Kuckertz & Wagner, 2010)".
44	Sivathanu and Pillai (2019)	Sustainability Orientation	O	Resource-Based View (RBV), Upper Echelon Theory (UET)	E (R)	"...is the <b>firm's conviction</b> of the impact of its business activities on the <b>economy, environment, and society</b> and accordingly maneuvers its operations as per the established sustainable development practices and policies (Urban and Heydenrych, 2015; Kuckertz & Wagner, 2010; Tata & Prasad, 2015)". "...includes environmental, economic and social responsibilities of the firm and helps provide competitive advantage (Hart, 1995)".
45	Signori, Flint, and Golicic (2017)	Sustainability Orientation	O		I (R)	"...refers to an organization-wide attitude toward and set of behaviors consistent with all aspects of sustainability (environmental, social, financial) (Bansal, 2003; Kuckertz & Wagner, 2010; Sayem, 2012)".

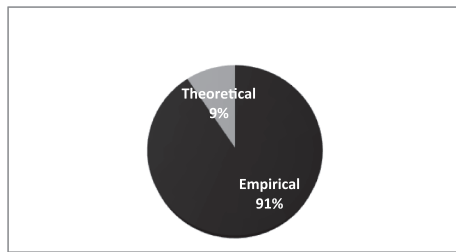


Fig. 5a. Publication type.

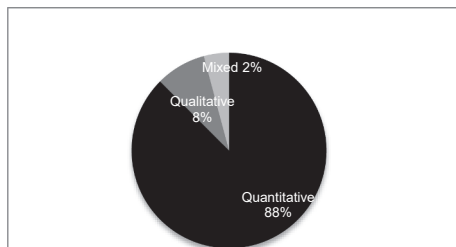


Fig. 5b. Research methods.

attempting the initial conception and operationalization of SO. Kuckertz and Wagner (2010) developed the SO scale using six items as part of their empirical study focusing on the relationship between SO and entrepreneurial intention. They highlighted that no previously established definition of SO existed; thus, they operationalized the concept of sustainability orientation in terms of social responsibility and environmental protection by utilizing six items.

Kuckertz and Wagner (2010) adopted the following perspective:

*“German firms should take an internationally leading role in the field of environmental protection”, “Firms that are environmentally oriented have advantages in recruiting and retaining qualified employees”, “The environmental performance of a company will in future be considered more and more by financial institutions”, “Corporate social responsibility should be part of the foundations of each company”, “I think that environmental problems are one of the biggest challenges for our society”, “I think that entrepreneurs and companies need to take on a larger social responsibility”* (Kuckertz & Wagner, 2010, p. 531).

The scale developed by Kuckertz and Wagner (2010) is widely recognized and used by scholars and is frequently utilized in empirical studies pertinent to sustainability orientation (e.g., DiVito & Bohnsack, 2017; Gagnon et al., 2013; St-Jean & Labelle, 2018; Sung & Park, 2018; Vatamanescu, Gazzola, Dinc a, & Pezzetti, 2017; Wagner, 2012). Among other cited measures, the scales suggested by Pagell and Wu (2009) and Roxas and Coetzer (2012) were identified as the most cited after Kuckertz and Wagner (2010). However, Roxas and Coetzer (2012) scale covers only one element of the triple bottom line (TBL), and they refer to this as environmental sustainability orientation. Likewise, the scale by

Pagell and Wu (2009) is not included in this study because they did not explicitly mention the sustainability orientation, and the domain of construct of their study was out of the boundaries of strategic orientation.

### 5.3. The development of the conceptual framework

Based on our critical review and evaluation of the various approaches that researchers have adopted to define, conceptualize, and measure SO in past studies, we develop a comprehensive synthesis to frame a better understanding of the complexity and richness in SO research. The proposed framework (Fig. 7) encompasses various considerations, such as: i) conceptual and operational domain, ii) theoretical perspectives, iii) antecedents, iv) outcomes, and v) contextualization. In this regard, the proposed framework offers various conceptual and measurement implications by answering the unanswered question: *What is SO and what is SO not?* To this end, we discuss our findings in terms of how previous studies have utilized the convergence and divergence of SO and provide a more granular understanding of SO.

### 5.4. Level of conceptualization and measurement of SO

We categorize existing conceptual and measurement approaches of SO into two main research streams. For instance, a stream of researchers has considered SO as an organization-level construct, such as organizational culture or business philosophy (e.g., Roxas & Coetzer, 2012; Shou et al., 2019; Tata & Prasad, 2015). Contrary to this viewpoint, another school of thought prevails which examines SO at an individual level, assigning it to the individuals’ values and beliefs (e.g., Kuckertz & Wagner, 2010). Moreover, given that a particular measurement model cannot be inherently appropriate (Covin & Wales, 2012), researchers have favored measuring the SO construct both reflectively and formatively. Another measurement implication was observed regarding the dimensionality; that is, although the use of the multi-dimensional perspective has increased in recent years (e.g., Liang, Hu, & Meng, 2020), we found that researchers often adopt a uni-dimensional view of SO (e.g., Abdullahi, Mohamed, Shamsudin, Sharifuddin, & Ali, 2018).

These findings point toward the inability of prior researchers to draw a consensus on the conceptual and measurement domains of SO. In agreement with Covin and Wales (2019), we posit that, regardless of the measurement decisions, a latent construct (e.g., SO) exists for itself depending upon how this has been conceptualized in a given study. A given research situation or research tradition may favor its conceptions and measurement decisions (Wilcox, Howell, & Breivik, 2008). We suggest that SO can be conceptualized and measured both at individual and firm level, depending on the particular research questions and theoretical groundings.

### 5.5. Elements of SO – TBL perspective

There exists empirical evidence of investigating individual

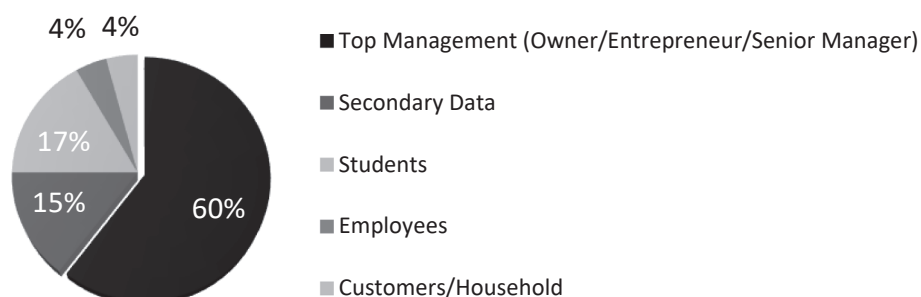


Fig. 6. The studies’ subjects.

**Table 2**  
Measurement approaches in SO research.

Author/Year	Level of analysis	Data Collection	Empirical Base		Scale/tool Characteristics	Data Analysis	Scale Items
			Respondents profile	Country profile			
DiVito and Ingen-Housz (2019)	O	Semi-structured interviews	Top Management Single case study (denim city)	Netherland	QL	Thematic/ Content Analysis	QL
Sivathanu and Pillai (2019)	I	Survey	Entrepreneurs	India	Items = 3 Reflective Scale = 5-point	PLS-SEM	Adapted from Kuckertz and Wagner (2010)
Signori et al. (2017)	O	Interviews Qualitative	Owners/Managers Wine Industry	Australia, France, Germany, Italy, New Zealand, Slovenia, US	QL	QL	QL
Ahmad et al. (2015)	I	Survey	Students	Malaysia	Items = 10 Scale = 5-point (SA – SD)	PLS	“Adopted from Lorsch and Morse (1974), Westerberg et al. (1997), and Sitkin and Weingart (1995) which have been used to integrate a perception of risk with the perception of success”.
Hooi et al. (2016)	I	Survey	Owners/Managers SMEs	Malaysia	Items = 6 Scale = 5-point (SA – SD)	SEM-PLS	Adapted from Kuckertz and Wagner (2010)
Ahmad et al. (2020)	I	Survey	Top Management Manufacturing SMEs	Malaysia	Items = 6 Scale = 5-point (SA – SD)	PLS-SEM	Adopted from Kuckertz and Wagner (2010)
Kuckertz and Wagner (2010)	I	Email Survey	Students Alumni	Germany	Items = 6 Scale = 5-point (not at all accurate - very accurate.)	Descriptive  ordinal probit model	1)“German firms should take an internationally leading role in the field of environmental protection”; 2)“Firms that are environmentally oriented have advantages in recruiting and retaining qualified employees”; 3)“The environmental performance of a company will in future be considered more and more by financial institutions”;4) “Corporate social responsibility should be part of the foundations of each company”; 5)“I think that environmental problems are one of the biggest challenges for our society”; 6)“I think that entrepreneurs and companies need to take on a larger social responsibility”.
Du et al. (2016),	O		Multiple Industry Multiple Country Secondary Data 2012 CPAS		Items = 10 Scale = 5-point (not at all - extremely)	Multiple Regression	<b>How important are the following to your company?</b> i)“ Environmental sustainability”; ii)“ Social sustainability”; iii)“ Sustainability criteria for New Product Development”; iv)“ Measuring New Product progress on sustainability”; v)“ Future importance of sustainability-type criteria” <b>To what degree does your company do the following?</b> vi)“ Develop sustainability policies”; vii)“ Manage your product’s carbon footprint”; viii)“Use a triple bottom line for product planning; ix)Include sustainability in your product development budget”; x)“ Select suppliers and partners based on sustainability criteria”
Vastola and Russo (2021)	I	Semi-structured interviews	Top Executives Multi-industry	France	Interview protocol	Content Analysis	QL
Zhao et al. (2021)	O	Survey In-depth Interviews	Owners/Managers LinkedIn professional groups	USA/India	Items = 10 Scale = 7-point (SA – SD)	SEM	“Adopted from Du et al. (2016), we measured SO by including economic, environmental, and social aspects”.

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Table 2 (continued)

Author/Year	Level of analysis	Data Collection	Empirical Base		Scale/tool Characteristics	Data Analysis	Scale Items
			Respondents profile	Country profile			
Jahanshahi and Brem (2017)	I	Survey	Top Management Manufacturing SMEs	Iran	Items = 6 Scale = 5-point (not at all accurate - very accurate)	Hierarchical regression	Adopted from Kuckertz and Wagner (2010)
Seidel et al. (2018)	I	Survey	Students	Germany USA Indonesia	Items = 11 Scale = 7-point scale	SPSS Process Macro	“Students were asked to take the role of a manager and to state which managerial practices they would adopt or not (i.e., their inclination to engage in the described behavior)” ESG: “E1)Sustainable use of natural resources, E2)Cooperation with environmental organizations, E3) Product safety, S1)Strengthening local and regional economic development, S2)Relationships with the social environment and local communities, S3)Cooperation with organizations serving civil society, S4)Cooperation with schools, universities, and institutions, S5)Taking responsibility for employees, S6) Company health policy/Safety at work, G1)Ethical-moral business operations, G2)Controlling suppliers relating to ethical standards Governance”
Abdelnaeim and El-Bassiouny (2020).	I	Survey	Entrepreneurs & future entrepreneurs	Egypt	Items = 6 Scale = 7-point scale (SA – SD)	Regression, ANOVA & t-test	Adopted from Kuckertz and Wagner (2010)
Gerd, Wagner, and Schewe (2019)	O	Publicly available reviews.	Secondary Data - Customer’s Online Reviews  Hospitality Industry  Secondary data	Germany		content analysis (coding hotel reviews)  Hierarchical MRA	“The sustainability orientation is measured as a binary variable, distinguishing hotels that engage in sustainable management from their assigned conventional peers”  “Coders were asked to distinguish between a <b>positive sentiment</b> (a statement that praises either (1) the implementation of a certain sustainability measure or (2) how that measure is performed) or a <b>negative sentiment</b> (a statement that criticizes, (3) the absence of a sustainability measure or (4) how that measure is performed or (5) the measure itself and/or its consequences)”
Goffi, Masiero, and Pencarelli (2018)	I	Online Survey	Tour Operators/ Top Management  Tourism Industry  Multiple Country		Items = 9 Scale = 5-point (SA – SD)	ANOVA/t-test	“1)Sustainability is important to receive good satisfaction ratings from our customers; 2) Sustainability for us is an important marketing tool;3) Sustainability is important for a good reputation and avoidance of negative publicity;4)Sustainability is considered important by travel agencies we work with; 5) Sustainability has become part of our management process; 6)We play a key role in the sustainability of the destinations; 7) Sustainability embodies our vision and values; 8)Sustainability is for us an important strategy of cost reduction; 9)Sustainability is important to differentiate ourselves from the market”

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Table 2 (continued)

Author/Year	Level of analysis	Data Collection	Empirical Base		Scale/tool Characteristics	Data Analysis	Scale Items
			Respondents profile	Country profile			
Fiore, Silvestri, Contò, and Pellegrini (2017)	O	Online Survey	case study the Apulia region  Managers  Wine Industry	Italy	Items = Scale =	Pearson Correlation	Orientation to sustainability (Gabzdyllova et al., 2009; Zucca et al., 2009); “EnvRes- the importance that is assigned to the concern for the natural environment [Likert rating scale variable]; Green Act - the importance that is assigned to the implementation of green activities promotion Org Cer- if organic certification is adopted [dummy variable]; SustPrac- if sustainable practices (emissions monitoring, bottles recycling, optimizing the use of water resources) are implemented in the wineries 141 [dummy variable]; GIS_IT - if GIS and IT technologies are adopted in the winery [dummy variable]”
Fatoki (2019)	I	Survey	Students	South Africa	Items = 6 Scale = 5-point (SA – SD)	Regression	Adopted from Kuckertz and Wagner (2010)
Dickel and Eckardt (2021)	I	Survey	Students	Germany	Items = 3 Scale = 7-point scale	ANOVA/ Regression	“3 items from Kuckertz and Wagner (2010). The average score of the three items was used as the overall measure of sustainability orientation”.  “1)German firms should take an internationally leading role in the field of environmental protection. 2)Environmental problems are one of the biggest challenges for our society. 3)Entrepreneurs need to take on greater responsibility for social and environmental issues”. “Adopted from Mu ~ noz and Dimov (2015), Sample item: ‘I strongly believe in the power of our business to contribute to solving many of the problems we have as a society’.
Kautonen et al. (2021)	O	Online Survey	Top Management  Manufacturing SMEs	Finland	Items = 6 Scale = 7-point (SA – SD)	OLS	“E1)I contribute financially for the services to collect garbage from my work area; E2)I take actions so as to not pollute the environment; E3) I reuse materials — for example, plastic bags — within my business; E4)I do not throw food away’ E5)I cook in an environmentally friendly way, using husks or gas, for example; S1)I support the care of street children in the community; S2)My business gives incentives to employees; S3)I donate money to charity organizations in the community, such as the church or hospitals; S4) I support the underprivileged directly, including by giving food to the disabled; S5)I loan small amounts of money to fellow businesses (i.e., social orientation)”
Eijdenberg (2019)	I	Survey	Owner/Managers  MSMEs	Tanzania	Items = 10 Scale = 5-point scale (SA – SD)	Regression t-test	“E1)I contribute financially for the services to collect garbage from my work area; E2)I take actions so as to not pollute the environment; E3) I reuse materials — for example, plastic bags — within my business; E4)I do not throw food away’ E5)I cook in an environmentally friendly way, using husks or gas, for example; S1)I support the care of street children in the community; S2)My business gives incentives to employees; S3)I donate money to charity organizations in the community, such as the church or hospitals; S4) I support the underprivileged directly, including by giving food to the disabled; S5)I loan small amounts of money to fellow businesses (i.e., social orientation)”
Shahidi (2020)	I	Online Survey	Students	France	Items = 4 Scale = 4-point scale (SA – SD)	SEM	“operationalized according to Muñoz and Dimov (2015), Kuckertz and Wagner (2010) 1-I want to contribute to the sustainable development of society; 2)The sustainable

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Author/Year	Level of analysis	Data Collection	Empirical Base		Scale/tool Characteristics	Data Analysis	Scale Items
			Respondents profile	Country profile			
Obal, Morgan, and Joseph (2020).	O	Secondary, PDMA/CPAS Survey		Multiple	Items = 10 Scale = 5-point scale (Extremely – not at all)	SEM	development dimension is an important concern for the execution of my plans; 3)I have included the concept of sustainable development in my plan; 4)My plan is good for sustainable development” Adopted from Du et al. (2016)
Liu and Huang (2020)	O	Survey	Managers (cultural and creative tourism)	Taiwan	Items = 1 Scale = 7-point (SA – SD)	SEM	“measured using one item that demonstrated the concept of sustainable development”. “We always seek to balance mission and financial viability in the organization, We seek sustainable sources of income to remain viable”.
Emamisaleh and Rahmani (2017)	O	Survey	Senior management  Food Industry	Iran	Items = 12 Scale = 5-point  Scale References: Defee et al. (2009), Pagell and Wu (2009) Kroes and Ghosh (2010)	SEM/PLS	“Economic orientation:1)Our company’s mission fully considers the importance of financial performance; 2)Our company commits to the improvement of market share; 3)All of our employees know our financial priorities; 4)Our company employs the results of short-term productivity for operational decision-making <b>Environmental orientation:</b> 1)Our company’s mission fully considers the importance of environmental performance; 2)Our company commits to pollution control; 3)All of our employees know our ecological priorities; 4)Our company assesses the environmental effects of operational decisions <b>Social orientation:</b> 1)Our company supports social philanthropy dedicatedly; 2)Our company enhances social responsibility dedicatedly; 3)The value of social responsibility is clear to all of our employees; 4)Our company assesses social results of our operational decisions”
Vatamanescu et al. (2017)	O	Email Survey	SME Owners  Service Sector SMEs	Romania	Items = 6 Scale =		“i)Our products and/or services are harmless in terms of societal and environmental issues; ii)Our products and/or services are liable to generate long-term profit; iii) Our products and/or services yield benefits to the larger community; iv)It is important for our firm to treat the workforce and partners with the due respect;v)It is important for our firm to establish long-term social goals; vi)It is important for our firm to be actively involved in the community growth”. Scale References: Hapenciu, C.V.; Pinzaru, F.; Vatamanescu, E.-M.; Stanciu, P. (2015); Vatamanescu, E.-M.; Pinzaru, F.; Andrei, A.G.; Zbucnea, A.(2016); Kuckertz, A.; Wagner, M. (2010); Soto-Acosta, P.; Cismaru,

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Author/Year	Level of analysis	Data Collection	Empirical Base		Scale/tool Characteristics	Data Analysis	Scale Items
			Respondents profile	Country profile			
Corral-Verdugo et al. (2009)	I			Household Mexico			D.-M.; Vatamanescu, E.-M.; Ciochina, R.S.(2016)
DiVito and Bohnsack (2017)	O	Telephone Survey + Semi Structured Interviews	Top Management  Fashion Industry/Apparel	Netherland	Scale References: (Venkataraman, 1989; Kuckertz & Wagner, 2010;Elkington, 1994).  Likert Scale	QL/QN	“Included items on <b>ecological, social and economic</b> tradeoffs” “Economic:1)We often face the challenge of being less sustainable but make more money; 2)We would accept less profit rather than offer less sustainable products, Social: 1)We (would) work with people who share the same values instead of individuals who are less willing to act sustainably; 2)We (would) choose high delivery and transport costs to support local communities in emerging countries rather than produce locally or nearby, Ecological: 1)We (would) use less sustainable production methods and materials if it saves costs; 2)We sometimes use airfreight to transport goods instead of sea freight; 3)When consumer demand is greater than our production capacity, we choose a less environmentally sustainable factory and offer a less sustainable product”
Cheng (2020)	O	Survey	Top Management  Technology Firms	Taiwan	Items = 10	OLS-Regression	Adapted from the Comparative Performance Assessment Study (2012)
Fichter and Tiemann (2020)	I	Online Survey	Students, New Entrepreneurs, Serial Entrepreneurs	Germany	Items = 3 + 3 Scale = 6-point scale	<b>SEM - PLS</b>	Same items from Du et al. (2016) “GSO adapted from Kuckartz and Rheingans-Heintze (2006) while ESO adapted from Kuckertz and Wagner (2010)” “GSO1: There should be a just relationship between generations; we should not loot the environment at the expense of future generations. GSO2: Trade between the rich countries of the planet and developing nations should be fair. GSO3: We should not consume more resources than can grow back again” “ESO1: Companies should give a high priority to environmental protection. ESO2: Social responsibility should be the fundamental basis of every company. ESO3: Founders and companies should regard ecological and social sustainability as an opportunity for their entrepreneurial activities” “It was measured in terms of the priorities given to <b>environmentally sound products</b> and processes and committed <b>social responsibility</b> (Gimenez et al., 2012; Gualandris et al., 2014). Consider the importance of the following attributes to win orders from your major customers (importance in the last three years”. 1. More environmentally sound
Shou et al. (2019)	O	Secondary Data (IMSS Survey – 2013)	Multiple Industry	Multiple countries	Environmental concern Society concern  (1 = not important; 5 = very important)		

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Table 2 (continued)

Author/Year	Level of analysis	Data Collection	Empirical Base		Scale/tool Characteristics	Data Analysis	Scale Items
			Respondents profile	Country profile			
St-Jean and Labelle (2018)	I	Survey	Students/potential Entrepreneurs	Canada	Items = 6 Scale = 7-point	hierarchical regression	products and processes; 2. Higher contribution to the development and welfare of the society; 3. More safe and health respectful processes Adopted from Kuckertz and Wagner (2010).
Claudy et al. (2016)	O	Secondary data (CPAS Survey – 2012)	Multiple Industry	Multiple Country	Items = 9 Scale = 5-point (not at all important, - extremely important)	SEM	“Sustainability orientation is a second-order construct reflected by two dimensions, <b>sustainability culture</b> , and <b>sustainability practices</b> ” “Sustainability culture (5-items): Participants were asked how important, for example, environmental or social sustainability was to their company” “Sustainability practices (4-items): asking companies how important specific sustainability practices such as carbon footprint analysis, triple-bottom-line criteria, or sustainability auditing of suppliers were during the NPD process” Orientation towards: -employees and performance -qualitative and innovative program -students -society and environmental protection
Dabija et al. (2017)	O						
Hong et al. (2019)	O	Secondary data (IMSS Survey)	Manufacturing Secondary data (IMSS Survey)	Multiple countries	Scale = 5-point (1 = least important, 5 = most important)	SEM	“To select items that assess SSO, the past literature regarding SSO was examined (Burritt et al., 2002; Figge et al., 2002; Hahn et al., 2015), Hahn et al. (2014), and the items were chosen from the IMSS VI survey” Defining order winning attributes from major suppliers. “Environmentally sound products and processes, Contribution to societal welfare, Safe and healthy business processes”
Lei et al. (2019)	O	Secondary data	Secondary data manufacturing	China		Regression  textual analysis of letters to shareholders	
Wagner (2012)	I	Survey (Online)	Students/potential Entrepreneurs	Germany	Items = 6 Scale = 5-point (1 = not at all accurate 5 = very accurate)	Probit estimation/ through STATA	Adopted from Kuckertz and Wagner (2010)
Shashi et al. (2018)	O	Email Survey	Managers Manufacturing SMEs	India	Items = Scale = 7-point (SA – SD)	SEM	“Considered the SO as the ethical standards and the internal and external values implemented by the firms for the protection of the environment”
Aboelmaged and Hashem (2019)	O	Email Survey	Owners/Managers SMEs Multiple Industry	Egypt	Items = 7 Scale = 5-point (SA – SD)	PLS-SEM	Adapted from Mariadoss et al. (2016) Adapted from Gabler et al., (2015) “i)My firm has a clear policy statement urging environmental awareness; ii) Environmental preservation is a high priority in my firm; iii)Preserving the environment is a central value in my firm; iv)My firm promotes environmental preservation as a company goal; v)My firm is

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Author/Year	Level of analysis	Data Collection	Empirical Base		Scale/tool Characteristics	Data Analysis	Scale Items
			Respondents profile	Country profile			
Reynolds et al. (2018)	I	Interviews, observation and documents	multiple case study	Ireland		Thematic Analysis	responsible for preserving the environment; vi)People expect my firm to be environmentally-conscious; vii)My firm struggles for an image of environmental responsibility”
Soomro et al. (2020)	I	Survey	Sustainable Entrepreneurs Students/Green Entrepreneurs	Pakistan	Items = 10 Scale = 5-point (SA – SD)	Descriptive, Correlation, SEM	Adopted from Lorsch and Morse (1974), Sitkin and Weingart (1995), and Westerberg, Singh, and Hackner (1997).
Abdullahi et al. (2018)	O	Survey	Employees Manufacturing (Herbal Based) SMEs	Malaysia	Items = 3 Scale = 5-point (SA – SD)	SEM	“the extent to which herbal-based SMEs are proactive and committed to SEP towards performance priorities in their decision making having positive SSO as stated by Pagell and Wu (2009)”
Muhammad Auwal et al. (2020)	O	Survey	Leaders/Managers SMEs manufacturing (Herbal Based)	Malaysia	Items = Scale = 5-point 1 = strongly disagree 5 = strongly agree		“Construct of SSO was obtained from the Strategic Orientation Theory (Venkatraman 1989)”
Ruiz-Ortega, Parra-Requena, and García-Villaverde (2021).	O	Survey	Managers  Tourism Sector	Peru	Items = 6	hierarchical regression	Adapted from Kraus et al. (2017); Claudy et al. (2016); Graafland et al. (2004) “i)The objective of fulfilling our social, cultural, and environmental mission is important for the company. ii)Our company often partners with other organizations to strengthen its social mission. iii) We control CO2 emissions and our generated waste and try to reduce them. Iv)We set ourselves important objectives with regard to social and environmental sustainability and incorporate them into our strategic decisions. v)We often hire socially disadvantaged employees (e.g., disabled people, immigrants, elderly people). Vi)We support and encourage our employees to volunteer in social responsibility activities outside the company”
Jin et al. (2019)	O	Secondary data (CPAS Survey)	Multiple Industry	Multiple Country	Items = 10 Scale = 5-point (not at all important - extremely important)		Items selected are in line with existing research (Waddock, 2008).
Gagnon et al. (2013)	I	Online Survey	Top Management Transport/ packaging industry	USA	Items = 6 Scale = 5-point (SA – SD)		Same items from Du et al. (2016) Adapted from Kuckertz and Wagner (2010); Gagnon (2012).
Sung and Park (2018)	I	Survey	Nascent Entrepreneurs Multiple Industry	Korea	Items = 6 Scale = 7-point	PLS	Adopted from Kuckertz and Wagner (2010)
Criado-Gomis, Iniasta-Bonillo, and Cervera-Talet (2018)	I	Survey/ Questionnaire	Top Management/ Directors Multiple Industry	Spain	Items = 4	PLS	4-item scale adapted from the Bos-Brouwers (2010)
Liang et al. (2020)	O	Survey	Consumers	China		ANOVA  Regression	“3 dimensions of corporate sustainable orientation (CSO), i) value, ii)goals, and, iii)structure. Value refers to whether a corporation regards sustainability as a perfect duty or imperfect duty (Perfect duty is 1, otherwise it is 0) Goal refers to whether a

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Author/Year	Level of analysis	Data Collection	Empirical Base		Scale/tool Characteristics	Data Analysis	Scale Items
			Respondents profile	Country profile			
							corporation has clear sustainability goals or not. (Clear goal is 1, otherwise, it is 0) <b>Structure</b> refers to whether a corporation has a well-defined corporate structure related to sustainability and whether or not there is almost no gap in the implementation by members. (Well-defined structure and gap_0 is 1, otherwise it is 0)"

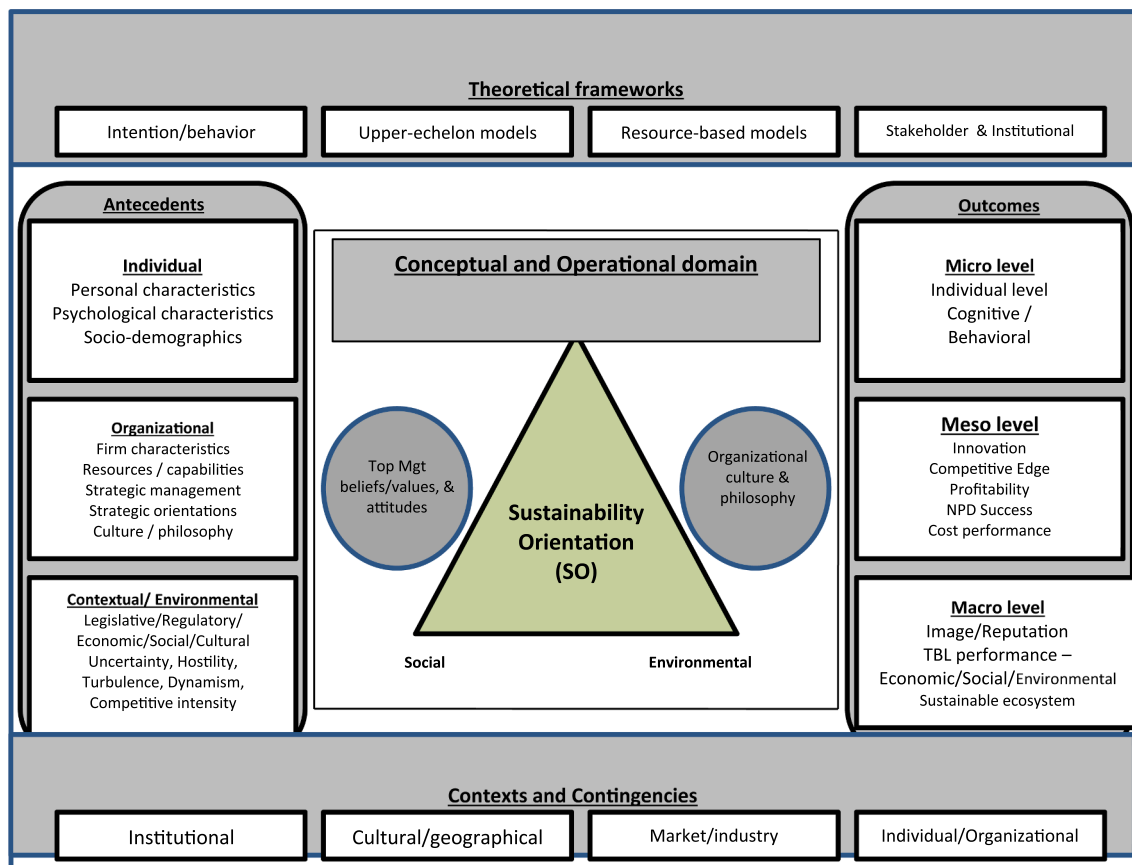


Fig. 7. Conceptual framework of SO.

sustainability aspects, i.e., social or environmental. However, this line of research has resulted in the emergence of individual elements of SO, such as environmental sustainability orientation (e.g., Adomako et al., 2021; Adomako et al., 2019; Roxas & Coetzer, 2012), and social sustainability orientation (e.g., Croom et al., 2018; Nath & Agrawal, 2020). Indeed, all sustainability elements (i.e., economic, social, environmental) are crucial for firms since misconduct in these issues can trigger punishing stakeholder reactions (Gualandris & Kalchschmidt, 2014). In this regard, the concept of SO has grown from being a movement solely focused on environmental concerns to a widely accepted framework related to the decision-making of individuals, business firms, society, and governments to balance the TBL of the current and future generations (Sayem, 2012). We suggest the term ‘sustainability orientation’ as the most appropriate to describe business orientation toward sustainability based on the holistic perspective of including all three pillars of sustainable development, i.e., economy, society, and environment.

5.6. Conceptualizing SO under the umbrella of strategic orientation

Our review indicates the lack of a unified conceptualization of SO. Nonetheless, several theoretical, conceptual, and measurement considerations have arisen as implications of current SO research. Considering these ambiguities in past studies, we posit the concept of SO under the umbrella term of *strategic orientation*. Even though the strategic orientations concept has been defined and conceptualized in different ways in the extant literature, the common reference in these explications has been specified to the managerial perceptions, predispositions, or tendencies that guide the formulation of a firm’s strategy, and, ultimately, the performance of the organization (Chan, 2010; Johnson & Sohi, 2001).

We suggest that the decision to conceptualize SO at an individual level or an organizational level depends on the research context and the theoretical framework. For instance, we argue that the nature of SO can

be considered at an organizational level (e.g., resource, culture, philosophy) utilizing the institutional and resource-based theories (e.g., RBV, institutional theory). On the other hand, it can be treated as the underlying beliefs and attitudes of the top management, utilizing the top management's attitudes and intention-behavior models (e.g., TPB, upper echelon theory). To this end, this study conceives SO as a firm's strategic orientation and does not discriminate its level of conception.

### 5.7. Theoretical frameworks

Our review findings highlighted the utilization of various theoretical lenses to conceptualize and investigate different driving and consequent factors of SO. The use of several theoretical lenses speaks to the complexity as well as the richness of SO research. Our framework includes four main theoretical backgrounds to explore the associations of various components in this framework. Drawing from the resource-based models (e.g., RBV, NRBV, dynamic capabilities), SO is considered as an organizational resource and a dynamic capability that can yield competitive advantage and superior firm performance (Adomako et al., 2021). The intention-behavior models and upper echelon framework can be applied at the individual level (i.e., values, beliefs, attitudes, intention, and behaviors) of SO investigations. The underpinning of these models (e.g., Ajzen, 1991; Hambrick & Mason, 1984) can be drawn from the entrepreneurial and top management perspectives. The two theories, (i) institutional theory (Scott, 2005), and (ii) stakeholder theory (Freeman, 1999), largely facilitate our understanding to investigate various external environmental, contextual, and institutional factors associated with a firm's SO.

### 5.8. Antecedents and outcomes

Our review of the SO literature suggests two main themes in SO research: i) the antecedents and ii) outcomes. The SO framework organizes the antecedents into three main categories, as follows: (i) individual, (ii) organizational, and (iii) environmental. Individual-level drivers refer to the micro factors (e.g., owner/entrepreneur's personal, psychological, and socio-demographic). Organizational level drivers refer to the firm-level internal factors (e.g., resources, strategic management, philosophy, and culture). Finally, the environmental-level drivers represent the macro-level contextual and institutional factors (e.g., legislation, economic factors, and environmental conditions).

Moreover, we found that previous studies have predominantly focused on investigating various effects of SO. However, the predominant prevalence of scholarly debate on examining the outcomes of SO still requires further studies. To this end, we synthesize SO outcomes into three levels to provide an easier understanding of theory and practice. The outcomes of SO are discussed as follows: i) micro level, (ii) meso level, and (iii) macro level. The micro-level outcomes refer to the individual-level cognitive and behavioral effects of SO for owners/entrepreneurs. The meso-level outcomes are the firm-level desired consequences of deploying SO (e.g., firm performance, NPD success, innovation, competitive advantage). Lastly, the macro-level outcomes refer to the beyond firm-level consequences of SO such as on markets, economies, environments, and societies (e.g., sustainable ecosystem, TBL performance).

### 5.9. Contexts and contingencies

The synthesized framework of this study presents several contextual and contingent factors associated with SO, namely, institutional, cultural, market/industry conditions, and the characteristics of individuals and organizations. To accommodate how individual, organizational, and environmental antecedents strengthen or weaken the SO effects, the proposed framework suggests exploring the moderating effects of contexts, as follows: institutional (e.g., regulatory, normative, imitative), cultural (e.g., Hofstede's cultural dimensions), environment conditions

(e.g., uncertainty, turbulence, dynamism, competition, and munificence), and the characteristics of individuals (e.g., personal, psychological, socio-demographic) and organizational (e.g., resources, capabilities, other orientations). The limitations in this research theme warrant further investigations.

## 6. Discussion and implications

Using insights from the KBV, this study aimed to systematically conduct a qualitative review of the SO literature to clarify existing disagreements and misconceptions of the SO construct. We sought to examine how SO has been studied and elucidated specific foci of previous investigations into the phenomenon. We found notable biases and inconsistencies regarding the conceptualizations and measurements of SO in extant literature. For instance, we observed that business orientation toward sustainable development has been approached with several distinct perspectives, terminologies, and conceptualizations in the literature. Against these backdrops, we analyzed existing definitional and measurement approaches, followed by the development of a comprehensive framework of SO that provides a holistic picture and facilitates the future development of reliable scientific knowledge in this research domain. Based on our analysis, we were able to meet the proposed objectives and the review of the SO literature offered excellent answers to the research questions that guided this study. The following section discusses the implications and usefulness of the study findings for future research, theory, and practice.

### 6.1. Theoretical implications

This study offers several substantial implications for theory. First, our review provides a synthesis of all conceptions/definitions of SO, implicit and explicit, utilized in previous studies. A comprehensive analysis of existing conceptualizations followed by the proposed definition of SO clarifies the existing scholarly confusion and provides a unified way to communicate firms' orientation toward sustainable development. Second, our study offers a solid background of the SO literature and complements previous research that uses the knowledge management perspective in the context of sustainability (Chang et al., 2018; Martins et al., 2019). This particular contribution highlights the importance of firm capabilities such as SO in the knowledge management literature (Martins et al., 2019; Roxas & Chadee, 2016). Specifically, it offers insights on the role of knowledge-based capabilities as advanced in the KBV of the firm (Grant, 1996). Third, this study provides a convergence of conceptualizations that have been used in previous studies. Specifically, it highlights how previous studies have measured and conceptualized the SO construct. This is critical for researchers as previous conceptualization and measurement of the SO construct has been sparse. Fourth, this study develops a conceptual framework (Fig. 7) that illuminates the nature, functions, and dimensionality of SO. Our framework provides evidence of various drivers, consequences, and transmuting factors of SO, thus, may serve as a springboard to extend future advancement of knowledge in this field of study. Fifth, we critically assess the contents and contributions of extant SO literature to identify research gaps and formulate specific research questions to extend the SO debate from what is already known to what is still unknown. Finally, the literature review provides important insights into the SO literature and suggests some of the challenges related to the conceptualization and measurement of the SO construct. Moreover, our review provides opportunities for future research which may be followed by researchers in future studies.

### 6.2. Practical implications

Our study reveals that developing and deploying SO is crucial for various stakeholders. To this end, this study put forward key implications for practice and policy. For practitioners (e.g., business owners/

managers), this study clearly emphasizes the significance of implementing TBL orientation in their strategic decision-making to achieve non-economic gains (i.e., social, environmental) along with their economic goals (i.e., profit). The proposed framework suggests various determining factors and resultant consequences of SO. Managers can make effective use of this framework to create an appropriate alignment of the TBL approach in their strategic orientation to achieve superior sustainable performance outcomes. Moreover, given the crucial role of businesses in sustainable development, the findings of this review may assist governments and policymakers in developing and/or strengthening effective policies (i.e., regulatory, normative, imitative) so the business sector can play its role on the road toward sustainable development.

### 7. Limitations, and future research trajectory

This study provides an inclusive understanding of the conceptions and measures of SO used in prior literature (n = 53), followed by the development of a synthesized SO framework. Additionally, this study can serve as an essential prerequisite for future research investigations on SO. This review paves the way for future researchers by clarifying the scholarly confusion and filling key knowledge gaps (i.e., conceptual/definitional and measurement issues) in existing scholarship. The findings of this review serve as a guide for future researchers to make appropriate selection of the theoretical lens, SO definition(s), and its level of analysis. Our critical analysis of the existing SO research revealed several gaps and limitations. Thus, we suggest avenues for future research along with the proposed research questions in Table 3.

Further, readers should evaluate the theoretical and practical insights obtained from this article considering the following limitations. First, although a standard systematic review methodology has been applied in this paper, we delimited our search process to the selected keywords (sustainab\* orientation) to search in two databases (i.e., WOS and Scopus). Therefore, there is the possibility of missing out on studies published in other databases and/or containing other relevant keywords. Second, we applied certain exclusion/inclusion criteria in the study selection process. In this regard, articles published in languages other than English, and those published after the date of search execution, and those that do not provide a definition or measurement might have been missed from our sample. Thus, future research may include those papers in their search effort to provide a comprehensive view of the SO construct.

### 8. Conclusion

This study aimed to provide some clarity to the SO construct by critically evaluating existing conceptualizations and operationalizations. The findings of this study highlighted the lack of consensual definition/conception and measurement of sustainability orientation, which, in turn, might have produced inconsistent and non-generalizable findings in previous literature. Thus, we utilized SLR methodology to address this underlying issue, hence, providing a critical evaluation of the systematically selected SO publications. In doing so, this study has suggested a refined definition of SO, followed by providing some discussion regarding the appropriate use of its measurements and methods. In addition, we have suggested a comprehensive framework to describe the concept – sustainability orientation – in terms of: (i) what it is, (ii) its characteristics, (iii) dimensions, (iv) antecedents, (v) outcomes, and (vi) contextualizations. This study also uncovers limitations/knowledge gaps in existing SO research and develops a potential research agenda for further investigations.

CRediT authorship contribution statement

**Hafiz Muhammad Usman Khizar:** Conceptualization, Data Curation, Writing - original draft, Methodology. **Muhammad Jawad Iqbal:**

**Table 3**  
Research gaps, limitations, and future agenda.

Existing Literature on SO	Gaps/Limitations in SO Research	Future Research Direction	Potential Research Questions (PRQ)
Several approaches exist in literature to theorize, conceptualize, and operationalize SO.	No clarity in the application of theoretical lens in SO research. Ambiguity of SO conceptions and measurements.	More research in these 'commands' is essential in order to communicate, analyze, and report consistent and comparable research results. Future researchers should analyze the similarities and differences of SO conceptualizations and operationalizations at different levels.	<b>PRQ1a:</b> In what ways can different theoretical lenses (i.e., resource-based models, behavioral models, upper echelon, and institutional frameworks) be applied in SO research?  <b>PRQ1b:</b> How can SO be conceptualized and operationalized at different levels (i.e., individual vs. organizational)?  <b>PRQ1c:</b> Are there any differences (vs. similarities) of the driving and/or consequent factors of SO conceptualizing at the organizational level (vs. individual level)?  <b>PRQ2a:</b> Does knowledge management capability strengthen (or weaken) SO-performance link?  <b>PRQ2b:</b> Does a firm's SO strengthen (or weaken) knowledge management capabilities?  <b>PRQ2c:</b> How does technology interact/complement the link between SO and knowledge management capabilities?
Resource-based models (e.g., RBV, DC) suggest that business capabilities may intervene in the sustainability-performance link (Barney, 1991).	In line with this perspective, previous studies have examined the role of knowledge management capabilities in yielding superior organizational outcomes by effectively responding to sustainability issues (Chaurasia, Kaul, Yadav, & Shukla, 2020). The research on the interplay of SO, knowledge management, and technology is limited.	This could be a potentially interesting area of investigation for future researchers to examine SO in the context of knowledge management for superior organizational benefits (Albort-Morant, Leal-Rodríguez, & De Marchi, 2018; Carayannis, Grigoroudis, Del Giudice, Della Peruta, & Sindakis, 2017; Cegarra-Navarro, Papa, Garcia-Perez, & Fiano, 2019).	<b>PRQ3a:</b> Do sustainability-oriented ventures employ multiple orientations?
1- Our review suggests that previous studies have predominantly examined the SO effects/	Our understanding is limited on how SO interacts with/complements other forms of	Future researchers can base their research frameworks on multiple orientation frameworks and	

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Table 3 (continued)

Existing Literature on SO	Gaps/Limitations in SO Research	Future Research Direction	Potential Research Questions (PRQ)
outcomes in isolation.	strategic orientations.	configuration approaches.	<b>PRQ3b:</b> What other forms of orientations (e. g., technology, entrepreneurial, learning, market) complement SO-performance link?
entrepreneurial, learning, market) complement SO-performance link?			
Previous studies have largely focused on finding the linear and direct SO-performance link.	Our understanding on how SO-performance link can be strengthened or weakened in various contexts and contingencies.	More research is needed to investigate multiple pathways/configurations of strategic orientation(s) and environmental contingencies leading to superior firm performance.	<b>PRQ4a:</b> What configuration(s) of orientations (e.g., SO, MO, LO, TO, EO) are associated with superior performance in different environmental conditions (e.g., intense competition, turbulence, hostility)? <b>PRQ4b:</b> What configuration(s) of SO with internal (e.g., strategy, culture, structure) and external factors (e.g., market, industry, & environmental conditions) are associated with superior sustainable performance (i. e., economic, social, environmental)?
Our synthesized framework categorizes the various antecedents and outcomes of SO at different levels (i.e., micro, meso, and macro).	Our understanding of the firm-level effects of SO is passable; however, the research beyond firm-level outcomes of SO is limited.	Future researchers can take stock of existing knowledge and focus their investigations on examining the unknown factors associated with SO in different kinds, sizes, and levels of organizations.	<b>PRQ5a:</b> How can SO influence the firm performance (e. g., profitability, market share, competitive advantage), particularly, and sustainable development (i. e., economic, social, and environmental) of the country generally? <b>PRQ5b:</b> Are there any differences (vs. similarities) in

Table 3 (continued)

Existing Literature on SO	Gaps/Limitations in SO Research	Future Research Direction	Potential Research Questions (PRQ)
			the antecedents and/or outcomes of SO in large corporations (vs. small businesses)? <b>PRQ5c:</b> Are there any differences (vs. similarities) in the antecedents and/or outcomes of SO in family businesses (vs. non-family businesses)? <b>PRQ5d:</b> Are there any differences (vs. similarities) in the antecedents and/or outcomes of SO in manufacturing firms (vs. services firms)? <b>PRQ6:</b> Does the inclusion of stakeholders – other than top management – enhance our understanding of SO? (e.g., customers, lower-level employees, local community)
Previous SO studies have mainly collected data from top management (i. e., owners/managers).	Limited research available examining SO from other sources (e.g., employees, customers)	Future research should collect multi-source data and multi-methods research in this field of study. Moreover, future research should utilize novel ways for the measurement of SO construct.	<b>PRQ7a:</b> What methods (e.g., qualitative or hybrid) can complement the existing dominance of quantitative/theory testing approaches in SO research?
Our review provides detailed information on the methods and measures used in prior SO research. Notably, the findings of this review highlight the dominance of quantitative methods in existing empirical studies (42, 88%).	The extensive use of quantitative techniques in a nascent research field is not likely to produce compelling field research (Edmondson & McManus, 2007). More exploratory research at the individual as well as at the firm level of analysis would assist in refining and clarifying the existing confusion and misconceptions regarding the nature and conceptualization of SO.	Future researchers are encouraged to take stock of existing methods and measurement approaches to utilize unconventional approaches in their empirical investigations. Future researchers should conduct qualitative investigations to better understand the various driving and disturbing factors of SO at the personal, organizational, and contextual levels.	<b>PRQ8a:</b> In what ways do longitudinal research designs (vs. cross-
Our review highlighted the predominance of a static viewpoint in	There is a lack of longitudinal studies on this topic. We argue that SO may	Future researchers should draw on longitudinal investigations to better understand/	

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Table 3 (continued)

Existing Literature on SO	Gaps/Limitations in SO Research	Future Research Direction	Potential Research Questions (PRQ)
existing SO research.	change over time. For instance, a sustainability-oriented firm may increase or decrease the intensity of deploying SO, or otherwise may shift to a more conservative profit orientation. This could be done for various potential reasons, such as low (or no) stakeholder pressure, change of top management, and environmental changes.	explore any variations in SO over time.	sectional) enhance our understanding of SO?  <b>PRQ8b:</b> What factors drive (vs. impede) SO in the long run (vs. short run)?  <b>PRQ8c:</b> What are the time-lagged effects of SO on the micro (vs. macro) organizational outcomes?
Most of our prior understanding of SO is based on studies conducted in western or developed countries' contexts.	There is a dearth of research in developing/emerging countries. There is a lot of potential and opportunities in framing SO research from cultural and institutional frameworks for further advancements in this field of study.	Future researchers should conduct cross-country comparisons to explore contextual and cultural differences in SO research.	<b>PRQ9a:</b> Are there any cultural/contextual differences (vs. similarities) of the antecedents and/or outcomes of SO in developed vs. developing countries? <b>PRQ9b:</b> How can empirical findings of SO research in one country be generalized to other countries? (i- among developing countries, ii- developing country vs. developed country, iii- among developed countries).

Formal analysis, Methodology, Writing-review & editing. **Junaid Khalid:** Data Curation, Writing-original draft, Methodology. **Samuel Adomako:** Validation, Conceptualization, Writing-reviewing & editing.

**Declaration of Competing Interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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