

# BUSINESS SUSTAINABILITY PRACTICES IN MICRO AND SMALL ENTERPRISES: A SYSTEMATIC REVIEW

Manuel E Becerra-Bizarrón<sup>1¶</sup>, Juan R Gomez-Bernal<sup>2¶\*</sup>

<sup>1</sup>Departamento de Estudios Administrativos-Contables, Centro Universitario de la Costa, Universidad de Guadalajara, Jalisco, México.

<sup>2</sup>Unidad de Posgrado, Universidad Nacional Autónoma de México, Ciudad Universitaria, CDMX, México.

\*Corresponding autor

e-mail: [jrgomez@comunidad.unam.mx](mailto:jrgomez@comunidad.unam.mx)

¶These authors contributed equally to this work.

## Abstract

Micro and small enterprises (MSEs) are essential for economic and social development globally, as they represent a significant proportion of employment and production. Nonetheless, these enterprises confront substantial difficulties in incorporating sustainable practices, largely attributable to their limited financial resources and capacity, difficulties in accessing relevant information, scarcity of operational resources, and the lack of regulatory frameworks to facilitate their operations. The adoption of sustainable practices is presented as a viable strategy to improve both their competitiveness and profitability, while contributing to social and environmental well-being. For this reason, a systematic review was conducted to answer the question: What are the sustainability practices of micro and small enterprises? The objective was to compile the business sustainability practices that have been documented in MSEs. Bibliographic research was

24 carried out in different databases of articles published between 2012 and 2023.  
25 The main results were presented through a qualitative systematic review. The  
26 studies carried out in MSEs from different sectors reported practices related to  
27 technological innovation, product innovation, strategic management, as well as  
28 economic, social and environmental aspects. Longitudinal studies are required to  
29 assess the long-term impact of sustainable practices on MSEs.

30

### 31 **Author Summary**

32 In this work, we conducted a systematic review to understand sustainability  
33 practices in micro and small enterprises (MSEs). MSEs are crucial to economic  
34 and social development, but they face significant barriers to implementing  
35 sustainable practices due to a lack of financial and operational resources, as well  
36 as the absence of adequate regulatory frameworks. Our study highlights that  
37 adopting sustainable practices, such as technological innovation, strategic  
38 management, and corporate social responsibility, can improve the  
39 competitiveness and profitability of these enterprises while contributing to social  
40 and environmental well-being. The results showed a wide range of sustainable  
41 approaches across different sectors and countries, underscoring the importance  
42 of adapting these practices to local contexts. The conclusions of this research are  
43 valuable for both policymakers and entrepreneurs seeking to integrate  
44 sustainability into their business models.

### 45 **Introduction**

46 Corporate sustainability and corporate social responsibility (CSR) have become  
47 crucial issues for micro and small enterprises (MSEs). Business sustainability is

48 based on a company's ability to operate in an economically viable manner, while  
49 minimizing its environmental impact and contributing positively to society.  
50 Resources and capabilities theory suggests that firms that develop unique and  
51 sustainable capabilities can achieve a competitive advantage [1]. In the case of  
52 MSEs, this would imply the adoption of innovative practices that integrate  
53 environmental and social considerations into their business model [2]. CSR, on  
54 the other hand, is based on the principle that companies should operate in a way  
55 that benefits society. This includes practices such as a deeper understanding of  
56 the leadership responsibilities held by top-level management in fostering  
57 environmental initiatives, which can assist both organizations and policymakers  
58 in advancing sustainable development goals [3]. Stakeholders' theory reinforces  
59 this perspective, arguing that companies must consider the interests of all parties  
60 involved in their operation, including employees, customers, suppliers, and the  
61 community in general [4]. In addition, the integration of the sustainability of MSEs  
62 is based on the triple outcome theory, also considering corporate governance  
63 and innovation as key factors [5-7].

64 MSEs represent a crucial part of the global business interwoven, constituting  
65 more than 98% of all companies. Their contribution is essential to boost economic  
66 development, foster job creation and promote innovation in local communities.  
67 However, these companies face multiple obstacles that restrain their operational  
68 capacity, especially in terms of financial, human, and material resources [1,8,  
69 9,10].

70 MSEs often lack the necessary skills to implement effective sustainability and  
71 CSR policies. Among the factors that contribute to this situation, the difficulty of

72 accessing relevant information, the scarcity of operational resources and the  
73 absence of regulatory frameworks that facilitate their work, as well as insufficient  
74 government support [11]. In addition, they must deal with financial problems, lack  
75 of training, market pressure, and fierce competition, which further complicates  
76 their ability to thrive. Without a clear set of guidelines to provide direction in  
77 implementing sustainable strategies, many of these companies are at risk of a  
78 drastic reduction in investment or even closure altogether [12-14]. Therefore, it is  
79 essential to understand that business sustainability is not just a matter of ethics  
80 but has also become a critical component for the survival and success of MSEs  
81 [15,16]. This systematic review aimed to compile the sustainability practices that  
82 have been documented in MSEs.

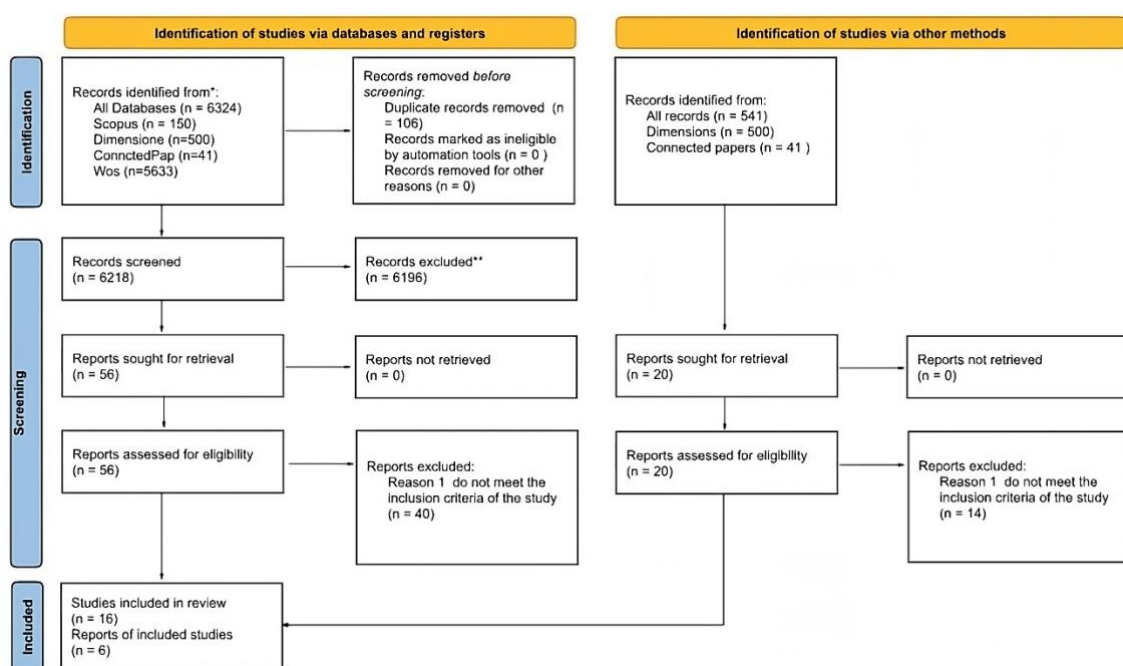
83

## 84 **Results**

85 A total of 6,865 publications were identified, of which 6,717 were removed due to  
86 duplicates or not meeting the established inclusion criteria (Fig 1). 76 publications  
87 were retrieved in full text. Finally, 22 documents were included in the present  
88 systematic review [18-39]. These documents are distributed in 12 sectors: 7  
89 correspond to services [23-25,35-37,39], 5 to trade [22-25, 36], 5 to  
90 manufacturing [24, 28-30, 38], 4 to construction [24-26, 39], 4 to accommodation  
91 [24, 25, 33, 39], 2 to the environmental sector [19, 27], 2 to handicrafts [20, 21],  
92 2 to transport [25, 24], 2 to the food sector [18, 39], 2 to the industrial sector [23,  
93 25], 2 to the technology sector [31, 32] and 1 to the agricultural sector [24]. The  
94 studies come from three continents: America [19-24, 26, 27,34], Europe [18,25,  
95 29, 30, 35, 36, 38], and Asia [28,31-33,38, 39]. Fifteen countries reported

96 sustainability practices, Brazil with 3 studies [21, 23, 27], Mexico with 3 [19, 20,  
 97 26], Colombia with 2 [22, 34], Malaysia with 2 [38, 39], Spain with 2 [25, 37],  
 98 France with 1 [18], Ecuador with 1 [24], Pakistan with 1 [28], Poland with 1 [29],  
 99 Italy with 1 [39], India with 1 [30], China with 1 [32], the Philippines with 1 [33],  
 100 Greece with 1 [35] and the United Kingdom with 1 [36]. The complete process of  
 101 selecting the studies can be found in the PRISMA flowchart (Figure 1).

102



103

104 **Figure 1.** PRISMA 2020 flow diagram which included searches of databases,  
 105 registers and other sources.

106

107 The research reported a variety of sustainable practices implemented in different  
 108 countries and business sectors (see S2 table). The practices most frequently  
 109 reported by the studies were those of social nature, such as community  
 110 engagement and prioritization of the human factor, the promotion of CSR,  
 111 sustainable leadership, and the promotion of diversity and inclusion [18-22, 24-

112 32, 34-38]. In terms of environmental management, the most frequent action is  
113 the appropriate use of natural resources, followed by waste reduction, avoidance  
114 of the use of toxic agents, and community engagement [18-24, 26-28, 30-33, 35-  
115 38].

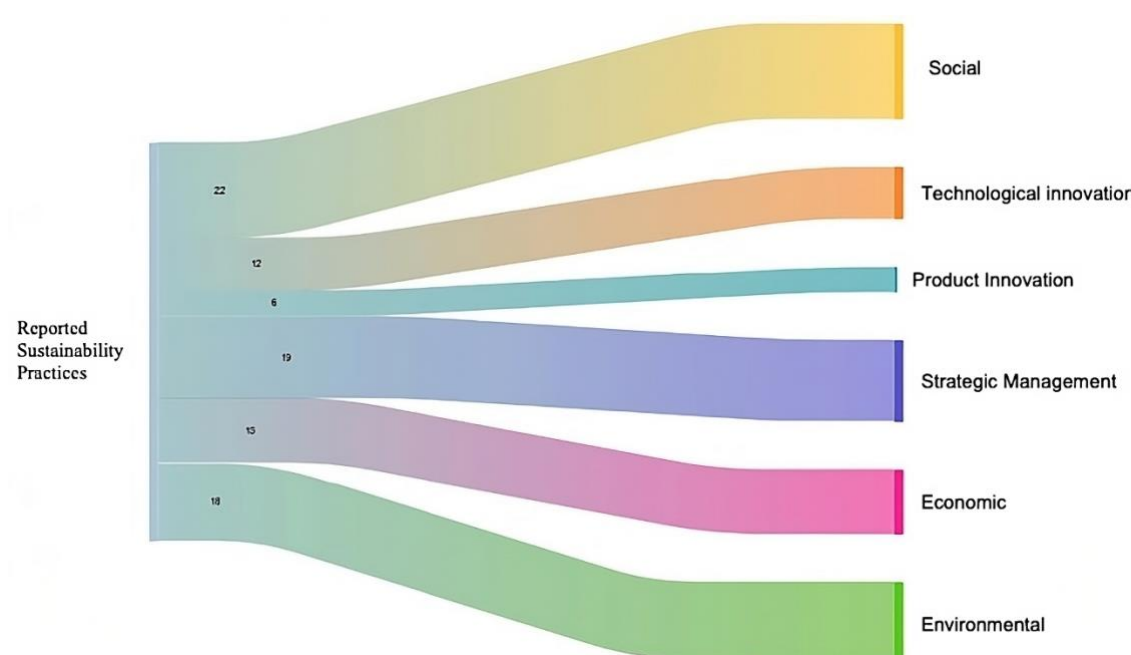
116 In terms of strategic management, the predominant actions included training  
117 programs, the creation of strategic alliances, the relationship with stakeholders,  
118 and linkage with the community [20-37]. From the economic perspective, the key  
119 actions focused on improving competitiveness, reducing costs and increasing  
120 profitability [18, 20, 21, 23-25, 27-30, 32, 33, 35, 36, 38]. In the field of product  
121 innovation, the practice that stood out the most is the development of sustainable  
122 products [20, 21, 23, 25, 30-32, 36], while in technological innovation, the most  
123 common actions are the adoption of new production techniques and the use of  
124 management software [20, 21, 23, 27, 30-32, 34, 36].

125

### 126 **Sustainability practices reported in micro and small enterprises**

127 A total of 6 sustainability-related practices were reported. Social and  
128 environmental practices were the most prevalent among companies that had  
129 among their objectives to strengthen their sustainability, followed by strategic  
130 management and economic practices [18,20,21,23-37]. Technological and  
131 product innovation were only reported in companies in handicrafts,  
132 commerce/trade, services, industry, construction, transportation, manufacturing,  
133 and technologies [20,21,23,25,30-32,36]. The distribution reflects a trend with a  
134 comprehensive approach to sustainability, where companies not only sought to  
135 improve their financial performance, but also to contribute positively to the social

136 and environmental surroundings in which they operate. Figure 2 illustrates the  
137 practices reported for strengthening sustainability.



138 **Figure 2.** Reported Corporate Sustainability Practices

139

#### 140 ***Sustainability practices reported in different countries***

141 15 countries reported the adoption of various sustainability practices (see Figure  
142 3), from social responsibility to product and technology innovation, highlighting  
143 their commitment to business development that balances profitability with social  
144 and environmental aspects.

145 MSEs reported in social practice those that promote the well-being of  
146 communities, equity and social responsibility. Countries such as Mexico, Italy,  
147 Brazil, France, China, Spain, Malaysia, the United Kingdom, Poland, Greece,  
148 Ecuador, Pakistan and Colombia stand out in this area [18-22,24-32,34,39]. In  
149 parallel, the integration of sustainability into strategic management was reported  
150 by Spain, Mexico, Malaysia, China, Brazil, Italy, France, the United Kingdom,

151 Greece, Ecuador, Poland, the Philippines, India, and Pakistan and are aligning  
152 their corporate strategies with sustainable principles [20,21,23-37, 39]. Practices  
153 that are reported to have benefited the environment and society.

154 As for the environmental practice, which focuses on reducing environmental  
155 impact, it was observed that it was adopted in countries such as France, the  
156 Philippines, Brazil, China, Mexico, Spain, the United Kingdom, Italy, Greece,  
157 Malaysia, India, Ecuador, Pakistan and Colombia [18-24,26-28,30-33,35-39].  
158 The implementation of clean technologies and optimization in the use of  
159 resources were reported. Simultaneously, in economic practice, countries such  
160 as Brazil, Italy, China, France, Mexico, Malaysia, Spain, the United Kingdom,  
161 Greece, the Philippines, and India excel in applying practices that seek to  
162 maximize efficiency and profitability, while staying true to sustainability principles  
163 [18,20,21,23-25,27-30,32,33,35,36,38,39].

164 The adoption of advanced technologies reported in India, the United Kingdom,  
165 Italy, Brazil, China, Spain, Mexico, Malaysia and Colombia are using technology  
166 as a tool to boost efficiency and reduce environmental impact  
167 [20,21,23,30,31,32,34,36,39]. Finally, in the product innovation dimension, Italy,  
168 India, Brazil, France and the United Kingdom have committed to developing  
169 sustainable products that not only meet market demands, but also reduce  
170 environmental impact. These countries are at the forefront of creating products  
171 that are both eco-friendly and competitive in a market that increasingly values  
172 sustainability [20,21,23,25,30-32,36]. Some areas such as "Social" and "Strategic  
173 Management" seem to be of particular interest to many countries, as many bands  
174 converge towards them [18-32,34,37,39] and areas such as "Product Innovation"



175 and "Economics" also receive attention, but in a more diversified way  
176 [18,20,21,23-25,27-30,32,33,35,36,38,39].

177

178

179

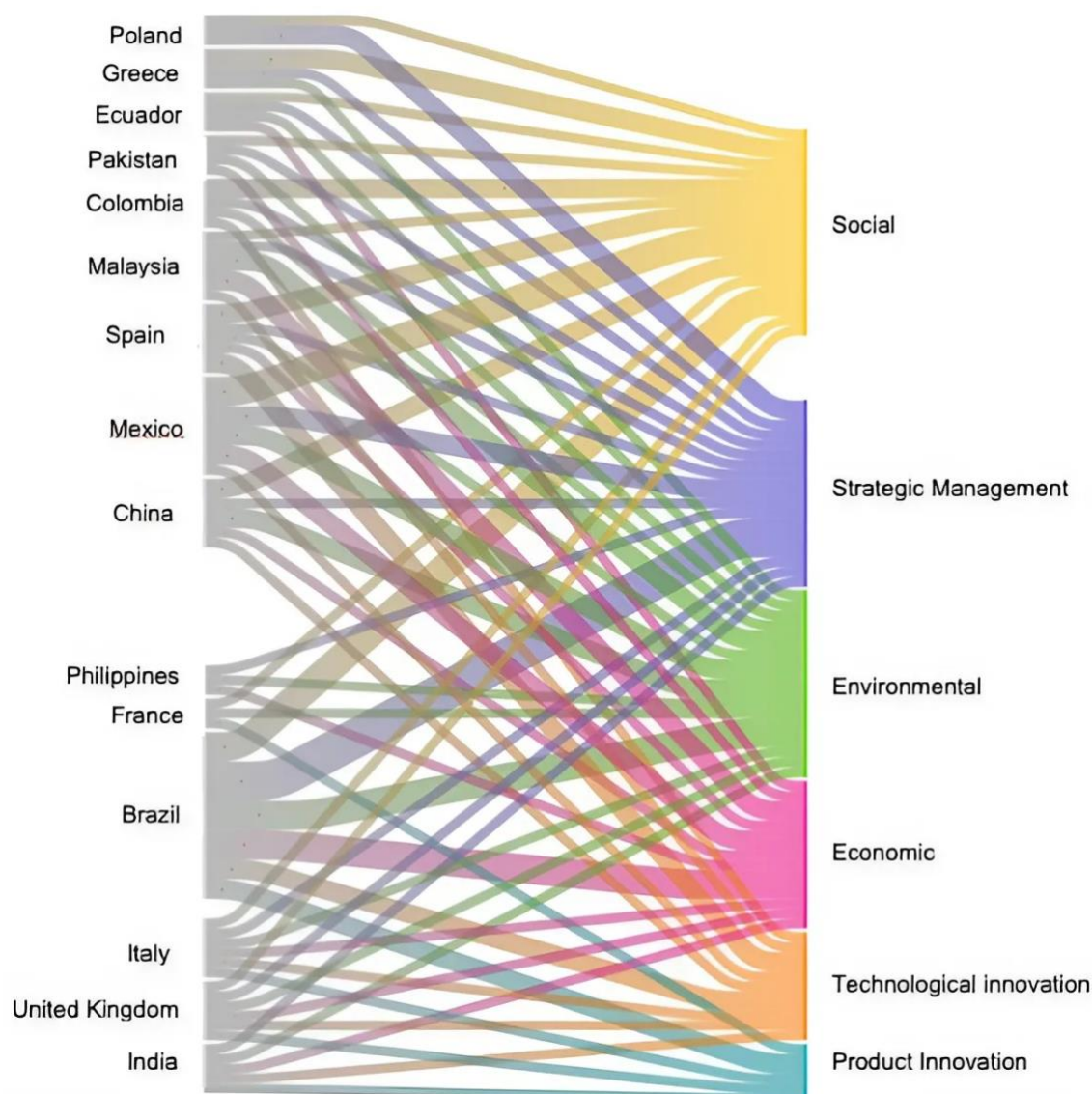
180

181

182

183

184



185 **Figure 3.** Countries and Sustainability Practices Reported

186 ***Strategies adopted by MSEs***

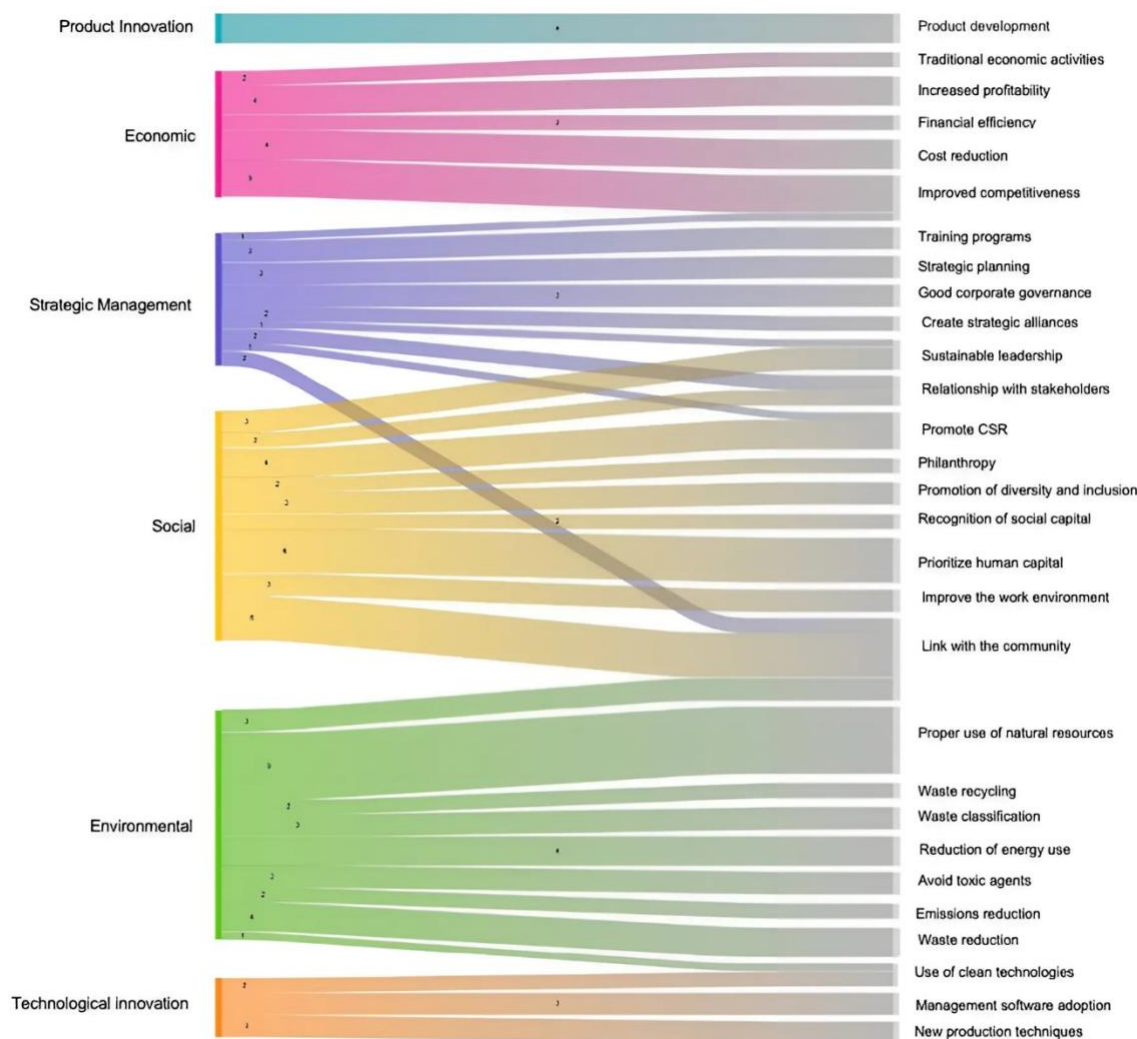
187 The total number of strategies adopted by MSEs is illustrated in Figure 4. Within  
188 the practice of product innovation, the most frequent action is the development of  
189 sustainable products [21,23,36]. As far as economic practice is concerned,  
190 improving competitiveness is the most prominent action. As well as actions  
191 focused on reducing costs and increasing profitability, along with the preservation  
192 of traditional economic activities [21,23,25,29,30,32,36,38,39].

193 Regarding the practice of strategic management, the predominantly reported  
194 actions are training programs and strategic planning. These actions are  
195 complemented by initiatives to create strategic alliances, maintain a solid  
196 relationship with stakeholders, and foster community engagement  
197 [23,26,27,28,34]. Other strategies include sustainable leadership and promoting  
198 CSR [24,25,29].

199 Within social practice, actions such as community engagement and prioritization  
200 of the human factor were the most adopted by MSEs [19,20,22,24,26,34,35].  
201 Other actions presented included the promotion of CSR, sustainable leadership,  
202 the promotion of diversity and inclusion, and the improvement of the work  
203 environment [25,27,29,30,31,32,36,37,39].

204 Regarding environmental management, the most frequent action was the  
205 appropriate use of natural resources [19,20,32,36,39]. Other reported actions  
206 include waste reduction, avoiding the use of toxic agents, and community  
207 outreach, all aimed at minimizing environmental impact [18,21,22,23,33]. Waste  
208 recycling was the least reported strategy within sustainable environmental  
209 management. Finally, in the practice of technological innovation, the most  
210 recurrent actions are the adoption of new production techniques and the use of  
211 management software [20,21,23,30,32,34,36,39].

212 Various actions are interconnected to strengthen sustainability practices in micro  
213 and small enterprises. Actions such as community engagement, stakeholder  
214 engagement, sustainable leadership, and CSR promotion not only reinforce  
215 specific practices such as environmental management or product innovation, but  
216 also link to create a comprehensive approach to sustainability.



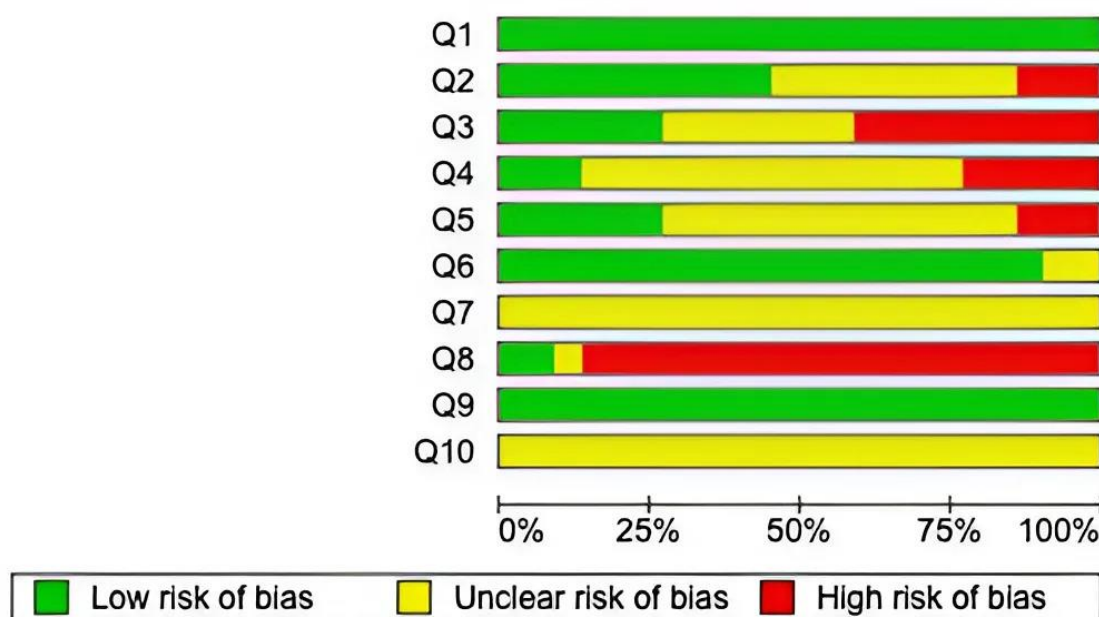
217 **Figure 4.** Practices and actions reported for the strengthening of sustainability

218

### 219 **Risk Bias Assessment**

220 The present systematic review shows a combination of low, high and unclear risk  
221 of bias in different aspects of the research. Some methodological elements are  
222 robust, other, especially the congruence with the qualitative methodology and the  
223 clarity of result presentation, require review or improvements to ensure the  
224 validity and applicability of the study findings, at least 50% of the studies has a  
225 unclear and high risk of bias (see figure 5). In all papers the objectives are clearly  
226 defined. The method used may not be the most appropriate for achieving the

227 proposed objectives, suggesting a potential limitation in the effectiveness of the  
228 research. The selection strategy is not consistent with the research question and  
229 method. It is unclear whether the relationship between the research and the  
230 subject has been sufficiently considered, which could influence the interpretation  
231 of the data. Ethical aspects are not clearly considered, which is fundamental for  
232 any research. Finally, it's unclear whether the results are generalizable or  
233 applicable beyond the context of the study (see figure 6).



234 **Figure 5.** Risk of bias graph

235

	O1	O2	O3	O4	O5	O6	O7	O8	O9	O10
Al Mamun 2018	+	+	-	+	?	+	?	-	+	?
Benito 2012	+	+	+	?	+	+	?	-	+	?
Cañizares 2020	+	-	-	-	?	+	?	-	+	?
Cifuentes 2021	+	?	?	?	+	+	?	-	+	?
Dalla 2024	+	-	-	-	?	+	?	+	+	?
Dorantes 2023	+	?	?	?	?	+	?	+	+	?
Dos Santos 2014	+	-	?	?	?	+	?	-	+	?
Fazal 2022	+	+	+	+	+	+	?	-	+	?
Fazal R 2022	+	?	?	?	+	+	?	-	+	?
Feil 2017	+	+	-	?	?	+	?	-	+	?
Gallardo 2013	+	+	+	+	?	+	?	-	+	?
Gillaume 2022	+	+	-	-	?	?	?	-	+	?
Holguín 2022	+	+	+	?	?	+	?	-	+	?
Huang 2022	+	+	+	?	+	+	?	-	+	?
Khurana 2023	+	?	-	?	?	+	?	-	+	?
Lewandos 2023	+	?	?	?	-	+	?	-	+	?
Macatumba 2021	+	+	+	?	?	+	?	?	+	?
Melrelles 2014	+	?	?	?	?	+	?	-	+	?
Petros 2022	+	?	?	?	?	+	?	-	+	?
S Khruana 2018	+	+	-	-	+	+	?	-	+	?
Vargas 2012a	+	?	-	-	-	+	?	-	+	?
Vargas 2012b	+	?	-	?	-	?	?	-	+	?

236 **Figure 6.** Risk of bias summary

237 **Discussion**

238 In this systematic review, sustainability practices adopted by various sectors of  
 239 micro and small enterprises were identified. The food sector stands out for its  
 240 environmental, social practices and product innovation, while the handicrafts  
 241 sector integrates a broader approach including technological innovation and  
 242 strategic management. Trade and services not only implement environmental  
 243 and social practices, but also economic and innovation practices. Sectors such  
 244 as construction and environmental consulting encompass multidimensional  
 245 practices, reflecting a comprehensive commitment to sustainability. In  
 246 manufacturing and technology, there is a strong adoption of innovative and  
 247 strategic practices. Finally, diverse sectors such as commerce, agriculture, and  
 248 education adopt a variety of sustainable practices, highlighting the importance of

249 a comprehensive strategy to achieve a positive impact on global business  
250 sustainability.

251 The diversity of strategies reported by the studies may be due to the various  
252 theoretical models of sustainability that are applied in the different business  
253 sectors. For example, in the food sector in France, the Transition Model towards  
254 sustainability at the micro level focuses on waste reduction, the use of organic  
255 food, and the elimination of toxic cleaning agents [18]. In Mexico, the "Social  
256 Capital Theory" has been implemented in microenterprises, promoting the proper  
257 use of natural resources and recycling, in addition to the recognition of social  
258 capital [19], waste management and its contribution to sustainable development  
259 by generating more employment opportunities and thus strengthening local  
260 communities [40]. Unlike France, which adopted these strategies to strengthen a  
261 more sustainable and healthy food system [41]. In Brazil, the Corporate  
262 Sustainability Model encompasses waste recycling, emission reduction, and the  
263 implementation of clean technologies in the handicrafts sector, while in Mexico,  
264 the Organizational Social Capital Theory focuses on local employment  
265 generation and the sustainability of traditional economic activities [20, 21]. In  
266 Colombia, microenterprises adopt the Colombian Technical Guide GTC 180 and  
267 ISO 26000 to classify waste and reduce the ecological footprint [22], thus  
268 contributing to environmental sustainability, resulting in economic benefits, such  
269 as reduced operating costs and access to new markets that value sustainability.  
270 In addition, a safer and healthier work environment for employees is fostered by  
271 eliminating toxic cleaning agents, which contributes to the overall well-being of  
272 the community [42].

273

274 The Triple Bottom Line [TBL] Model, applied in Brazil, it is applied within small,  
275 medium, and micro-enterprises across the sectors of commerce, services, and  
276 industry, because they promote the reduction of the use of non-renewable  
277 resources and the implementation of clean technologies [23]. In Ecuador, SMEs  
278 have implemented Corporate Social Responsibility [CSR] practices to improve  
279 the relationship with the community and the work environment [24]. In Mexico,  
280 companies in the construction sector have adopted a Social Innovation Model  
281 that contributes to environmental improvements and community integration [26].  
282 On the other hand, in Brazil, environmental consulting micro-enterprises, under  
283 the Social Responsibility of the Ethos Institute, promote education for  
284 sustainability and transparency [27] to improve the relationship with stakeholders  
285 and foster a healthier business environment [43].

286

287 In Pakistan and the Philippines, there is a remarkable trend towards reducing  
288 energy and material consumption, reflecting a global effort to adopt more  
289 sustainable practices that minimize environmental impact in various industries  
290 [28, 33]. In both India and China, technology companies and manufacturers in  
291 Pakistan share a common focus on improving energy efficiency, although they  
292 adopt different strategies. While companies in India and China lean towards  
293 Sustainability-Oriented Innovation and Disruptive Innovation Theory, Pakistani  
294 companies prefer to implement the Entrepreneurial Competency Model [28,31,  
295 32].

296



297 In this sense, Pakistan prioritizes an "Entrepreneurial Skills Model" within the  
298 manufacturing sector, while India and China choose to apply innovative theories  
299 in the technological field [28, 31, 32]. This creates a certain contradiction  
300 regarding the application of sustainability models in different sectors, where  
301 manufacturing and technology take different approaches to achieve similar goals.

302

303 On the other hand, in Pakistan and the Philippines, the emphasis is placed on  
304 the direct reduction of the use of resources such as energy and materials [28,  
305 33], in contrast to Poland and Italy, where the reduction of the carbon footprint is  
306 approached from a more theoretical management of knowledge and resources  
307 [28,29]. This difference highlights a practical approach in some cases versus a  
308 more theoretical one in others to address sustainability.

309 Pakistan's focus on networking and strengthening [28] differs considerably from  
310 the emphasis on Disruptive Innovation in India and China [31, 32]. While Pakistan  
311 seeks to advance sustainability through collaboration, India and China focus their  
312 efforts on transforming existing processes to achieve sustainable improvements.

313

314 Finally, the sustainable practices adopted by the tourism sector in the Philippines  
315 [33] contrast with the strategies applied in the technological and manufacturing  
316 sectors of countries such as India, China, and Pakistan [28,31, 44]. While tourism  
317 companies focus on efficient resource management, the technology and  
318 manufacturing industries tend to follow more innovative and business theory-  
319 based approaches to achieve their sustainability goals.

320 Sectors such as food and beverage, accommodation, street vending in night  
321 markets and construction in countries such as Colombia and Malaysia have  
322 adopted comprehensive models based on Resource-Based Vision, which  
323 integrate sustainable practices throughout the supply chain. These models not  
324 only promote the active participation of stakeholders, but also manage resources  
325 more sustainably [34, 39]. In the Russian Federation, on the other hand, the  
326 theory of the "sharing economy" has been implemented in the digital economy of  
327 micro and small enterprises, highlighting innovation in production processes,  
328 environmental management, and the adoption of digital technologies as key  
329 components to improve business sustainability [45]. Another study in Russia  
330 focused on a model of stability analysis in small business development, stressing  
331 the importance of flexibility, adaptability, and strategic planning. In this context,  
332 the ability to respond quickly and the express analysis of financial indicators are  
333 considered crucial for sustainability [46].

334

335 However, differences are observed in the management models adopted. While  
336 Colombia and Malaysia rely on Resource-Based Vision models to manage  
337 resources sustainably in traditional sectors, Russia adopts a more "sharing  
338 economy" and digital economy approach, which emphasizes innovation and the  
339 adoption of technologies as the main drivers of sustainability [34, 39, 45, 46]. In  
340 Russia, flexibility and adaptability in small businesses, along with strategic  
341 planning, are seen as fundamental to sustainability, in contrast to resource  
342 management and stakeholder participation in Colombia and Malaysia. This  
343 difference highlights an opposition in terms of priorities and approaches to  
344 achieving business sustainability.

345 In addition, in Greece, the Theory of Motivation and Attitude has been explored  
346 together with the Corporate Social Responsibility Model in small hotels, with the  
347 aim of reducing environmental impact through improvements in energy efficiency  
348 and the adoption of sustainable practices [47]. This focus on small hotels in  
349 Greece contrasts with the approaches taken in industrial [Colombia and  
350 Malaysia] and digital [Russia] sectors, highlighting how different sectors adopt  
351 diverse strategies to address sustainability challenges, depending on their  
352 specific characteristics and needs [34, 39, 45].

353 In Spain, a structural equation modeling approach was utilized to assess the  
354 connection between eco-innovation and financial performance within the wine  
355 industry, highlighting the pivotal role of senior management's commitment to  
356 environmental sustainability and the pressures exerted by stakeholder  
357 expectations [48]. In Italy, MSEs adopted Circular Economy principles,  
358 integrating organizational learning processes and contextual factors to introduce  
359 more sustainable business models [49]. Similarly, in Mexico, the same theoretical  
360 framework was employed to foster innovation with a focus on sustainability,  
361 aiming to produce beneficial outcomes in the social, economic, and  
362 environmental spheres [50].

363 In India, the Interpretive Model of Structure was key to manage social  
364 sustainability in the manufacturing supply chain, highlighting internal pressure  
365 from employees and senior management leadership [51]. In Brazil, industrial  
366 networks implemented Circular Economy practices to optimize efficiency and  
367 reduce waste [52]. A study in Bangladesh used a multi-case study approach to  
368 examine buyer pressure and unwillingness to share sustainability costs in tier-  
369 one suppliers [53].

370 In the United Kingdom, institutional theory was applied in the textile sector to  
371 integrate multiple actors and reduce social and environmental risks, highlighting  
372 the importance of supply chain collaboration to achieve sustainable practices  
373 [50]. In Mexico, SMEs also used Circular Economy principles to drive innovation  
374 and improve their social, economic and environmental performance,  
375 demonstrating the viability of these principles in a business context [50].

376

377 The theories and models applied to address sustainability vary significantly  
378 between India and Spain [50, 54]. For example, while in India the Interpretive  
379 Model of Structure is used to manage social sustainability, in Spain it focuses on  
380 evaluating leadership in ecological innovation. These differences reflect the  
381 diversity of theoretical approaches employed to address sustainability challenges  
382 in different industries and cultural contexts. Likewise, in Brazil and Mexico,  
383 Circular Economy practices are promoted to improve efficiency and sustainability,  
384 while in Spain, the wine sector embraces eco-innovation to optimize performance  
385 [55].

386 Although this review offers a broad view of sustainable practices in MSEs, it is  
387 important to consider some limitations. Diversity in the cultural and economic  
388 contexts of the countries studied may influence to generalize results. In addition,  
389 variability in sample sizes and data collection methods between different studies  
390 could affect the comparability of the results obtained. This variety of  
391 methodologies reflects both the richness and complexity of analysis in current  
392 research, encompassing qualitative and quantitative approaches to address  
393 various issues applied to business sectors.

394 Future studies should focus on investigating specific sustainability practices in  
395 underrepresented sectors, such as technology and services. It would also be  
396 beneficial to carry out longitudinal studies to assess the long-term impact of  
397 sustainable practices on the financial performance and competitiveness of MSEs,  
398 given that this type of study has not been addressed in most of the reviewed  
399 papers. It is also essential to explore open questions, such as the strategies that  
400 MSEs could adopt to overcome financial and knowledge barriers in the effective  
401 implementation of sustainable practices, to identify areas of opportunity.

402 The importance of business sustainability as a viable and beneficial strategy for  
403 MSEs is also highlighted. The adoption of sustainable practices could not only  
404 improve the competitiveness and profitability of these companies, but also  
405 contribute to sustainable economic and social development. These findings  
406 underscore the need for MSEs to integrate sustainable practices into their  
407 operations, which could improve their long-term permanence and contribute  
408 positively to the environment in which they operate.

409

## 410 **Conclusion**

411 This review covers the reported practices that were social, strategic  
412 management, environmental, economic, technological innovation and products,  
413 all aimed at strengthening sustainability in MSEs. These companies could adopt  
414 such practices as part of their competitive strategy, considering sustainability as  
415 a key element to improve their long-term permanence.

416

## 417 **Materials and Methods**

418 The following systematic review was conducted taking into consideration the  
419 PRISMA [Preferred Reporting Items for Systematic reviews and Meta-Analysis]  
420 standards statement [17] (see S1 Checklist).

421

## 422 **Eligibility Criteria**

423 Bibliographic research was carried out of observational and/or descriptive studies  
424 in which part of their results will report at least one practice or strategy of business  
425 sustainability related to administrative, economic, social, environmental or  
426 innovation in micro and small enterprises regardless of the sector to which it  
427 belongs.

428

## 429 **Sources of information and search strategy**

430 The sources of information used for the identification of studies were carried out  
431 performing the search within the SCOPUS and Web of Science databases.  
432 Additional resources such as Dimensions and a search with snowball sampling  
433 methodology were conducted in Connected Papers. Full search strategies for all  
434 databases, registries and websites are available at [Supplementary 1]. An  
435 example of a search strategy can be seen in **Table 2**, which includes terms such  
436 as microenterprise, trade sector, business sustainability, etc. The selected  
437 articles were limited to those published in English and Spanish.

438

439 **Table 2.** Search strategy

<b>Small enterprises related terms</b>
“micro business” OR “microenterprise” OR “small business” OR “Small and Medium-sized Enterprise” OR “SMEs” OR “microenterprise” OR “entreneurship” OR “startups” OR “small firm growth” OR “small enterprise development” OR “local business” OR “self-employment” OR “home-based business”
<b>Sustainability related terms</b>
Green enterprise OR sustainability NEAR6 enterprise OR Environmental entrepreneurship OR Sustainable entrepreneurship OR Conservation business OR Responsible enterprise OR Ethical business OR Regenerative business OR Climate-conscious business OR Circular economy business OR “Sustainable Development” OR “Environmental Impact” OR “Climate Change” OR “Renewable Energy” OR “Circular Economy” OR “Net Zero” OR “Carbon Footprint” OR “Biodiversity” OR “Green Technology”

440

#### 441 **Studies selection**

442 Two researchers [MEBB and JRGB] independently reviewed the available  
443 information sources, selecting studies based on the previously defined inclusion  
444 criteria. The elimination of duplicates and the identification of studies was  
445 executed in a semi-automated way with the use of the Rayyan tool in its 2024  
446 WEB version. Potential studies were identified by title and abstract.  
447 Subsequently, a second identification of the studies to be included was carried  
448 out with the reading of complete texts. For each of the processes, the  
449 discrepancies presented were solved by both researchers, who decided by  
450 consensus the inclusion or exclusion of the discrepant studies.

451

## 452 **Risk of bias assessment and analysis plan**

453 The Joanna Briggs Institute's critical appraisal instrument for qualitative studies  
454 was used to assess risk of bias. A total of 10 items were assessed for all studies.  
455 Charts regarding summary risk of bias were used to present the analysis. For the  
456 qualitative analysis of the information, Sankie diagrams were elaborated and  
457 analyzed using Atlas.ti v9.0 Software, grouping the information into meaningful  
458 categories and creating connections.

459

## 460 **References**

Le TT, Le HC, Enrico B, Janovská K. The roles of corporate social responsibility, international  
entrepreneurial orientation, dynamic and technological capabilities in the performance of  
1 international new ventures. *Int Entrep Manag J.* 2024;20[2]:1-36. DOI:10.1007/s11365-024-01006-  
z.

Weerasinghe N, Weerasinghe A, Perera Y, Tennakoon S, Rathnayake N, Jayasinghe P.  
2 Sustainability practices and organizational performance during the COVID-19 pandemic and  
economic crisis: A case of apparel and textile industry in Sri Lanka. *PLOS ONE.* 2023;18[7]:1-31.  
DOI:10.1371/journal.pone.0288179.

Carchano M, Cardebat JM, Gonzalez A, Carrasco I. Moving toward environmental sustainability  
3 through green entrepreneurship: assessing the moderating role of managerial environmental  
commitment. *Int Entrep Manag J.* 2024;18[7]:1-32. DOI:10.1007/s11365-024-00995-1.

Leonidou LC, Marinova ST, Marinov MA, Eduardsen JS, Eteokleous PP. AN ENQUIRY INTO  
4 MNEs' CSR PRACTICES. *Management International Review.* 2023;64[4]:1-51.  
DOI:10.1007/s11575-024-00551-7.



- 5 Cai YP, Huang GH, Yang ZF, Lin QG, Bass B, Tan Q. Development of an optimization model for energy systems planning in the region of Waterloo. PLoS One. 2020 Sep 25;15[9]. DOI: 10.1002/er.1407
- 6 Bonney M, Jaber MY. Environmentally responsible inventory models: Non-classical models for a non-classical era. Int J Prod Econ [Internet]. 2011;133(1):43–53. Disponible en: <http://dx.doi.org/10.1016/j.ijpe.2009.10.033>
- 7 Koplín J, Seuring S, Mesterharm M. Incorporating sustainability into supply management in the automotive industry – the case of the Volkswagen AG. J Clean Prod [Internet]. 2007;15(11–12):1053–62. Disponible en: <http://dx.doi.org/10.1016/j.jclepro.2006.05.024>
- 8 Bostan Ali W, Olayinka JA, Alam MM, Immelman A. Evaluación de las implicaciones económicas para las micro, pequeñas y medianas empresas en Tailandia después del confinamiento por la COVID-19. PLoS One [Internet]. 2024;19(2):e0294890. Disponible en: <http://dx.doi.org/10.1371/journal.pone.0294890>
- 9 Türkay M, Saraçoğlu Ö, Arslan MC. Sustainability in supply chain management: Aggregate planning from sustainability perspective. PLoS One [Internet]. 2016;11(1):e0147502. Disponible en: <http://dx.doi.org/10.1371/journal.pone.0147502>
- 10 KPMG. Canadian Corporate Responsibility Report. PLoS One. 2021 Mar 18;12[3].
- 11 Durrani N, Raziq A, Mahmood T, Khan MR. Barriers to adaptation of environmental sustainability in SMEs: A qualitative study. PLOS ONE. 2024;19[5]:1-22. <https://DOI.org/10.1371/journal.pone.0298580>.
- 12 Al-Hanakta R, Hossain MB, Pataki L, Dunay A. Eco-innovation influence on business performance in Jordanian micro, small and medium enterprises operating in the food processing sector. PLOS ONE. 2023;18[2]:1-23. DOI:10.1371/journal.pone.0294086
- 13 Ali WB, Olayinka JA, Alam MM, Immelman A. Assessing economic implications for micro, small and medium enterprises in Thailand post Covid-19 lockdown. PLOS ONE. 2024;19[2]:1-15. DOI:10.1371/journal.pone.0294890.

Wiphatthanan T, Thongthammachart S, Wanchai N. Sustainability practices and organizational  
14 performance during the COVID-19 pandemic and economic crisis: A case of apparel and textile  
industry in Sri Lanka. PLOS ONE. 2022;17[5] DOI:10.1371/journal.pone.0269460.

Handfield R, Sroufe R, Walton S. Integrating environmental management and supply chain  
15 strategies. Bus Strat Environ [Internet]. 2005;14(1):1–19. Disponible en:  
<http://dx.doi.org/10.1002/bse.422>

Toptal A, Özlü H, Konur D. Joint decisions on inventory replenishment and emission reduction  
16 investment under different emission regulations. Int J Prod Res [Internet]. 2014;52(1):243–69.  
Available from: <http://dx.doi.org/10.1080/00207543.2013.836615>

Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA  
17 2020 statement: An updated guideline for reporting systematic reviews. International Journal of  
Surgery. 2021 Apr 1;88[1].

Guillaume M, Lise P, Magrini MB. Vías de transición hacia la sostenibilidad a nivel micro de los  
18 servicios alimentarios institucionales en Francia. Front Sustain Food Syst. 2022 Jul 25;6:1–15.

Vargas-Hernández JG. Sustainable micro-business in environmental unsustainability and  
19 economic inefficiency. In: Computational Science and Its Applications – ICCSA 2012. Berlin,  
Heidelberg: Springer Berlin Heidelberg; 2012. p. 518–28.

Vargas-Hernández JG. Microempresas Sostenibles en Medio Ambiente Insostenibilidad e  
ineficiencia económica. Murgante B, Gervasi O, Misra S, Nedjah N, Rocha AMAC, Taniar D, et  
20 al., editors. Centro Universitario de Ciencias Económicas y Empresariales, Universidad de  
Guadalajara, Departamento de Administración [Internet]. 2012;7333:518–28. Available from:  
<http://link.springer.com/10.1007/978-3-642-31125-3>

Feil AA, de Quevedo DM, Schreiber D. An analysis of the sustainability index of micro- and small-  
21 sized furniture industries. Clean Technol Environ Policy. 2017;19[7]:1883–96.

- Cañizares AJDJ. The role of corporate social responsibility for the micro businesses: Are well  
22 practices being met? Aibi, Revista de Investigacion Administracion e Ingenierias. 2020 Jan  
1;8[1]:107–15.
- Meirelles CL, Sacomano JB, Papalardo F. Sostenibilidad en las MIPYMES brasileñas: Un  
23 enfoque de gestión. IFIP Advances in Information and Communication Technology. 2014;439:90-  
97.
- Holguín Ávila L, Carrasquero Ferrer S, Suárez Rodríguez O. Participación de las PYMES en los  
24 procesos de responsabilidad social empresarial en Guayaquil, Ecuador. Revista Universidad y  
Sociedad. 2023;15[2]:461-466.
- Gallardo-Vázquez D, Sanchez Hernandez MI. Impact analysis of managerial social responsibility  
25 in competitive success of microenterprises and the role of innovation [Internet]. Available from:  
<https://www.researchgate.net/publication/279554401>
- Dorantes J, Salazar C, Cruz M. La gestión sostenible en PYMES de América Latina: Un análisis  
26 desde la perspectiva de los recursos y capacidades. Revista de Estudios Empresariales.  
2023;29:67-85.
- Dos Santos A, De Barros PC. Lourdes Brasil dos Santos Argueta \* Cristian deBarrosPAGereira\*\*  
27 [Internet]. 2014. Available from: [www.onlinedoctranslator.com](http://www.onlinedoctranslator.com)
- Fazal R. Understanding CSR in small businesses: A study of SMEs in Pakistan. Sustainability.  
28 2022;14[8]:4547.
- Lewandowska A. The role of sustainability in small and medium enterprises [SMEs]. Journal of  
29 Cleaner Production. 2023;317:128419.
- Dalla PL, Diriker D, Landoni P, Moro D, Wijesiri M. Financial and social sustainability in the  
30 European microfinance sector. Small Business Economics. 2024;
- Khurana S, Mannan B, Haleem A. Un estudio comparativo de prácticas para la integración de la  
31 sostenibilidad con innovación para micro, pequeñas y medianas empresas manufactureras  
[Mipymes] en India e Inglaterra. Publicación del PIO. 2018 Oct 5;404[1]:1–18.

- 32 Huang J, Li Y, Wang Y. Corporate social responsibility and sustainable development in SMEs: A  
literature review. *Sustainability*. 2022;14[3]:1523.
- 33 Macatumbas C, Corpuz D. Environmental sustainability practices among SMEs in the Philippines.  
*Environmental Research*. 2021;202:111654.
- 34 Cifuentes-Bedoya D, Lozada-Valencia F, Segovia-Borray CE, Otolora-Murcia E. La  
Responsabilidad Social Empresarial [RSE] y la Creación de Valor Compartido [CVC], ejes  
determinantes para la gestión de las PYMES. *Revista Ibérica de Sistemas e Tecnologías de  
Informação*. 2021;[E43]:549-567.
- 35 Petros SS, Enquist B, Edvardson B. Business Transformation For a Sustainable Future. In:  
LONDON AND NEW YORK. Nueva York; 2022. p. 1–55.
- 36 Marshall S, Williams S. Una investigación sobre las acciones sustentables de las micro y  
pequeñas empresas. 2019 Jan;1–26.
- 37 Benito S, Sánchez PE. The influence of social responsibility policies and belonging to cooperation  
networks in the relational and structural capital of micro-enterprises. *Investigaciones Europeas de  
Dirección y Economía de la Empresa [Internet]*. 2012;18:166–76. Available from:  
[www.elsevier.es/iedee](http://www.elsevier.es/iedee)
- 38 Al Mamun A, Ibrahim MD, Yusoff MNH Bin, Fazal SA. Entrepreneurial leadership, performance,  
and sustainability of micro-enterprises in Malaysia. *Sustainability [Switzerland]*. 2018 May  
16;10[5].
- 39 Fazal, S Entrepreneurial Competencies and Microenterprises Sustainability. SAGE.  
2022;26[1]:39-47.
- 40 Gutiérrez-Galicia F, Coria-Páez AL, Tejeida-Padilla R, Galicia-Haro EF. A System for the Inclusion  
of the Informal Recycling Sector [IRS] in Mexico City's Solid Waste Management. *Sustainability*.  
2021;13[22]:12490. Available from: <https://DOI.org/10.3390/su132212490>.

- Di Fiore G, Carloni E, Siggia D. Editorial: Innovation dynamics for the transition to sustainable  
41 food systems. *Frontiers in Sustainable Food Systems*. 2023;7:1323880. Available from:  
<https://DOI.org/10.3389/fsufs.2023.1323880>.
- Pacheco ÁM, Porras ID, Rodríguez DA. Dispositivo para la clasificación de residuos sólidos y  
42 medición de huella ecológica. *Rev Habitus Semilleros Investig*. 2021;1[2]  
<https://DOI.org/10.19053/22158391.12181>.
- Waddock S. Creating corporate accountability: Foundational principles to make corporate  
43 citizenship real. *J Bus Ethics*. 2004;50[4]:315-28.  
<https://DOI.org/10.1023/B.0000024554.24558.40>
- Li H, Wang W. Circular business model innovation: A manufacturing industry perspective.  
44 *Sustainability*. 2020;12[12]:4813. DOI: 10.3390/su12124813.
- Mukhoryanova O, Kuleshova L, Rusakova N, Mirgorodskaya O. Sustainability of micro-enterprises  
45 in the digital economy. *E3S Web Conf*. 2021;250:06008. DOI: 10.1051/e3sconf/202125006008
- Akhmetshin A, Egorova N. Small enterprises development stability analysis conceptual  
46 framework. *Herald of CEMI*. 2018;1[2]. DOI: 10.33276/S0000048-5-1
- Fotiadis AK, Vassiliadis CA, Piper L. Small and medium enterprises in tourism and hospitality.  
47 *Journal of Cleaner Production*. 2013;53:101-113.
- Nautiyal S, Pathak P. A resilient path to prosperity: understanding the impact of entrepreneurial  
48 resilience on SMEs. *Journal of Global Entrepreneurship Research*. 2024;14:8.
- Santoro G, Messeni Petruzzelli A, De Massis A, Del Giudice M. The microfoundations of  
48 sustainable growth: A study on Italian SMEs in the wine industry. *Journal of Cleaner Production*.  
2021;294:126286
- Gutiérrez-Martínez I, Romo-Serrano H, Sánchez-Hernández MI. Sustainable innovation in  
50 Mexican SMEs: A study based on the circular economy principles. *Journal of Cleaner Production*.  
2022;315:128072.

51 Kaur A, Sharma S. Social sustainability in supply chains: A study of the Indian manufacturing  
sector using interpretive structural modeling [ISM]. *International Journal of Production Research*.  
2016;54[1]:210-29.

52 Silva A, Rossi M, Andrade R. Circular economy practices in industrial networks: A study of  
Brazilian firms. *Journal of Cleaner Production*. 2019;235:1112-22.

53 Rahman M, Ahsan K. Barriers to implementing sustainable supply chain management in  
Bangladesh: An exploratory study using multiple case studies. *Sustainability*. 2014;6[7]:4386-411.

54 Huq F, Stevenson M, Zorzini M. Social sustainability in developing country suppliers: An  
exploratory study in the ready-made garments industry of Bangladesh. *Int J Oper Prod Manag*.  
2014;34[5]:610-38.

55 Cruz-Suárez A, Fernández-Portillo A, Gallardo-Vázquez D. Environmental innovation and firm  
performance: The role of the firm's internal and external capabilities. *J Clean Prod*.  
2024;380:134897.

461

## 462 **Supporting information**

463

### 464 **S1 Checklist. PRISMA 2020 Checklist**

### 465 **S2 Table 1. Characteristics of the included studies**

466

### 467 **Additional Information Requested at Submission**

468

469 Financial Disclosure Statement

470 We declare that we did not receive specific funding for the development of this  
471 work.

472 Competing interests

473 We declare that there are no conflicts of interest related to this manuscript.  
474 Professionally, we are not affiliated with any organization or group that could  
475 benefit, either directly or indirectly, from the outcomes of this study. On a personal  
476 level, we do not have any relationships with the reviewers, editors, or any other  
477 individuals involved in the editorial process.

478

479 Related manuscripts

480 We confirm that this manuscript is entirely original and does not overlap with or  
481 duplicate any other work currently under consideration or accepted for publication  
482 in another journal. We guarantee that the content has not been simultaneously  
483 submitted to any other editorial process and fully complies with the exclusivity  
484 guidelines required by this high-impact journal.