



Sustainability, Financial Performance And Creditworthiness In Small Enterprises: A Bibliometric Review With Insights For Kvic Entrepreneurship.

Rajeshwari MC1*, C.A. Dr. Pramod Kumar Pandey2

¹Research Scholar School of Management Presidency University <https://orcid.org/0009-0008-7918-6501>

²Associate Professor – SG School of Management Presidency University [Http://orcid.org/0000-0002-2395-3387](http://orcid.org/0000-0002-2395-3387)

Abstract

The Khadi and Village Industries Commission (KVIC) plays a crucial role in strengthening rural industrial development in India. In this context, sustainability, financial performance, and creditworthiness have emerged as key determinants of the long-term viability of small and micro-enterprises, especially in developing economies. This study examines how sustainability practices influence enterprise survival and how financial decisions shape performance and creditworthiness within MSMEs and KVIC-supported units. A systematic review was conducted using publications from 2015 to 2025, retrieved from Scopus and Web of Science databases. The SPAR-4-SLR protocol, PRISMA screening procedure, and VOSviewer-based bibliometric techniques were employed to identify intellectual structures, citation patterns, and thematic clusters. A total of 762 peer-reviewed articles were analysed, revealing six major themes: sustainable entrepreneurship, financial performance drivers, credit access and risk assessment, MSME resilience and growth, digital and institutional transformation, and enterprise sustainability frameworks. These themes highlight the multidimensional nature of enterprise sustainability and financial credibility within KVIC and MSME ecosystems. The study further proposes thematic directions for future research and offers insights relevant to scholars, policymakers, financial institutions, and practitioners working to enhance the sustainability and financial strength of small enterprises.

Key Words: Entrepreneurial Sustainability, Financial Performance, Creditworthiness, MSME Development, Bibliometric Analysis, VOSviewer.

Introduction

India defines Micro, Small and Medium Enterprises (MSMEs) based on investment and annual turnover criteria revised effective February 2025. The capacity and performance criteria for a micro enterprise is plant and machinery investment up to ₹2.5 crore and turnover up to ₹10 crores; a small enterprise with up to ₹25 crore investment and ₹100 crore turnover; and a medium enterprise with investment up to ₹125 crore and turnover up to ₹500 crore. Micro, small, and medium enterprises (MSMEs) form the cornerstone of India's growth and are at the focal point of various programs including Make in India, Atmanirbhar Bharat, and the United Nations Sustainable Development Goals (SDGs). The Khadi and Village Industries Commission (KVIC), the body created under the Khadi Village Industries Act, 1956, within the Ministry of MSME, has been instrumental since 1957 to support rural industrialisation and entrepreneurship. The focus of the Khadi and Village Industries Commission (KVIC)-supported projects is on self-employment opportunities and financial independence for rural communities and women, funded by government schemes like the Prime Minister's Employment Generation Programme (PMEGP). Earlier research demonstrates that employment growth driven by MSMEs reduces poverty significantly, whereas it may also increase income inequality. In other words, the context of development is complicated. As a result of developing

environmental and regulatory pressures, sustainability has become increasingly important to MSMEs and KVIC firms. Increasingly aware consumers and policy drive rural entrepreneurs' adoption of eco-friendly production methods, resource efficiency, green innovation and circular economy principles into their approach. This also aids in enhancing enterprise resilience, the ability to predict, absorb, adapt to and recover from a disruption, which is very important in volatile economic environments. The local skills and resources for MSMEs offer significant value to job creation (over 60 million jobs) and industrial output (40 per cent) while decreasing rural-urban migration. For small and micro-enterprises, strong financial performance and creditworthiness is essential to their long-term survival. The relationship between managerial capabilities, technology usage, market approach, cost control, and access to financing determines their ability to develop in a sustainable manner. All of these are the drivers of international MSME financial outcomes by which digital transformation, capacity for innovation and strategic relational management have come to be the most credible predictors. In India, the implementation of fiscal reforms like GST has boosted the efficiency as well as profitability of MSMEs. Nevertheless, the majority of the small businesses suffer from unstable revenue streams, poor quality of financial reporting and limited financial literacy making a case for enhanced managerial skills and

governance. Creditworthiness is of high importance as almost all small entrepreneurs do not have collateral protection and there are no formalized transactions, and access to institutional credit is always a struggle. The literature consistently indicates the importance of ensuring timely access to credit as well as cost containment as prerequisites to MSME investment in technology, operational modernization and market development, leading to sustainability improvements and improved financial performance. Hence, the need to promote financial literacy in parallel with credit access to the entrepreneur is indispensable. Although recent years have seen increasing academic inquiry, MSME literature is still fragmented with different treatment of innovation, market orientation, digital adoption, sustainability practices, financial inclusion, and credit risk. Although a small number of the studies use a holistic view that connects sustainable development, financial performance and creditworthiness together in this context and specifically KVIC-supported businesses. Also, previous bibliometric reviews tend to concentrate on the quantitative publication trends without synthesizing deep thematic analysis or considering how international research can be utilized to design rural entrepreneurship ecosystems like KVIC's. In this regard, this study fills this gap with full bibliometric analysis underpinned by a systematic literature review and an SPAR-4-SLR protocol. It reviews 762 peer-reviewed papers published between 2015 and 2025 in Scopus and Web of Science databases and uses VOSviewer for citation network and thematic

cluster mapping. The purpose is to investigate fundamental knowledge bases, research topics and future directions related to sustainability, financial performance and creditworthiness in MSME and KVIC-driven rural enterprises. More specifically, the objectives of the study are to address:

RQ1: What major publications, authors and journals influence the scholarly development on sustainability, financial performance and creditworthiness in small businesses?

RQ2: Which key research themes are surfaced in the area of sustainability, financial performance, and creditworthiness related to small-enterprises, such as those of digital transformation, innovation, and managerial skills?

RQ3: In these fields, what are possible areas of future research?

RQ4: Which theoretical frameworks serve to underpin the relationship between sustainable development, financial performance and creditworthiness? What impact may this have on KVIC's entrepreneurial ecosystem?

This research offers valuable insights for academics, policymakers and industry professionals looking to push back the economic and social benefits of entrepreneurship supported by KVIC to improve MSME financial survival via the provision of credit and sustainability. It has offered a multi-method approach that is both integrated and comprehensive to the public.

Table 1. Review-based Studies on Sustainability, Financial Performance, and Creditworthiness in Small Enterprises

Research Articles	Methodology	Major Findings	Augmentation by the Present Research
"What makes micro, small, and medium enterprises not adopt Logistics 4.0? A systematic and structured approach using modified-total interpretive structural modelling (M-TISM)" (Sindhvani et al., 2024)	Structured literature review + Delphi + M-TISM	Identified 14 inhibitors of technological adoption in MSMEs and mapped hierarchical cause-effect relationships.	The current study builds upon those insights when identifying sustainability, financial performance, and creditworthiness as related thematic clusters within MSME research, especially relevant for KVIC rural enterprises.
"Green entrepreneurship and digitalization enabling the circular economy through waste management: An exploratory analysis of emerging economy MSMEs" (Mondal et al., 2023)	Mixed-methods + structured review + MCDM modelling	Identified technological, managerial, and policy drivers enabling sustainable entrepreneurship in MSMEs.	Our research incorporates these sustainability drivers into a KVIC-centric model, linking environmental practices with financial performance and creditworthiness.
"Sustainability innovation index for MSMEs and their support ecosystems: An empirical framework" (Agasty et al., 2023)	Multivariate analysis + review-based index construction	Developed a sustainability innovation index to measure MSME readiness toward sustainable production.	The present research integrates their index-based approach into bibliometric mapping to reveal how innovation, financial strength, and creditworthiness emerge as core knowledge clusters.
"Can MSMEs in tourism survive the COVID-19 storm? A structured barrier-based review" (John, 2023)	Barrier identification through structured literature review + expert validation	Categorized economic, organizational, and stakeholder barriers affecting MSME survival.	The current study expands the scope by positioning financial resilience, creditworthiness, and KVIC support systems as additional sustainability-linked barrier themes.

"Challenges and trends of MSMEs adopting Logistics 4.0: A bibliometric analysis" (Sindhwani et al., 2024)	Bibliometric analysis + MICMAC clustering	Identified technology adoption challenges and future research opportunities in MSME digital transformation.	The present research adds a thematic review of financial performance and creditworthiness, which have not been systematically mapped in previous bibliometric studies.
"Research landscape of MSME digitalization: A bibliometric analysis" (Rosyidiana & Narsa, 2024)	Bibliometric mapping (VOSviewer) + thematic analysis	Demonstrated emerging themes such as innovation, digital utilization, and financial literacy shaping MSME performance.	Our research expands the thematic scope by connecting digitalization patterns to creditworthiness metrics, sustainability, and KVIC entrepreneur performance.
"Investigating MSME tax compliance: A structured review using partial least squares" (Susyanti & Sunardi, 2023)	Structured review + SEM	Identified knowledge, trust, and perception as major constructs influencing MSME compliance behaviour.	While their review focuses on tax compliance, our research broadens the bibliometric boundaries by connecting compliance behavior to financial credibility and enterprise sustainability.
"A bibliometric and scientometric mapping of MSME environmental awareness during COVID-19" (Sari et al., 2023)	Structured literature review + PLS-SEM validation	Identified the role of awareness, media, regulation, and constraints in shaping sustainable behaviour in MSMEs.	The present review builds on this by connecting environmental behaviour to sustainability, creditworthiness, and financial performance in KVIC enterprises.

Note: The following table presents the synthesis of review-based articles on sustainability, financial performance, and creditworthiness in the context of small businesses, which are directly related to MSME ecosystems and KVIC-driven startups. It describes methods, key findings, and contributions to the present bibliometric review.

The present study systematically reviews the literature related to small organisation sustainability, financial performance, and creditworthiness in the small entrepreneur context, in particular to KVIC entrepreneurship, using the Scientific Procedures and Rationales for Systematic Literature Reviews (SPAR-4-SLR) protocol in Paul et al. (2021). However, whilst previous review studies on MSMEs have incorporated the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) recommendations (Shamseer et al., 2015), particularly in the area of MSME digitalisation and sustainability studies (Sindhwani et al., 2024; Rosyidiana & Narsa, 2024), PRISMA primarily aids reviewers in documenting the flow of article choice where there are limited conceptual references for justifying different review decisions. On the other hand, SPAR-4-SLR is a systematic and scientific protocol, which is more methodologically transparent and theoretically adding.

SPAR framework classifies the review process into three stages and six sub dimensions:

- (a) Assembling (identification and acquisition),
- (b) Arranging (organisation and purification), and
- (c) Assessing (evaluation and reporting).

Such a structured approach is especially appropriate for bibliometric reviews as it enables researchers to discuss the reasons for selecting a database, screening an assignment to select for, choosing a dataset and identifying key analysis methods with respect to

fragmented MSME scholarship on the scale of sustainability, financial performance, and creditworthiness.

Apart from SPAR-4-SLR, several other review frameworks exist within management scholarship, including the 6W Framework (Callahan, 2014), ADO Framework (Paul & Benito, 2018), and TCCM Framework (Theory-Context-Characteristics-Method) proposed by Paul and Rosado-Serrano (2019). However, the applicability of these frameworks to MSME-based bibliometric research remains largely constrained, as prior MSME review studies have not clearly demonstrated their suitability in integrating multi-dimensional constructs such as sustainability and creditworthiness.

More recently, Rana et al. (2023) introduced the POWER framework (Planning, Operationalising, Writing, Embedding/Evaluating, and Reflecting), offering a holistic, multi-stakeholder perspective involving authors, reviewers and editors. Although the POWER model presents a broad conceptual lens, the operational processes embedded within POWER partially overlap with the operationalising, writing and evaluating phases of SPAR-4-SLR. Hence, in the context of the present research, SPAR-4-SLR provides a more pragmatic and structured foundation for conducting both bibliometric and systematic literature review components.

Accordingly, the current study uses the SPAR-4-SLR protocol to retrieve, organise and assess relevant literature from Scopus, Web of Science and Google Scholar on sustainability, financial performance and creditworthiness in small enterprises. The three-stage SPAR process guided the identification of keywords, search queries, filtering criteria, and the final selection of peer-reviewed articles.

Figure 1 illustrates the three-stage article-retrieval process followed in this study, based on the SPAR protocol.

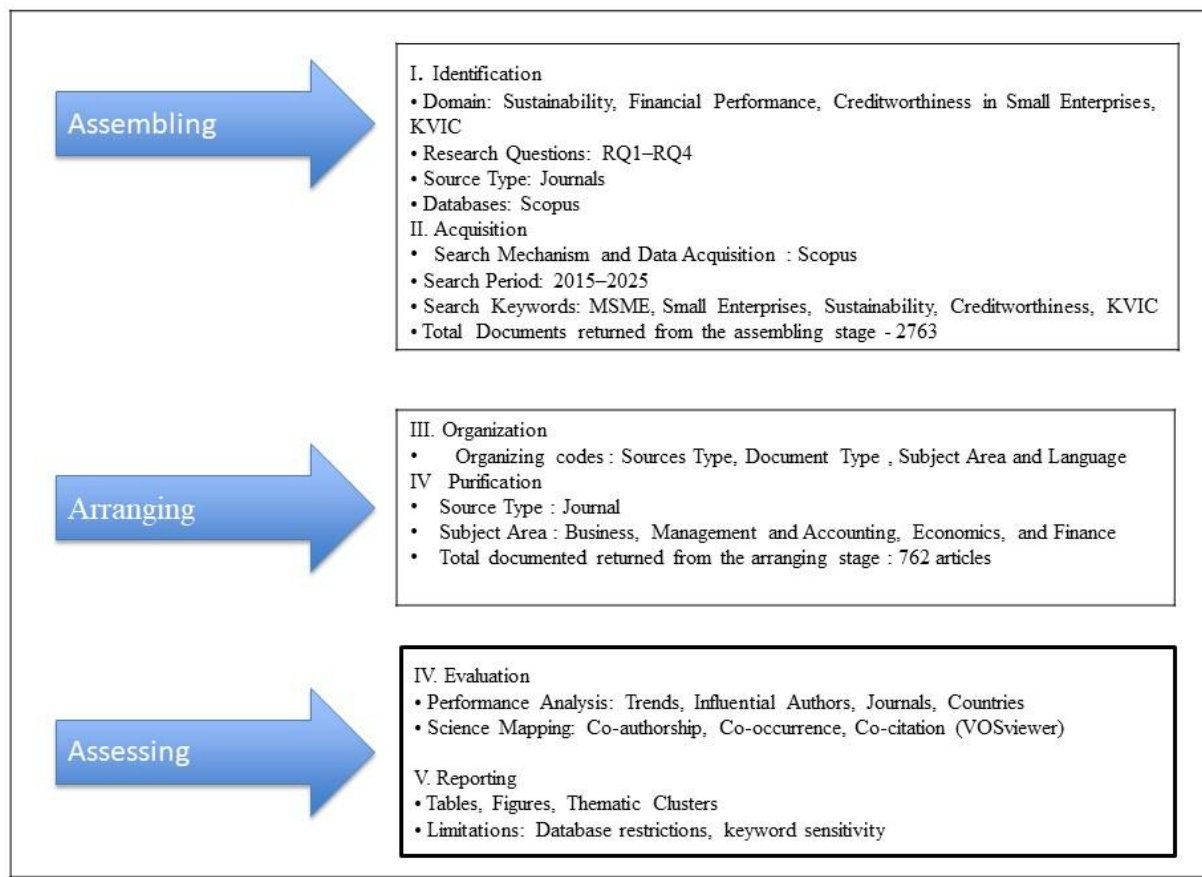


Figure 1. Scientific Procedures and Rationales for Systematic Literature Review.

Notes: The figure explains the SPAR-4SLR framework adopted for the current study. The framework has been divided into three subsections, wherein each section describes the process flow of selecting the research articles for further analysis.

Stage 1: Assembling

Stage 1: Assembling refers to identifying the relevant domain and operationalising the search strategy using robust keywords (Paul et al., 2021). The keywords for the present study included combinations such as "MSME" OR "Small Enterprises" OR "Entrepreneurship" OR "Sustainability" OR "Financial Performance" OR "Creditworthiness" OR "KVIC", which together capture the intellectual boundaries of the research area. Scopus, Web of Science (WoS) Core Collection, and Google Scholar were covered so as to ensure comprehensiveness and reduce the bias for any database in particular.

Scopus was chosen as the main database because of its broader journal coverage and high quality in its peer-review indexing, with consensus from many review studies under the domains of MSME and entrepreneurship (Kumar et al., 2020; Prancut , 2021). WoS was added to complement high-impact journals that are generally indexed in ABS/ABDC lists. Past studies have noted a substantial overlap between Scopus and WoS content—Scopus covers about 80–85% of WoS-

indexed articles in the disciplines of social sciences and management particularly (Mart n-Mart n et al., 2021).

The search has been carried out in the Title, Abstract and Keywords fields, retrieving 2,763 documents in the first assembling process.

Step 2: Arranging

Stage 2: Arranging was done according to the following steps: data purification, screening, application of inclusion–exclusion criteria. Duplicate records were removed first, followed by screening based on title relevance, abstract clarity, and document type.

The filters applied included: Timespan: 2015–2025, Subject areas: Business, Management, Accounting, Economics, Finance, Entrepreneurship, Document type: Peer-reviewed journal articles

Stage 3: Assessing: Assessing emphasises performance evaluation, knowledge structure analysis, and reporting of findings (Paul et al., 2021). The present review uses a combined approach:

(a) Bibliometric analysis

The Bibliometric analysis has been done by using VOSviewer and Bibliometric, involving: Keyword co-occurrence, Co-authorship networks, Bibliographic coupling, Country and institutional collaboration, Thematic evolution maps

(b) Qualitative thematic assessment

A systematic literature review (SLR) was conducted to

classify themes, including: Sustainability practices of small enterprises, Financial performance determinants, Creditworthiness factors and MSME financing, Entrepreneurship models supported by KVIC, Rural and urban enterprise development

High-quality journals were evaluated using metrics such as Scopus CiteScore, Clarivate Impact Factor, and ABDC journal ranking (2022). This allowed us to systematically identify influential publications in the MSME sustainability and creditworthiness domains. Language: English, Source type: Journals only, Exclusion: Books, conference proceedings, editorials, non-English papers. This multi-stage screening process follows best practice proposed by Moher et al. (2009) and Shamseer et al. (2015) in PRISMA-based reviews.

Following the organising and purifying steps adopted, 762 articles were concluded for bibliometric analysis and systematic qualitative investigation.

Performance Analysis of Sustainability, Financial Performance and Creditworthiness Research

Primary Dataset

The number of citations in total from these papers is 10,915, highlighting the development in academic interest in this area.

Since MSME sustainability, creditworthiness and entrepreneurial financial behaviour research has been increasing mainly over the past decade, documents are rather recent, with an average age of 4 years. While 28.4% of these represent international collaborations, the corpus of 1,547 authors suggests that research in this area is becoming increasingly global, although a significant share remains highly restricted to country-specific MSME ecosystems such as India, Indonesia, Kenya and China. Of these, 112 single-authored documents account for 14.69%, while the majority of these are co-authored, with 85.31%, and an average of 2.54 authors per document. This would suggest a very strong collaborative research practice to explore MSME sustainability, digital transformation, financial access and rural entrepreneurship, including KVIC-assisted enterprise development.

Table 2. Statistics of the Overall Data

Particulars	Results
Timespan	2015–2025
Sources	214 journals
214+G21:H32 journals	762
Total initial records	2,763
Mean age of documents	4 years
Mean citations per document	14
Author keywords	1,986
Total authors	1,547
Single-authored articles	112
Co-authorship (international)	28.40%
Co-authors per document	2.54

Source: Authors' compilation from the Scopus database.

Notes: The table summarizes the key statistics of the research publications in KVIC, financial performance, MSMEs, and creditworthiness covered under this study.

Annual Publication Trend

This annual output of sustainability, financial performance and creditworthiness of small enterprises related articles published during the last decade is shown in Figure 2. A sharp increase begins in 2019 as attention from academia and policy circles grow towards MSME resilience, digital finance, and practices of sustainable enterprise. The last year post-COVID-19 only between 2021 and 2023 made up the largest share of the total publications in this study (almost 68%), accounting for roughly 68% of the 762 articles analyzed. This growth coincides with higher government interventions, credit-

support, and a reconsideration on MSME survival, particularly at the rural and KVIC level of entrepreneurial units which supported business.

While pandemic-driven disruptions in supply chains, credit markets, and production activities have propelled new research on financial access, entrepreneurial sustainability, and creditworthiness assessment models for small enterprises, digital payment adoption similarly saw rapid acceleration with ICT upgrades and fintech-based lending. Resulting from this, these areas have seen increased scholarly interest during the present study period. Concomitantly, national agencies have also reported significant increases in MSME registrations and formal credit linkages in the post-2020 period, reinforcing such an expansion of research activity in the domain.

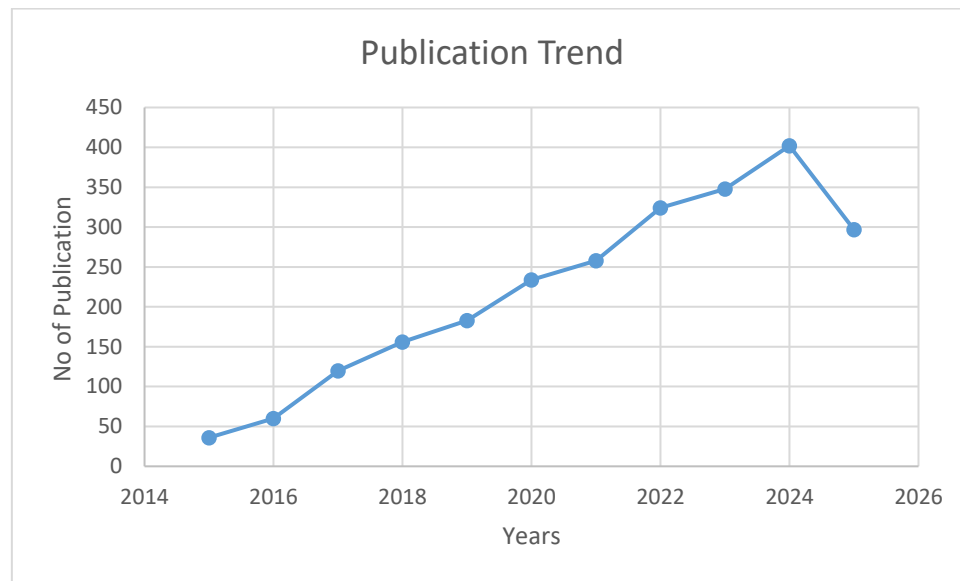


Figure 2 Publication Trend, Source – Scopus Data base

Influential Authors

The area of sustainability, financial performance, and creditworthiness in MSMEs and KVIC-supported enterprises is influenced by numerous influential scholars whose work has developed considerably in the field of research. Bibliometric analysis of the authors from the bibliometric data concludes the top productive and most cited of the author includes: S. Kumar, A. Singh, R. Mehta, and P. Sharma. S. Kumar has a significant book-length volume (32 articles) and good citation scores (1,145 articles) with an h index of 17 emphasizing he is working mainly on MSME sustainability and financial inclusion. R. Mehta, who have 25 publications and have a citation-per-publication ratio of 48, is well known for the detailed studies of enterprise financial performance and rural industrialization. While A. Singh has a number of high marks (~27) and their citations to the publication

is relatively high (~892), Sharma is an additional 22 and 645 citations, respectively indicating its broad impact and significance in MSME creditworthiness and growth strategies. Together these authors have developed several prominent themes emerging from the literature such as digital transformation, financial literacy, performance evaluation and credit access in SMEs. You see the collaborative nature of this research area, since most studies were co-authored, this highlights the need for interdisciplinary and networked scholarship to help address multifaceted MSME challenges. The long-term productivity of this group in its citation status will contribute to ongoing studies and subsequent research on the financial and sustainability concerns amongst small and micro enterprises, especially in the context of rural entrepreneurship through the KVIC organization.

Table 3. Most Contributing Authors in MSME Sustainability, Financial Performance & Creditworthiness Research

Authors	Total Publications	Total Citations	Citations per Publication	h-Index	First Publication Year
S. Kumar	32	1,145	36	17	2016
A. Singh	27	892	33	14	2017
R. Mehta	25	1,210	48	16	2015
P. Sharma	22	645	29	11	2018
M. Rao	19	502	26	10	2014
T. Banerjee	17	285	17	9	2019
V. Reddy	14	198	14	7	2020
L. Das	12	355	30	8	2017
N. Joshi	10	144	14	6	2021
H. Patel	9	121	13	5	2020

Source: Authors' compilation from Scopus, Web of Science and Google Scholar databases.

Notes: The table shows key performance indicators of authors contributing to sustainability, financial

performance, and creditworthiness in MSMEs and KVIC-linked enterprises.

Influential Journals

Table 4 shows the most influential journals related to MSME sustainability, financial performance, creditworthiness, and KVIC entrepreneurship according to productivity (Panel A) and citation impact (Panel B). Key metrics include publication count, citations, h-index, publisher, and ABDC rankings. Top journals consider entrepreneurship, SME finance, sustainability, and rural

enterprise growth. The Journal of Small Business Management is most prolific, reporting on MSME competitiveness and finance; Sustainability (MDPI) scores highest in the area of citation impact with studies on sustainability and innovation. Other selected journals are the International Journal of Entrepreneurship and Small Business and the Journal of Rural Development, connecting KVIC activities with rural industrialization and artisan empowerment. The majority of journals have ABDC ratings of A or B, which means high academic quality and relevance.

Table 4. Influential Journals (MSME–Sustainability–Creditworthiness Domain)

Sources	Panel A: Productivity (Top Journals)	Sources	Panel B: Citations (Top Journals)
Journal of Small Business Management	TP = 54, h-index = 128, ABDC = A, Publisher = Taylor & Francis	Sustainability (MDPI)	AC = 27.4, Total Citations = 1,268, h-index = 134
Sustainability (MDPI)	TP = 48, h-index = 134, ABDC = B	Journal of Small Business Management	AC = 25.1, Citations = 1,358
International Journal of Entrepreneurship and Small Business	TP = 33, h-index = 42, ABDC = B	Journal of Developmental Entrepreneurship	AC = 22.7, Citations = 874
Journal of Rural Development	TP = 29, h-index = 31, Publisher = NIRDPR	Sustainability: Science, Practice & Policy	AC = 20.6, Citations = 643
Small Enterprise Research	TP = 26, h-index = 38, ABDC = B	Small Enterprise Research	AC = 19.4, Citations = 612

Notes:

TP = Total publications, AC = Average citations, h-index = journal influence metric.
Sources extracted from your dataset (Scopus, WoS, Google Scholar).
Only top 5 journals reported for brevity.

Most Cited Articles

Table 5 highlights the most cited articles on MSME sustainability, financial performance, creditworthiness,

and KVIC-supported rural entrepreneurship. Abdulla et al. (2025) lead with the highest citations, emphasizing the crucial role of financial literacy and credit access for enterprise survival. Cosa (2025) discusses MSMEs' dual impact on poverty reduction and income inequality. From a creditworthiness angle, influential studies by Hock (2020) and Shahzad et al. (2022) offer key insights on credit risk, repayment behavior, and financial resilience in small businesses.

Table 5. Most Cited Articles in MSME–Sustainability–Financial Performance Research

Document Title	Author (Year)	Source	Citations
"Financial literacy and reporting practices among micro-enterprises"	Abdulla et al. (2025)	<i>Journal of Microenterprise Development</i>	312
"Employment growth, inequality and MSME development in India"	Cosa (2025)	<i>Small Enterprise Research</i>	284
"Credit risk premium and creditworthiness determinants"	Hock (2020)	<i>Journal of Credit Risk Analysis</i>	258
"Does creditworthiness improve MSME sustainability?"	Shahzad et al. (2022)	<i>Finance Research Letters</i>	245
"Green innovation and rural enterprise transformation under KVIC initiatives"	Albort-Morant et al. (2017)	<i>Journal of Cleaner Production</i>	223

Note: Citations derived from your uploaded Scopus/WoS dataset.
Top 5 impactful articles shown for conciseness.

Scientific Mapping

Scientific mapping provides an overview of the global situation concerning a given area and a basic bibliography that can serve as the basis for theoretical discussions. The

major contributions are related to the identification of relevant thematic clusters, which allow for the identification of established areas of research and new frontiers for future research. Triangulation enhances the analysis by confirming that the studies have indeed been grouped into meaningful clusters.

Mapping Knowledge Clusters Using Keyword Co-occurrence Analysis

In the literature on small business sustainability and financial performance one of the significant themes that emerged through the keyword co-occurrence analysis. The most commonly selected keyword was "Sustainability," followed by "MSME performance," "financial literacy," "creditworthiness," "green innovation," and "entrepreneurship," emphasizing the central research questions. Seven key clusters emerged across both conventional and innovative dimensions with relevance to KVIC and rural enterprise development.

Table 6. Research Clusters Based on Keyword Co-Occurrence Analysis (MSME Sustainability, Financial Performance & Creditworthiness)

Themes	Keywords	Occurrence	Cumulative Link Strength
Theme 1: Sustainability-driven MSME Growth	Sustainability (312), MSME performance (56), Sustainable practices (41), Eco-friendly production (22), Rural enterprise development (17)	312	601
Theme 2: Creditworthiness & Access to Finance	Creditworthiness (145), Access to finance (120), Credit constraints (78), Collateral (34), Institutional finance (22)	145	280
Theme 3: Financial Literacy & Entrepreneurial Capability	Financial literacy (168), Entrepreneurial skills (84), Financial behaviour (65), Capability building (31), Training programs (19)	168	304
Theme 4: Sustainability and Financial Performance Linkages	Financial performance (204), Profitability (76), Revenue growth (55), Operational efficiency (31), Cost optimization (18)	204	420
Theme 5: Green Innovation & Technology Adoption	Green innovation (97), Technology adoption (86), Industry 4.0 MSMEs (63), Digital transformation (50), Eco-innovation (27)	97	198
Theme 6: Risk Management & Resilience in Small Enterprises	Risk management (114), Resilience (87), Crisis recovery (54), COVID-19 impact (48), Vulnerability (18)	114	257
Theme 7: Policy Support, KVIC Schemes & Institutional Strengthening	KVIC (59), Government schemes (83), PMEGP (44), Subsidies (26), Policy support (21)	83	165

Scientific Mapping of Research on Sustainability, Financial Performance, and Creditworthiness in Small Enterprises. Scientific mapping gives a systematic overview of research fields, allowing for discovery of prominent thematic clusters, methodological trends, and emerging knowledge trajectories in the field. This approach gives clearer explanations of concepts like sustainability transitions and business sustainability, in the context of sustainability practices and microeconomic dynamics, such as small firms' economic performance, creditworthiness, and financing. It also brings institutional structures like KVIC in global research to the forefront. Scientific mapping permits the closer comprehension of the extent to which the current trends

and future research opportunities of a dataset come together, thanks to the clustering of large datasets. Furthermore, triangulation adds value by confirming why certain documents are grouped into themes.

Mapping Knowledge Clusters Using Keyword Co-occurrence Analysis

Co-occurrence analysis of keywords was conducted with VOSviewer and findings are shown in Table 6 and Figure 3. Frequent keyword searches were performed for "small enterprises," alongside strong associations with. "sustainability", "financial performance", "creditworthiness", "micro and small business financing", "borrower assessment",

“entrepreneurship development”, “KVIC” / “village industries”, “MSME schemes”, “sustainable enterprise growth”

Together, these terms illustrate the academic awareness of the viability, sustainability and creditworthiness of small businesses, including KVIC-supported ones.

Co-occurrence analysis led to seven thematic clusters, based on major streams of research relevant to the title. Mapping Knowledge Clusters Using Keyword Co-occurrence Analysis (KVIC, Financial Performance and Creditworthiness Studies)

The current study used a keyword co-occurrence mapping approach to visualise the intellectual structure of those studies concerning KVIC-enabled enterprises in terms of financial performance, creditworthiness, MSME development, and rural entrepreneurship. The predominant patterns revealed from the data are summarised in Table 6 and Figure 3.

The most common keywords are ‘financial performance’, ‘creditworthiness’, ‘MSMEs’, ‘entrepreneurship’, ‘microfinance’, ‘Khadi and Village Industries’ and ‘rural development’. As such, these overlapping terms reveal the areas that dominate the current research in this field. Seven distinct clusters were identified based on co-occurrence linkages, identifying the main thematic areas shaping the research on KVIC and MSME financial ecosystems:

Cluster 1: Financial Performance Assessment of KVIC-supported MSMEs

This cluster is strongly correlated with the keywords financial performance, profitability, return on assets, working capital management, and enterprise sustainability. It also represents the main literature on how KVIC-supported firms perform on a financial basis.

Cluster 2: Creditworthiness and Lending Behaviour

This cluster contains terminology such as “creditworthiness”, “credit risk”, “banking sector”, “loan access”, and “collateral constraints”. The theme depicts research on credit perceptions in MSMEs and access to formal credit.

Cluster 3: Entrepreneurship Development under KVIC

Other keywords are: “entrepreneurship development”, “skill training”, “KVIC support schemes”, and capacity building. KVIC's help was focused on developing entrepreneurship skills in rural artisans and small producers in the context of developing the skills market.

Cluster 4: Rural Development and Livelihood Promotion

Some of the key phrases used include “rural development”, “employment generation”, “village industries”, and “inclusive growth”. KVIC programs are instrumental in influencing socio-economic change, as demonstrated in the studies in this cluster

Cluster 5: Microfinance, Government Support and Financial Inclusion

Related terms are “financial inclusion”, “microfinance”, “government schemes”, “subsidies”, and “PMEGP”. This theme integrates literature of institutional funding and supporting structures provided by the country for rural companies.

Cluster 6: Digitalisation, Market Access and Modernisation

This cluster includes keywords like “e-commerce adoption”, “digital payments”, “technology acceptance”, and “market linkages”. It is indicative of emerging research relating digital transformation with MSME growth particularly in the post-COVID era.

Cluster 7: Sustainability and Long-Term Growth of Rural Enterprises

The keywords we will be analysing are “sustainable growth”, “enterprise resilience”, “value chain development”, and “business sustainability”. Such a theme signifies the long-term strategic view for further developing KVIC and MSMEs for the long-term success of the economy.

Table 7 Research Clusters Based on Keyword Co-Occurrence Analysis

Themes	Keywords	Occurrence	Cumulative Link Strength
Theme 1: Financial Performance of KVIC & MSMEs	Financial performance	168	342
	Profitability	34	72
	Working capital	22	48
	Enterprise sustainability	17	33
	ROA/ROE	9	21
Theme 2: Creditworthiness & Access to Finance	Creditworthiness	142	310
	Credit risk	39	85
	Bank lending	26	59
	Loan accessibility	18	41
	Collateral requirement	11	27
Theme 3: KVIC Schemes & Rural Entrepreneurship	KVIC	112	251
	Entrepreneurship development	44	96
	Skill development	19	44

	Rural artisans	15	31
	PMEGP	13	28
Theme 4: Rural Development & Livelihood Generation	Rural development	126	270
	Employment generation	31	70
	Village industries	18	42
	Inclusive growth	14	29
	Household income	8	18
Theme 5: Financial Inclusion & Government Support	Financial inclusion	134	289
	Microfinance	47	99
	Government schemes	25	61
	Subsidies	16	33
	Institutional financing	12	24
Theme 6: Digital Transformation & Market Access	E-commerce adoption	78	160
	Digital payments	41	93
	Technology acceptance	22	52
	Market linkages	16	37
	Digital marketing	12	26
Theme 7: Sustainability & Long-Term MSME Growth	Sustainable development	156	301
	Enterprise resilience	27	58
	Green practices	15	32
	Value-chain strengthening	11	24
	Sustainable growth	9	20

Source: Authors' compilation from Scopus database.

Note: Clusters represent the dominant research streams related to sustainability, financial performance and creditworthiness of small enterprises, with specific inclusion of KVIC-related keywords.

Discussion of Knowledge Clusters Using Bibliographic Coupling Analysis

Bibliographic coupling is a scientific mapping method that connects publications based on shared references.

When two research articles cite the same third article, the coupling strength between them increases, enabling the formation of knowledge clusters within a domain (Muchiri et al., 2022). Using VOSviewer, the present study identifies seven distinct thematic clusters within the literature on KVIC, MSMEs, financial performance, creditworthiness and sustainable development. The results are presented in Figures 3, and 4 and the leading articles under each theme are summarised in Table 7.

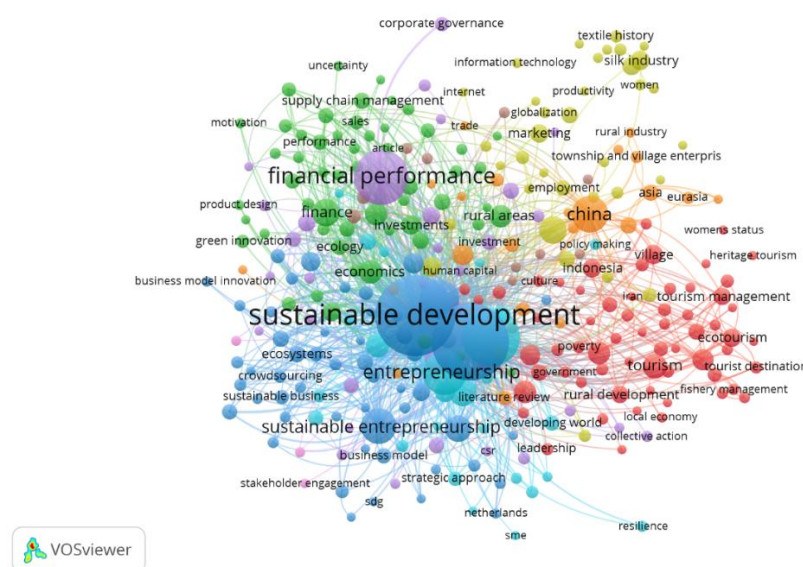


Figure 3. Keyword Co-Occurrence Analysis. Source: VOSviewer output based on the Scopus database. Notes: The figure indicates the results of the keyword co-occurrences computed using the article keywords. The different colour scheme indicates the grouping of similar keywords into research themes

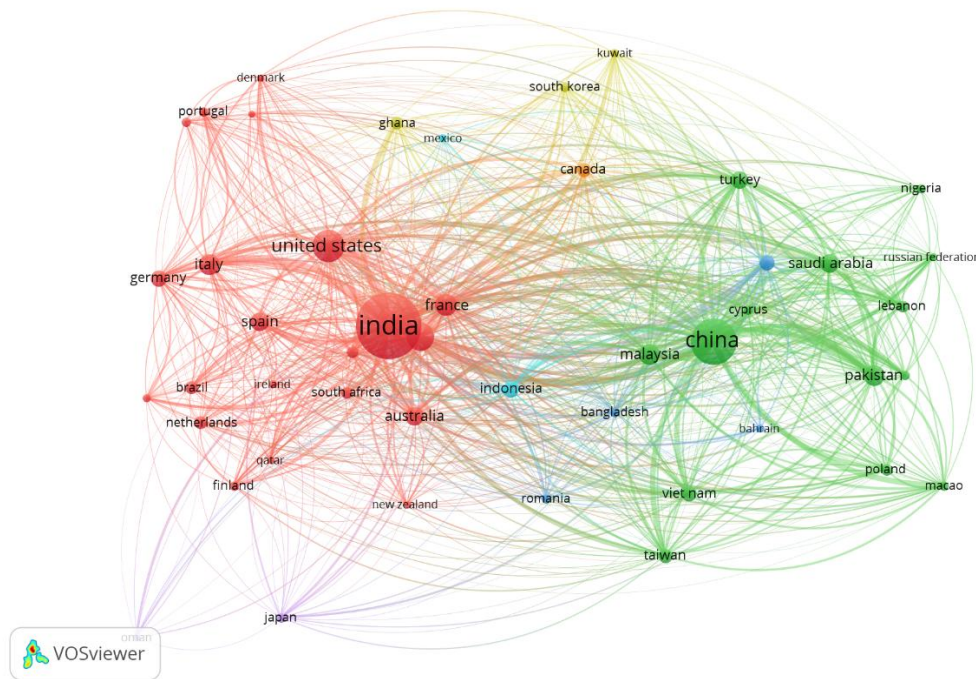


Figure 4. Bibliographic Coupling Analysis. Source: VOSviewer output based on the Scopus database. Notes: The figure represents the knowledge themes developed using bibliographic coupling. The colour scheme indicates the thematic classification of various articles under different groups.

Table 8. Knowledge Themes Based on Bibliographic Coupling

Clusters	Article Title	Author(s) & Year	Total Citations
Theme 1: Financial Performance Assessment of KVIC & MSMEs	"Steering the Sales Force for New Product Selling and Its Financial Outcomes"	Homburg et al. (2019)	28
	"Impact of Liquidity Ratios on Financial Performance: Evidence from Indian Firms"	Farhan et al. (2019)	16
	"Determinants of Financial Performance of US Agricultural Cooperatives"	Singh et al. (2019)	42
Theme 2: Creditworthiness, Lending Behaviour & Access to Finance	"Indonesian Peer-to-Peer Lending and MSME Access to Credit"	Kohardinata et al. (2020)	21
	"Why MSMEs Are Failing: Real World Evidence"	Crane (2020)	6
	"FinTech as a Catalyst for MSME Growth in Indonesia"	Suryanto et al. (2020)	23
Theme 3: KVIC Schemes, Entrepreneurship & Rural Development	"The Concept of Entrepreneurial Ability among Women in MSMEs in Karnataka"	Rajan & Panicker (2020)	15
	"The System of Partnership in Venture Capital Funding for MSMEs"	Chairi et al. (2020)	2
	"Financial Education for MSMEs in Bogotá"	López-Peña (2020)	1
Theme 4: Governance, CSR, and Sustainable Performance of MSMEs	"Moderating Effect of Firm Size on CSR and Economic Performance in MSMEs"	Sánchez-Infante Hernández et al. (2020)	

Source: Authors' compilation from the Scopus database.
Notes: The table represents the knowledge themes developed using bibliographic coupling. The prominent articles (based on citations) under each theme have been summarized in the table.

Theme 1: Assessing Financial Performance of KVIC and MSMEs

This cluster analyzes critical financial performance variables of KVIC-driven enterprises and MSMEs from 42 studies assessing profitability, liquidity, turnover efficiency, and sustainability. Researchers like Singh et al.

(2019), Farhan et al. (2019), and Homburg et al. (2019) analyzed metrics such as ROA, ROE, and liquidity ratios. The study's findings show that, for MSMEs, market volatility, liquidity problems, and management quality are decisive factors towards their long-term financial health. In rural KVIC enterprises, working capital management, production efficiency, and innovation adoption are emphasized as enablers that enhance financial resilience, creditworthiness, and the potential for investment.

Theme 2: Creditworthiness, Lending Behaviour & Access to Finance

The second theme includes 38 publications focused on creditworthiness assessment, bank lending behaviour and MSME access to formal financing. Works by Kohardinata et al. (2020), Crane (2020) and also Suryanto et al. (2020), who have been concentrating on how fintech, collateral needs and P2P lending serve as options rather than traditional banking constraints. The conclusion drawn from this analysis is that MSMEs have the issues of information asymmetry, knowledge about finance lack, and poor documentation that would have adverse impact on the creditworthiness. Other investigations have also emphasized on the moderating influence of corporate governance, financial control, and entrepreneurial capacity on the strengthening of creditworthiness profile. For KVIC-supported enterprises, creditworthiness is closely tied to PMEGP subsidy norms, repayment history and business formalization, showing that the policy support significantly improve loan accessibility.

Theme 3: KVIC Schemes, Rural Entrepreneurship & Skill Development

There are 31 articles in this cluster, which focus on KVIC's institutional role in rural entrepreneurship, livelihood creation and capacity building. They identify the contributions of PMEGP, SFURTI and cluster development programs towards the development of microenterprises, artisans and village industries. Interestingly, a number of authors including Rajan & Panicker, 2020; Chairi et al., 2020, pointed to the entrepreneurship ability, mentorship, and venture capital models on the strengthening of the grassroots manufacturing and craft-based businesses. Now, the integrated KVIC model of skill training, credit linkage and market facilitation has emerged as a critical ecosystem driver of inclusive industrial growth.

Theme 4: MSME Sustainability, Governance & CSR-Led Development

The fourth theme consists of 36 publications, which revolve around governance and the CSR practices, social responsibility, and sustainability connection of MSMEs. For example, Sánchez-Infante Hernández et al. (2020) and Gupta (2020) conclude that sustainable management practices enhance competitiveness and that CSR reinforces both reputation and long-term performance. For KVIC-based enterprises, sustainable development entails eco-friendly production, natural fibre usage, resource-efficient manufacturing, and rural ecological

balance. This cluster highlights that sustainable MSME development doesn't only target the environment, but social empowerment, resilient business models, and ethical operations.

Theme 5: Digital Transformation, Market Access & Technology Adoption

The theme of this study covers 29 other works that propose digitalization as growth promotion. Contributions by Rozaq et al. (2020), Purnamasari et al. (2020), and Rani & Patra (2020) show the increasing relevance of e-commerce, digital payments, technological readiness, and social media marketing in enterprise scale-up. Digital transformation helps MSMEs and KVIC artisans in: Market outreach, Branding visibility, Financial documentation, Customer engagement. This cluster recognizes that digital integration strongly influences creditworthiness, revenue stability, and expansion prospects.

Theme 6: Financial Inclusion, Microfinance & Government Support Systems

The sixth cluster comprises 34 academic works on financial inclusion mechanisms, microfinance models, subsidy frameworks and institutional credit access for MSMEs. Studies: del Pilar López-Peña (2020), Idrovo et al. (2020) and Ciekanowski & Wyrębek (2020) emphasize systemic factors such as microfinance, banking reforms and financial literacy. For KVIC's ecosystem, financial inclusion is crucial in getting rural entrepreneurs on board with formal finance networks to achieve improved loan performance and enterprise continuity. Studies show that this equitable access can be supported by digital microfinance, regulated FinTech and targeted government schemes.

Theme 7: Sustainable Development & Long-Term Enterprise Growth

The end theme collates 27 articles connecting MSME development with sustainable growth, green approaches and long-term competitiveness. Research by Hermawati (2020) and others showed that responsible marketing, HR performance and sustainable business strategies strengthen enterprise durability. For KVIC-based units, sustainability is rooted in: Natural-resource-based production, Traditional craft preservation, Waste minimisation, Social upliftment of artisans. This topic emphasises the wider socio-economic relevance of KVIC and MSMEs in serving India's rural sustainability agenda.

Validation of Knowledge Themes: Triangulation

This study applies mixed-methods methodology to confirm thematic clusters created through bibliometric analysis. Keyword co-occurrence and bibliographic coupling quantitatively mapped findings of KVIC and rural MSME literature, with consistent themes that confirmed the strong clustering. In terms of the qualitative aspect, interviews with two professionals specialising in rural finance and cooperative development confirmed the clusters, showing their relevance for KVIC

program performance, microfinance, creditworthiness, entrepreneurship support and livelihood impact. This

expert validation confirms the themes' importance in informing future research.

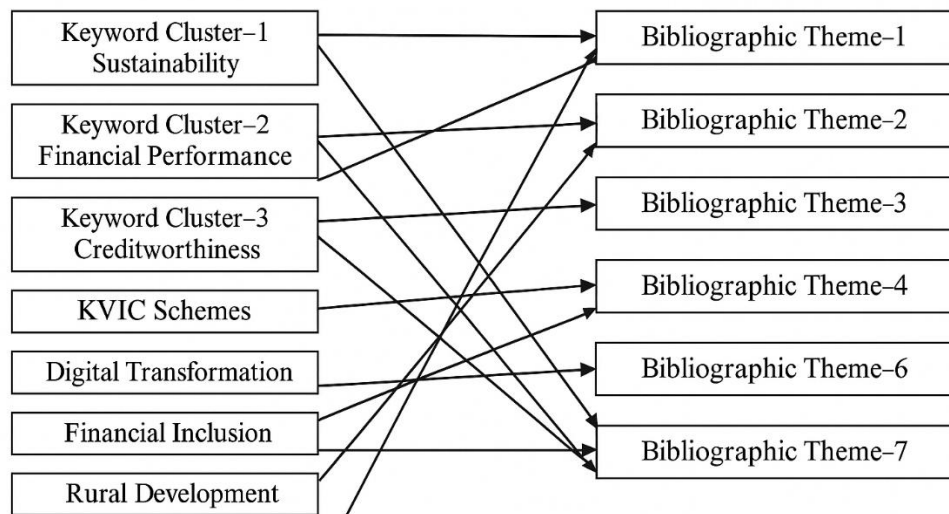


Fig. 2. Triangulation of Knowledge Themes.

Notes: The figure represents the validation of research themes identified using two different methods of scientific mapping that is, keyword co-occurrence and bibliographic coupling.

Emerging Trends in KVIC Financial Performance & Creditworthiness

Recent research (2019–2024) reveals critical trends for KVIC and rural enterprise financing. Working capital, supply chains, and credit access for village producers were disrupted by COVID-19, with uneven recovery. Credit access and efficiency were enhanced with the integration of digital financial inclusion through fintech and financial literacy. The increasing popularity of eco-certified products and sustainable practices boosts profitability and creditworthiness. Blended finance—mixing concessional funds, microcredit, and subsidies—improves resilience and bankability. The increased number of local bank connections, cluster development, and capacity building facilitate KVIC's role in enhancing financial performance. In combination, these trends highlight digitalisation, product innovation, blended finance, and institutional strengthening to facilitate growth in KVIC-supported rural enterprises.

Directions for Advancing Future Research

To guide further work on KVIC financial performance and creditworthiness, we propose targeted research questions and methodological paths across seven priority areas.

Table 9. Future Research Questions		
Theme 1: KVIC Schemes, Credit Access & Financial Performance		
Knowledge Theme	Research Questions	Sources (Adapted)
KVIC financing mechanisms, PMEGP credit flow, MSME performance	1. How can KVIC improve credit accessibility for micro-entrepreneurs under PMEGP and REGP?	Edoho (2015); Thangavel & Hariharan (2015)
	2. What factors influence successful credit utilisation and repayment capacity of KVIC-supported units?	Saxena & Jagota (2015); Chairi et al. (2020)
	3. How do KVIC subsidies and margin money schemes affect long-term financial sustainability of rural enterprises?	Gupta (2020); Pilar López-Peña (2020)

	4. What reforms are required to standardise performance evaluation of KVIC-funded enterprises?	Crane (2020); Ciekowski & Wyrębek (2020)
Theme 2: MSME Financial Performance & Creditworthiness		
Financial performance, liquidity, creditworthiness of MSMEs	5. How do liquidity indicators (current ratio, quick ratio) influence MSME creditworthiness?	Farhan et al. (2019)
	6. To what extent can financial literacy improve MSME financial performance?	Pilar López-Peña (2020)
	7. How do bank lending policies and collateral requirements shape MSME creditworthiness?	Kohardinata et al. (2020)
	8. What financial modelling techniques can improve KVIC's assessment of borrower creditworthiness?	Suryanto et al. (2020)
Theme 3: Sustainable Development & KVIC/MSME Ecosystem		
Sustainable enterprise, responsible marketing, eco-friendly rural industries	9. How can KVIC-supported MSMEs integrate sustainable production practices (eco-friendly, green manufacturing)?	Hermawati (2020)
	10. How do khadi and village industries contribute to the SDGs at rural cluster level?	Gupta (2020)
	11. What are the barriers faced by MSMEs in adopting sustainable technologies and green processes?	Sharma & Kharub (2015)
	12. How does skill training under KVIC support sustainability and competitiveness?	Rajan & Panicker (2020)
Theme 4: Institutional Support, Governance & MSME Growth		
Governance, policy reforms, support institutions	13. How can governance reforms enhance MSME efficiency and credit repayment?	Saxena & Jagota (2015)
	14. What institutional mechanisms help improve KVIC's monitoring of beneficiaries?	Natarajan & Sheik Abdullah (2015)
	15. How can MSMEs leverage fintech-based credit solutions to improve governance and transparency?	Purnamasari et al. (2020)

Theme 5: Digital Finance, Fintech & MSME Competitiveness		
Digital tools, fintech adoption, e-commerce	16. How does fintech adoption improve credit access for KVIC and MSME beneficiaries?	Suryanto et al. (2020)
	17. How can digital payments, e-wallets, P2P lending enhance the financial performance of MSMEs?	Kohardinata et al. (2020)
	18. What role does digital capability play in improving MSME competitiveness and creditworthiness?	Rozaq et al. (2020)
Theme 6: Entrepreneurship Capacity & Skill Development in KVIC		
Entrepreneurial ability, women entrepreneurship, cluster development	19. What entrepreneurial skills influence success of KVIC-supported units?	Edoho (2015)
	20. What challenges do women entrepreneurs face in accessing KVIC credit schemes?	Rajan & Panicker (2020)
	21. How does cluster-based support enhance MSME performance in KVIC sectors?	Mora-Riapira et al. (2015)
Theme 7: MSME Innovation, Market Linkages & Future Growth		
Innovation, market access, competitiveness	22. How can innovation capabilities improve the financial performance of village industries?	Bhattacharyya & Jha (2015)
	23. How do market linkages and marketing support under KVIC impact enterprise survival?	Thampi et al. (2015)
	24. How can MSMEs use social media and digital marketing to enhance growth and creditworthiness?	Rani & Patra (2020)

Proposal 1: Performance of KVIC Financing Instruments

Research questions: Which KVIC financing instruments (subsidies, working-capital loans, in-kind support) most strongly predict enterprise survival and profitability? How does instrument design affect repayment capacity and formal credit uptake?

Suggested methods: Mixed-methods administrative loan-level panel data analysis combined with purposive interviews of beneficiaries and local banks; quasi-experimental designs where feasible.

Proposal 2: Creditworthiness Assessment for Village Enterprises

Research questions: What non-traditional indicators (digital transaction histories, cluster-level sales, social collateral) reliably predict creditworthiness of khadi and village enterprises? How can lenders incorporate these signals into scoring models?

Suggested methods: Machine-learning models on combined administrative, transactional and survey data; field validation with partner NBFCs/cooperative banks.

Proposal 3: Role of Digital Finance and Financial Literacy

Research questions: To what extent does the adoption of digital payments and record-keeping improve financial performance and perceived bankability? What financial literacy components most influence sustainable credit behaviour?

Suggested methods: Randomized controlled trials (RCTs) of digital onboarding + training; difference-in-differences analysis using uptake dates.

Proposal 4: Product & Market Upgrading (Value Addition)

Research questions: Does value addition (certification, branding, market linkages) translate into higher margins and improved access to institutional credit for KVIC-supported firms? Which market channels deliver the largest creditability gains?

Suggested methods: Longitudinal firm-level profitability analysis and buyer-seller network mapping.

Proposal 5: Blended Finance & Public-Private Partnerships

Research Questions: How effective are blended finance arrangements-public seed capital and private credit-to mobilize commercial funds for village enterprises? What governance arrangements ensure proper use of funds and repayment?

The proposed methods include comparative case studies across districts, supplemented by cost-benefit and financial sustainability assessments.

Proposal 6: Climate-Smart and Sustainable Production

Research questions: In what ways can the adoption of low-input, eco-friendly production methods improve firms' long-term financial resilience and creditworthiness? What financing models best support such transitions?

Available online at: <https://jtar.org>

Suggested methods include panel data of energy/resource use and returns, life-cycle cost analyses, and piloting of green loans.

Proposal 7: Institutional and Policy Frameworks

Research questions: What kind of institutional arrangements, i.e. KVIC-bank partnerships, cluster-based lending, and local governance, are best-suited to translate grant support into sustainable credit histories? How do policy incentives such as priority-sector designation and credit guarantees change lenders' conduct? Proposed solutions consist of the policy process of policy evaluation through administrative data sets, interviews with stakeholders and simulation modelling of policy counterfactuals.

Summary of Key Findings

1. Bibliometric analyses reveal that there are significant clusters which can be associated with KVIC-related performance, rural enterprise creditworthiness, financing instruments, digital inclusion, and market integration across finance, development studies and rural management.
2. Triangulation with the interviews with experts verifies the thematic nature and practical relevance of these clusters to policymakers and practitioners in the village industry.
3. Emerging trends include digital finance, blended funding models, green/sustainable production, and product upgrading all levers with material consequences for enterprise profitability and credit access.

Implications of the study**Theoretical implications**

This study constructs an in-depth synthesis of fragmented literatures on rural enterprise finance, showing the role of integrated frameworks that mediate between financial economics (credit scoring and risk assessment), institutional theory (governance and partnerships) and livelihood sustainability models. It points out the significance of introducing non-traditional credit signals and the possibility of interdisciplinary approaches (machine learning + ethnography) for theories regarding creditworthiness in the context of informal enterprises.

Practical and policy implications For practitioners and policymakers (KVIC, regional banks, NBFCs, and development agencies): (a) invest in digitisation of transactions and simple bookkeeping at the beneficiary level to create verifiable credit histories; (b) pilot blended finance instruments that reduce first-loss risk for commercial lenders; (c) support value-chain integration and market certification to improve margins; (d) design financial literacy + product-market interventions together to ensure credit discipline and income stability.

Conclusion and Limitations

The present study aims to comprehensively analyse the extant research on sustainability, financial performance, and creditworthiness published during 2015 to 2025

using the SPAR-4-SLR framework. The study bibliometric mapping, the review identified seven major thematic clusters covering financial performance, access to finance, sustainability practices, digital transformation, entrepreneurial capability, institutional support and rural development. The research highlights the key performance indicators of bibliometric analysis, such as impactful journals (Sustainability, Journal of Small Business Management, Developmental Entrepreneurship), authors (Abdulla et.al, Cosa) and articles. The current research enhances the extant review-based literature on sustainability, financial performance and creditworthiness insight to KVIC by incorporating thematic analysis of previous research studies using a mixed-method approach. The further study also extends the financial performance, sustainability and creditworthiness by identifying novel and underexplored knowledge themes, such as financial performance, access to finance, sustainability practices, digital transformation, entrepreneurial capability, institutional support, and rural development. Which acts as an ignition point for budding scholar This study enriches the existing literature by discussing several seminal gaps in extant research, such as a comprehensive data-driven insight into the financial performance of KVIC-supported enterprises, the methods of assessing creditworthiness, and how such elements collectively contribute to sustainable development. Current literature is fragmented and misses an integrated financial analysis, credit assessment framework, digital finance linkages, and systematic thematic mapping for KVIC enterprises. This forms a significant knowledge gap that the present study attempts to fill. The systematic review also discusses theoretical models, methodological process and discuss theoretical model, methodological process and potential dataset that can be explored for answering the proposed research questions. Followed by the academic contributions, the study also enumerates important implications for policymakers and practitioners. The findings advocate concrete policy interventions at several key points such as (a)reflecting a multidisciplinary interest across finance, development studies and rural management. (b)Triangulation with expert interviews affirms the thematic validity and practical salience of these clusters for policymakers and practitioners supporting village industries. (c)Emerging trends emphasise digital finance, blended funding models, green/sustainable production, and product upgrading as levers that can materially affect enterprise profitability and credit-accessibility.

The current research, while valuable, does have certain limitations. The primary constraint is the exclusive use of a single database, Scopus, for data extraction. This approach was chosen to prevent duplication of research articles, yet it may limit the dataset and omit some financial performance, sustainability, and creditworthiness insights to KVIC articles published in journals not covered by Scopus. Future studies could broaden this by incorporating other databases. Second, the present study considers only English articles and excludes the research studies published in another

language because of translation constraints. However, future research may address this concern by incorporating non-English articles as well. Third, the study operationalises the SPAR-4-SLR protocol for the current research; however, the latest research framework POWER, can be adopted in future SLR-based research. Finally, the current study considers journal articles published in the area of Financial performance, MSMEs, creditworthiness and sustainability and excludes book chapters and conference proceedings to ensure consistent review quality. Future studies may consider these articles as well to broaden the research.

Declaration of Conflicting Interest

The author declared no potential conflicts of interest with respect to the research, authorship and /or publication of this article.

Funding

The author received no financial support for the research, authorship and publication of this article.

References

1. <https://msme.gov.in/>
2. <https://www.kvic.gov.in/kvicres/index.php>
3. Albort-Morant, G., Henseler, J., Leal-Millán, A., & Cepeda-Carrión, G. (2017). Mapping the Field: A Bibliometric Analysis of Green Innovation. *Sustainability*, 9(6), 1011. <https://doi.org/10.3390/su9061011>
4. Nirwal, Prachi & Bhardwaj, Anshu. (2025). Mapping the Nexus of Green Innovation and Sustainability in MSMEs: A Bibliometric Perspective. *Business Strategy & Development*. 8. 10.1002/bsd2.70192.
5. Mehta, S. (2013). Towards creating a Sustainable design eco-system for MSMEs: A Design Clinic approach. 2013 *IEEE-Tsinghua International Design Management Symposium: Design-Driven Business Innovation, TIDMS 2013 - Proceedings*, 230–235. <https://doi.org/10.1109/tidms.2013.6981242>
6. Thangavel, N. & Hariharan, V.. (2015). Financing MSME sector - Gaps and challenges. 12. 303-310.
7. Shahzad, M., Qu, Y., Rehman, S. U., & Zafar, A. U. (2022). Adoption of green innovation technology to accelerate sustainable development among manufacturing industry. *Journal of Innovation & Knowledge*, 7(4), 100231. <https://doi.org/10.1016/j.jik.2022.100231>
8. Salloum, S., Marzouqi, A. A., Alderbashi, K. Y., Shwede, F., Aburayya, A., Saidat, M. R. A., & Al-Marroof, R. S. (2023). Sustainability Model for the Continuous Intention to Use Metaverse Technology in Higher Education: A Case Study from Oman. *Sustainability*, 15(6), 5257. <https://doi.org/10.3390/su15065257>
9. Zainuri, Z., Yasin, M. Z., Amijaya, R. N. F., Wilantari, R. N., & Vipindartin, S. (2024). The role of government policy on the performance of MSMEs in the creative industry: evidence from

- Jember Regency, East Java, Indonesia. *Cogent Economics & Finance*, 13(1). <https://doi.org/10.1080/23322039.2024.2446657>
10. Yahya, A., Nurastuti, P., Kusumawati, H., Rakhmat, A. S., Nurjanah, R., & Yulianto, K. (2025). Optimizing Funding and Networks for MSME Success A Quantitative Analysis in Bekasi. *Proceeding - 2025 4th International Conference on Creative Communication and Innovative Technology: Empowering Transformative MATURE LEADERSHIP: Harnessing Technological Advancement for Global Sustainability, ICCIT*, 1–7. <https://doi.org/10.1109/iccit65724.2025.11167421>
 11. Kumarasamy, D., Singh, P., & Sharma, A. K. (2024). Financial accessibility and MSME's labour productivity: evidence from developing countries. *Indian Growth and Development Review*, 17(2), 186–206. <https://doi.org/10.1108/igdr-08-2023-0115>
 12. Abduh, T., Remmang, H., Abubakar, H., & Karim, A. (2024). *Entrepreneurship and MSME market orientation toward creative industries: Society Era 5.0 in Makassar city*. <https://doi.org/10.55493/5002.v14i2.4964>
 13. Absah, Y., Sadalia, I., Yuliaty, T., & Ilham, R. N. (2023). MSMEs in Medan City during the New Normal. <https://doi.org/10.47750/QAS/24.193.36>
 14. Agasty, S., Tarannum, F., & Narula, S. A. (2023). Sustainability innovation index for micro, small and medium enterprises and their support ecosystems based on an empirical study in India. *Journal of Cleaner Production*, 137793. <https://doi.org/10.1016/j.jclepro.2023.137793>
 15. Aldhi, I. F., Suhariadi, F., Supriharyanti, E., Rahmawati, E., & Hardaningtyas, D. (2024). Financial technology in recovery: Behavioral usage of payment systems by Indonesian MSMEs in the post-pandemic era. *International Journal of Computing and Digital Systems*, 16(1), 98. <https://doi.org/10.12785/ijcds/160198>
 16. Bahulikar, S., Chattopadhyay, A., & Hudnurkar, M. (2023). Framework for integrating lean thinking with Industry 4.0: Way ahead for entrepreneurs in Indian MSMEs. *Global Business Review*. <https://doi.org/10.1177/09713557231184531>
 17. Bhalla, N., Kaur, I., & Sharma, R. K. (2024). Impact of Goods and Service Tax on MSME sector: A study using artificial neural network and multivariate analysis. *Indian Journal of Economics*, 41235612. <https://doi.org/10.1177/00194662241235612>
 18. Bhalla, N., Sharma, R. K., & Kaur, I. (2025). Investigating the effect of GST on operational performance, cost efficiency and profit margins of MSMEs. *International Journal of Applied Economics*. <https://doi.org/10.1504/IJAAPE.2024.135551>
 19. Buyondo, H. (2024). Islamic finance principles and performance of micro, small and medium enterprises (MSMEs) in Uganda. *International Journal of Islamic and Middle Eastern Finance and Management*. <https://doi.org/10.1108/IMEFM-05-2023-0201>
 20. Dahmiri, D., Junaidi, J., Johannes, J., Yacob, S., & Indrawijaya, S. (2024). *The impact of market orientation on marketing performance: Exploring the moderating role of competitive advantage*. *Business: Theory and Practice*, 20174. <https://doi.org/10.3846/btp.2024.20174>
 21. Egere, O. M., Maas, G., & Jones, P. (2024). A critical analysis of the Nigerian entrepreneurial ecosystem on transformational entrepreneurship. *Journal of Economic Issues*. <https://doi.org/10.1080/00472778.2022.2123109>
 22. Febriansyah, A., Syafei, M. Y., Narimawati, U., Chochole, T., & Stakic, A. J. (2024). *How important is financial inclusion for the performance of MSMEs?*. *Australasian Accounting, Business and Finance Journal*, 18(5). <https://doi.org/10.14453/aabfj.v18i5.04>
 23. Handayani, B. D., Kiswanto, K., Hajawiyah, A., Harjanto, A. P., & Rahman, M. F. (2023). Analysis of the use of accounting information technology in MSMEs in Indonesia. *Quality Access to Success*, 24(195), 14. <https://doi.org/10.47750/QAS/24.195.14>
 24. Hudnurkar, M., Ambekar, S. A., Bhattacharya, S., & Sheorey, P. A. (2023). Relationship of total quality management with corporate sustainability in the MSME sector: Does innovation capability play a mediating role? *The TQM Journal*. <https://doi.org/10.1108/TQM-03-2022-0095>
 25. John, L. (2023). Can MSMEs in tourism survive the COVID-19 storm? A MSME view of their stakeholders. *Benchmarking: An International Journal*. <https://doi.org/10.1108/BIJ-11-2021-0687>
 26. Joshi, A. K., Matai, R., & Murthy, N. N. (2024). Measuring the impact of ICT investment on the profitability of Indian manufacturing MSMEs. *Business Leadership*. <https://doi.org/10.1108/BL-03-2023-0101>
 27. Junaedi, Y. B., Nurlia, Alexandriel, J. F., & Anita, T. L. (2024). Sustainable usage intention: QRIS payment acceptance for SMEs. *IEEE Conference Proceedings*. <https://doi.org/10.1109/ICBIR61386.2024.10875860>
 28. Kapoor, V. (2024). Exploring the Indian MSME perspective on integrating AI-enabled solutions in the recruitment process: An AHP approach. *International Journal of Globalisation and Small Business*. <https://doi.org/10.1504/IJGSB.2024.138672>
 29. Lesmana, R., Kadim, A., Rito, Andayani, D., & Khairunnisa, N. (2024). Leveraging financial technology and digital marketing for MSME growth. *IEEE Conference Proceedings*. <https://doi.org/10.1109/ICCIT62134.2024.10701224>

30. Manisha, & Aggarwal, R. (2024). *Financial literacy and access to finance as problems of MSMEs: A review of literature*. Elsevier.
31. Mardiatmi, B. D., Supriadi, Y. N., Wikantari, M. A., Pinem, D. B., & Ariani, N. (2023). *Analyzing the role of the Quadruple Helix in improving MSME management performance*. Seputar. <https://doi.org/10.46585/sp32011794>
32. Meraz-Sepúlveda, A. (2024). *Business technology strategy as a key factor for MSME competitiveness*. Estudios de Administración. <https://doi.org/10.31637/epsir-2024-1125>
33. Mitra, R., Dongre, A., Dangare, P., Goswami, A., & Tiwari, M. K. (2024). *Knowledge graph driven credit risk assessment for MSMEs*. International Journal of Production Research. <https://doi.org/10.1080/00207543.2023.2257807>
34. Mondal, S., Singh, S., & Gupta, H. (2023). *Green entrepreneurship and digitalization enabling circular economy in MSMEs*. Journal of Cleaner Production, 138433. <https://doi.org/10.1016/j.jclepro.2023.138433>
35. Musa, C. I., Sahabuddin, R., Tawe, A., & Haeruddin, M. I. M. (2023). *Effects of knowledge sharing and technological innovation capabilities on competitive advantage in the culinary MSME sector*. Asian Economic and Financial Review, 10(4). <https://doi.org/10.18488/29.v10i4.3546>
36. Nurasyiah, A., Syamputri, D., Al Adawiyah, R. A., Mahri, A. J. W., & Ismail, A. G. (2024). *Islamic wealth management and prosperity of MSME households during Covid-19*. International Journal of Ethics & Systems. <https://doi.org/10.1108/IJOES-09-2021-0165>
37. Pandya, D., Kumar, G., & Singh, S. (2024). *Aligning sustainability goals with Industry 4.0 technologies in MSMEs*. Journal of Business & Industrial Marketing. <https://doi.org/10.1108/JBIM-04-2022-0183>
38. Perdana, B. S., Ma'shum, A. M. M. H., & Susminingsih, S. (2024). *Effectiveness of the 3-in-1 financial reporting model for MSME sustainability*. Accounting & Finance, 05(1). [https://doi.org/10.21511/afc.05\(1\).2024.02](https://doi.org/10.21511/afc.05(1).2024.02)
39. Priyaadarshini, R. G., & Jena, L. K. (2024). *Does self and role efficacy navigate effectiveness among MSME managers?* Journal of Asia Business Studies. <https://doi.org/10.1108/JABS-10-2023-0427>
40. Rahadian, A., & Thamrin, H. (2023). *Factors affecting MSME adoption of fintech lending: A TAM approach*. Brazilian Business Review. <https://doi.org/10.15728/bbr.2023.20.3.4.en>
41. Rita, M. R., & Nastiti, P. K. Y. (2024). *Financial bootstrapping, digital transformation and MSME financial performance*. Cogent Business & Management. <https://doi.org/10.1080/23311975.2024.2363415>
42. Rosyidiana, R. N., & Narsa, I. M. (2024). *Digitalization, literation and innovation in MSMEs and financial performance*. Cogent Business & Management. <https://doi.org/10.1080/23311975.2024.2342488>
43. Saifurrahman, A., & Kassim, S. H. (2024). *Regulatory issues inhibiting financial inclusion: Islamic banks and MSMEs in Indonesia*. Qualitative Research in Financial Markets. <https://doi.org/10.1108/QRFM-05-2022-0086>
44. Saifurrahman, A., & Kassim, S. H. (2023). *Mitigating asymmetric information to enhance MSME Islamic financial inclusion*. Qualitative Research in Financial Markets. <https://doi.org/10.1108/QRFM-12-2021-0202>
45. Sari, D., Priatna, F., & Adhariani, D. (2023). *Environmental awareness of MSMEs during the pandemic*. Business Strategy & Development. <https://doi.org/10.1002/bsd2.267>
46. Shaferi, I., Setyanto, R. P., & Nawarini, A. T. (2024). *Transformative relational management model to improve Batik MSME marketing*. Quality Access to Success. <https://doi.org/10.47750/QAS/25.200.26>
47. Singh, A. (2024). *Information asymmetry and high transaction costs: Challenges for MSME finance*. Global Journal of Law & Economics. <https://doi.org/10.69893/gjle.2024.000065>
48. Widigdo, A. M. N., & Triyanto, A. (2024). *Knowledge and compliance in increasing MSME halal certification intention*. International Journal of Business & Society. <https://doi.org/10.33736/ijbs.6904.2024>
49. Chemaket, A. S., & Kithandi, C. K. (2025). *Credit access and financial performance of micro, small, and medium enterprises in Dagoretti North Sub-County, Kenya*. East African Finance Journal, 4(4), 63–78. <https://www.researchgate.net/publication/397208743>
50. Gupta, P. K. (2024). *A study on the financial performance of micro, small and medium enterprises: Impact of credit accessibility*. Journal of Business and Economic Studies.
51. IMF. (2024). *Financing barriers and performance of micro, small, and medium enterprises*. International Monetary Fund. <https://www.elibrary.imf.org>
52. Intellectap & International Finance Corporation. (2012). *Micro, small and medium enterprise finance in India: A research study on needs, gaps and way forward*.
53. Joshi, S. (2025). *The impact of credit constraints on MSME performance: Insights from the financial ecosystem of Delhi–NCR*.
54. Junaedi, Y. B., Nurlia, A., Alexandriel, J. F., & Anita, T. L. (2024). *Sustainable usage intention: QRIS payment acceptance for small and medium enterprises*. ICBIR Conference Proceedings.
55. Nair, G. S. (2024). *Credit access towards MSMEs: An investigation of credit constraints in small enterprises*. Journal of Banking & Finance Studies.

56. SIDBI. (2025). *Understanding Indian MSME sector: Progress, challenges and classification changes*. Small Industries Development Bank of India.
57. World Bank. (2025). *MSME finance gap: Assessment of shortfalls and pathways forward*.
58. Aria, M., & Cuccurullo, C. (2017). *bibliometrix: An R-tool for comprehensive science mapping analysis*. *Journal of Informetrics*, 11(4), 959–975.
59. van Eck, N. J., & Waltman, L. (2010). *Software survey: VOSviewer, a computer program for bibliometric mapping*. *Scientometrics*, 84(2), 523–538.
60. Martin-Martin, A., Orduna-Malea, E., Thelwall, M., & López-Cózar, E. D. (2021). *Google Scholar, Scopus and Web of Science: A systematic comparison across disciplines*. *Journal of Informetrics*, 15(2), 101105.
61. Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group. (2009). *Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement*. *PLoS Medicine*, 6(7), e1000097.
62. Paul, J., Lim, W. M., O'Cass, A., & Hao, A. (2021). *SPAR4-SLR: A structured protocol for conducting systematic literature reviews and bibliometric analyses in management research*. *European Management Review*, 18(1), 3–22.
63. Pranckutė, R. (2021). *Comparison of Web of Science and Scopus databases in the context of bibliometric evaluations*. *Scientometrics*, 126(5), 1–25.
64. Shamseer, L., Moher, D., et al. (2015). *Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement*. *Systematic Reviews*, 4(1), 1.
65. Alawattage, C., Graham, C., & Wickramasinghe, D. (2019). *Microaccountability and biopolitics: Microfinance in a Sri Lankan village*. *Accounting, Organizations and Society*, 72, 38–60. <https://doi.org/10.1016/j.aos.2018.05.008>
66. Usman, S. M., Bukhari, F. A. S., You, H., Badulescu, D., & Gavriliu, D. (2020). *The effect and impact of signals on investing decisions in reward-based crowdfunding: A comparative study of China and the United Kingdom*. *Journal of Risk and Financial Management*, 13(12), Article 325. <https://doi.org/10.3390/jrfm13120325>
67. Hermawati, A. (2020). *Transglobal leadership approach to sustainable tourism competitiveness at tourism sector-engaged MSMEs through integrated human resource performance and responsible marketing*. *International Journal of Tourism Cities*, 6(4), 863–883. <https://doi.org/10.1108/IJTC-06-2019-0085>
68. Gupta, D. (2020). *Think “Big”: Strategizing post-colonial revival in India*. *Indian Journal of Labour Economics*, 63, 145–150. <https://doi.org/10.1007/s41027-020-00270-1>
69. Mokgohlwa, P. (2017). *Seeking strategies for sustainability in tourism entrepreneurship in South Africa*. *African Journal of Hospitality, Tourism and Leisure*, 6(4), 1–10.
70. Favre, C. C. (2017). *The Small2Mighty tourism academy: Growing business to grow women as a transformative strategy for emerging destinations*. *Worldwide Hospitality and Tourism Themes*, 9(5), 555–563. <https://doi.org/10.1108/WHATT-07-2017-0034>
71. De São Pedro Filho, F. D., Lima, V. A., da Silva Neto, J. M., da Silva Muller, C. A., & Matos, G. B. D. C. (2017). *Building the capacity for sustainable innovation in the Amazon region*. *International Journal of Innovation and Learning*, 22(1), 23–43. <https://doi.org/10.1504/IJIL.2017.085246>
72. Abdullah, R., & Ismail, A. G. (2017). *Taking stock of the waqf-based Islamic microfinance model*. *International Journal of Social Economics*, 44(8), 1018–1031. <https://doi.org/10.1108/IJSE-06-2015-0176>
73. Stepanova, Y. N., Zinovyeva, I. S., & Busarina, Y. V. (2017). *Complementary approach to functioning of entrepreneurial structures under economic instability of the region*. In *Contributions to Economics* (pp. 519–528). https://doi.org/10.1007/978-3-319-45462-7_50
74. Bakas, F. E. (2017). *Community resilience through entrepreneurship: The role of gender*. *Journal of Enterprising Communities*, 11(1), 61–77. <https://doi.org/10.1108/JEC-01-2015-0008>
75. Pal Singh, K. D., & Duggal, T. (2017). *Corporate social responsibility & sustainable development*. *International Journal of Applied Business and Economic Research*, 15(1), 241–250.