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Towards a Maturity Model for Accounting and Financial Sustainability in Indonesian MSMEs: Insights from a Systematic Literature Review

Yumniati Agustina[1, 2] | Yvonne Augustine[1]*

[1]*Universitas Trisakti, Department of Accounting, Jakarta, Indonesia*
[2]*ITB Ahmad Dahlan, Department of Accounting, Jakarta, Indonesia*

*Correspondence to: Yvonne Augustine, Universitas Trisakti, Department of Accounting, Jl. Kyai Tapa No. 1, Jakarta Barat 11440, Indonesia.
E-mail: yvonne.augustine@trisakti.ac.id

Abstract: This research aims to gather insights and synthesize information by conducting a methodical review of existing literature to identify dimensions and aspects for creating a maturity model for evaluating the preparedness of Micro, Small, and Medium Enterprises in Indonesia regarding their accounting and financial sustainability. Employing the PRISMA method, the study reviewed papers in Scopus and Google Scholar from 2000 to 2021, uncovering 10 dimensions and 20 measurement aspects crucial for assessing MSMEs' readiness in this area. The research contributes to existing literature and guides future accounting and finance research, with a specific focus on the sustainability of Indonesian MSMEs. Notably, there is a lack of research on the sustainability of MSMEs within accounting and finance. The dimensions and aspects identified will inform the development of a tailored maturity model to address accounting and financial sustainability within Indonesian MSMEs, offering insights to economic policymakers and stakeholders to advance MSMEs in alignment with environmental, economic, social, and governance principles. The literature search was conducted using only two databases and a relatively short publication timeframe.

Keywords: accounting and financial sustainability, maturity model, MSMEs, systematic literature review.

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INTRODUCTION

A recent MSME-focused literature review delves into various competitiveness aspects, such as open innovation, collaboration, performance measurement, and sustainability management (de Carvalho et al., 2021). The 1987 Bruntland Commission report, "Our Common Future," aimed to intertwine economic progress and environmental balance, defining sustainable development as the fulfillment of current requirements while safeguarding the needs of future generations. Sustainability involves minimizing adverse impacts on people, society, and the environment while enhancing value for consumers, business partners, and stakeholders (Khurana et al., 2019). Recognizing sustainability as a key factor in future competitiveness, substantial investments have been made in this area (Khurana et al., 2019). Tackling dimensions encompassing the economy, society, and environment,

the triple bottom line concept emphasizes equal importance in all aspects for sustained competitiveness (Maheshwari et al., 2020).

Micro, Small, and Medium Enterprises play a crucial role in advancing the Sustainable Development Goals (SDGs), as highlighted in a 2019 report by the United Nations Department of Economic and Social Affairs , supported by the UN Peace and Development Fund. The report highlights MSMEs' roles in the economy, including job creation, income generation for marginalized groups, service provision (e.g., education, health, water, and sanitation), and their impact as energy users/polluters. It establishes direct and indirect connections between MSMEs and all seventeen SDGs (UNDESA, 2019).

In developing countries like Indonesia, MSMEs encounter challenges including credit scarcity, limited market connections, inadequate training, dependence issues, low quality human resource development, low productivity, and limited market share and capital (de Carvalho et al., 2021; Purnamasari et al., 2020, Prasetyo, 2020). The majority of these enterprises exhibit deficiencies in education (financial and technological), managerial expertise, technical capabilities, and entrepreneurial mindset (Noviarto & Samputra, 2021).

Concerning sustainability, challenges to MSME financial sustainability involve facets of economic advancement, such as economic instability, fluctuating exchange rates, elevated transaction expenses, underdeveloped information infrastructure, inequality, political instability, and a swift decline in unilateralism within trade policies (Olarewaju & Msomi, 2021). Within numerous MSMEs, deficient internal accounting practices result in inadequate planning, excessive expenditures, insufficient control, and suboptimal record-keeping, hindering effective decision-making (Etim et al., 2020).

Research into accounting practices, encompassing budgeting, financial recording, and reporting, reveals that in MSMEs, there is a prevailing inclination to prioritize economic sustainability over social and environmental dimensions. Consequently, there is an expectation for MSMEs to proactively integrate the triple bottom line balance into their accounting practices (Marfo et al., 2022).

Utilizing sustainable finance to attain economic sustainability involves considering a blend of economic, social, and governance factors when making investment decisions. This approach ensures that investments create value across multiple dimensions, encompassing economic, social, and environmental aspects, thus achieving a balanced approach to value creation (de Jong & Wagensveld, 2023). Reducing carbon emissions not only covers the scope of the definition of sustainable finance, but how to increase investment to deal with climate change not only for large capital market-funded companies & bank-funded MSMEs (Greitens, 2023).

Sustainable finance is vital for MSMEs and overall economic growth, acting as a fundamental mechanism to assist MSMEs while simultaneously tackling environmental and social issues. It channels capital to MSMEs in an eco-friendly manner, promoting their growth and addressing social dimensions. This approach enables MSMEs to invest in human capital, create job opportunities, and stimulate inclusive growth, thus directly contributing to overall economic advancement (Alsameer & Begum, 2023).

Given the formidable challenges confronting MSMEs, urgent government intervention in the form of subsidies and regulations is imperative (de Carvalho et al., 2021). To ensure targeted assistance, a thorough assessment of the MSMEs' conditions is essential, emphasizing the need for a comprehensive and structured mapping. The Maturity Model, a validated organizational assessment tool (Becker et al., 2009), serves as a means to compare the current state with the desired level (Schumacher et al., 2016). Employed consistently for comparison and ongoing improvement (Marx et al., 2012), The concept of maturity demonstrates versatility in its application, serving descriptive, prescriptive, and/or comparative purposes (Asdecker & Felch, 2018; Röglinger et al., 2012).

The Maturity Model, described as a "well-established means of identifying strengths and weaknesses within specific organizational domains" (Lahrmann & Marx, 2010), is utilized to pinpoint disparities between the desired and actual organizational design. This identification allows for targeted development activities to address the identified gaps, signifying an evolutionary progression towards the desired state (Mettler, 2011). Another perspective suggests that the Maturity Model serves as a simplified representation of reality, aiding in evaluating the efficiency of business processes by categorizing different stages of business process "maturity" based on the employed model (Kluth et al., 2014). Conceptually, maturity models signify Stages of progressive quantitative or qualitative advancement capabilities in various elements, assessing their progress in defined focus areas (Kohlegger et al., 2009). Therefore, the maturity model serves as a crucial tool in strategic management, providing companies with parameters to evaluate the outcomes of their endeavors towards goal achievement (de Jesus & Lima, 2020). A fundamental principle underscores that if a phenomenon cannot be measured, it cannot be effectively managed (Modrák & Šoltysová, 2020).

The term "readiness" is relative and closely related to the term "maturity" (De Carolis et al., 2017). The main goal of the Maturity Model is to evaluate the maturity level of an individual or entity and facilitate their progression to a higher level through a structured, continuous improvement process (Mittal et al., 2018). A readiness assessment acts as an evaluation tool to analyze and ascertain the readiness level, attitudes, and resources across all levels of the system (Mittal et al., 2018), Furthermore, it helps clarify whether the organization is prepared to initiate the development process or not (Akdil et al., 2018).

The MSMEs The maturity model was initially introduced to evaluate the extent to which sustainability strategies and practices are implemented within this particular business category (Vásquez et al., 2021). Maturity models aid in pinpointing strengths and critical aspects in business processes, facilitating continuous improvement where needed. They analyze companies' progress in economic, social, and environmental activities across different sequential development stages (Lacerda & von Wangenheim, 2018). Continuous measurement has been linked to Key Performance Indicators (Odwazny et al., 2019).

The Maturity Model design process typically involves several steps, including: (i) Conducting a SLR to explore existing models, (ii) Prototyping the model and assessment instruments. (iii) Performing content analysis and expert interviews, (iv) Conducting pilot studies, (v) Refining the model based on practitioner feedback and emerging model trends (Monteiro et al., 2020; Sari et al., 2021; Wagire et al., 2021). Common properties of the Maturity Model include:(i) Maturity levels; (ii) Characteristics of each level; (iii) Overview of each level; (iv) Aspects; (v) Activities for each aspect; (vi) Explanation of each activity across all maturity levels (Caiado et al., 2021; De Carolis et al., 2017; Röglinger et al., 2012).

The necessity for a reliable maturity model in accounting and finance is evident. However, the existing gap becomes apparent when compared to maturity models in other domains like ICT. Most articles on MSME maturity models focus on digital aspects, especially in the information technology domain. Only a few addresses diverse areas such as production, management, marketing, governance, finance, and sustainability. Notably, the author discovered only one article on MSME maturity models in management accounting. An extensive study, analyzing over 50 related articles, led to the design of a new maturity model tailored for Industry 4.0 MSMEs (Wittine et al., 2021). The model, comprising 6 dimensions and 26 indicators with 5 levels (0–4) for each, lacks coverage in accounting, finance, and sustainability. To address this, a new maturity model will be designed specifically for assessing MSMEs' readiness in accounting and finance sustainability. This initiative stems from insights gained through a Systematic Literature Review (SLR), identifying key dimensions, aspects, and levels essential for constructing the model.

METHODS

The chosen method is the SLR, conducted in accordance with the PRISMA guidelines (Moher et al., 2009), involving four stages: (i) Identification, (ii) Screening, (iii) Eligibility, and (iv) Interpretation.

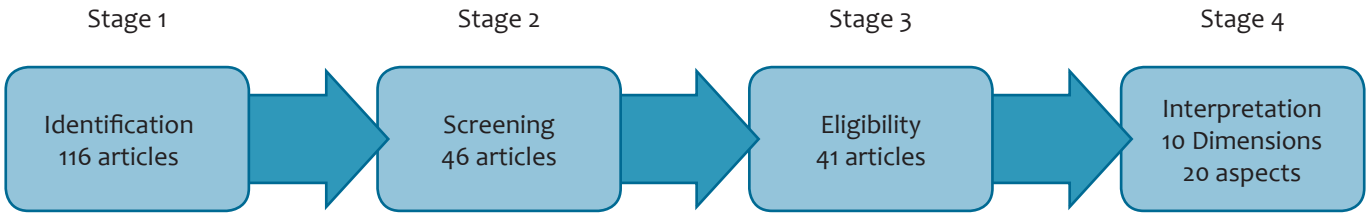


Figure 1 Systematic Literature Review Stages

The initial stage in the SLR entails collecting journal articles using predefined keywords. The search, conducted on Scopus and Google Scholar databases with the keywords "maturity" AND "model" AND ("sme" OR "msme" OR "financial" OR "finance" OR "accounting" OR "sustainable" OR "sustainability"), was limited to the "Title" field and within the years 2000-2021. Scopus yielded 57 matching articles, while Google Scholar found 59, totaling 116 articles in the search results, as shown in Tabel 1.

Table 1 List of 116 articles

	Authors	Year	Country
1	J. Vásquez	2021	United Kingdom
2	N. Wittine et al.	2021	Germany
3	S. R. B. Rahamaddulla	2021	Switzerland
4	A. Nasertorabi et al.	2021	United States
5	I. Akomea-Frimpong	2021	United Kingdom
6	A. Yezhebay	2021	Kazakhstan
7	P. Chaopaisarn	2021	Thailand
8	M. C. Machado	2021	Switzerland
9	H. Zentner	2021	United States
10	T. Voswinckel	2021	Germany
11	A. Fekadu	2021	United Kingdom
12	H. Prasetyo & E. Antoni	2020	United Kingdom
13	Y. Sari	2020	United Kingdom
14	J. M. González-Varona	2020	Spain
15	H. Yazdi et al.	2020	United Kingdom
16	D. de Almeida Santos	2020	Switzerland
17	V. F. Jorge	2020	United States

	Authors	Year	Country
18	J. Perales-Manrique et al.	2019	United States
19	R. S. Sharma et al.	2019	Netherlands
20	X. Shi	2019	United States
21	X. Parra	2019	Spain
22	S. Yahiaoui	2019	Austria
23	F. Ghashghaei & S. Mashayekh	2019	Iran
24	P. Lebedev	2019	United Kingdom
25	B. Elwardi et al.	2019	United States
26	K. Krowas	2019	United States
27	H. Kreiner et al.	2019	United States
28	N. Chonsawat	2019	United States
29	S. Mittal	2018	Netherlands
30	G. M. J. Barra	2018	Brazil
31	P. R. Joshi	2018	Switzerland
32	M. H. Irwan Hamzah	2018	Malaysia
33	J. I. Igartua-Lopez	2018	Spain
34	F. Blatz	2018	United States
35	S. Wiesner	2018	United States
36	W. Liu	2018	United States
37	D. Warnecke	2018	Germany
38	H. Reefke	2018	Netherlands
39	M. Will	2017	Netherlands
40	K. Lawani et al.	2017	Bahrain
41	M. Arese	2017	Venezuela
42	I. Marcovecchio	2017	China
43	S. Rivera	2017	Portugal
44	D. W. Parker et al.	2017	United Kingdom
45	J. Dangmei	2017	India
46	I. Barletta	2017	USA
47	A. Rudnicka	2017	Poland
48	T. Norton et al.	2017	USA
49	E. M. F. Correia et al.	2016	France
50	S. Bochert et al.	2016	United Kingdom
51	J. Ganzarain	2016	Spain
52	G. Silvius & R. Schipper	2015	Canada
53	A. R. Mertilos	2015	Belgia
54	M. Mizla & N. Jergová	2015	Poland

	Authors	Year	Country
55	D. Specht	2015	Germany
56	D. Pigosso	2015	Netherlands
57	C. Niemöller	2015	Germany
58	T. O'Kane	2015	United Kingdom
59	E. J. Hynds	2014	United Kingdom
60	L. M. Al-Taweel	2014	India
61	L. Piermattei et al.	2014	Spain
62	H. Zhang	2014	United Kingdom
63	S. Aghadavood	2014	United Kingdom
64	P. Yongjian & W. Yamin	2013	United Kingdom
65	C. G. Machado et al.	2013	Brazil
66	E. Ngai	2013	Netherlands
67	M. H. Chuah & K. L. Wong	2013	United Kingdom
68	J. Srai	2013	United Kingdom
69	Y. K. Gibb & S. Blili	2012	Singapore
70	A. Oliveira	2012	United Kingdom
71	U. Cebeci	2012	Singapore
72	T. Campbell	2012	United States
73	Z. Xiao-ping	2012	China
74	A. Cleven et al.	2012	Switzerland
75	S. J. Deodhar	2011	India
76	M. Mani et al.	2010	United States
77	COIN Consortium	2010	N/A
78	C. Paunescu	2009	Austria
79	E. Savioja & R. Nevalainen	2009	United States
80	L. M. Boone et al.	2009	United States
81	D. A. Kirkwood et al.	2011	United States
82	D. A. Doss et al.	2008	United States
83	CSR Quest	2007	N/A
84	C. H. Cagnin et al.	2005	United Kingdom
85	W. Van Grembergen & R. Saull	2001	United States
86	J. Vásquez et al.	2021	United Kingdom
87	S. R. B. Rahamaddulla et al.	2021	Switzerland
88	B. Elwardi	2021	Germany
89	D. de Almeida Santos et al.	2020	Switzerland
90	X. Shi et al.	2019	United States
91	X. Parra et al.	2019	Spain

	Authors	Year	Country
92	K. Krowas & R. Riedel	2019	Germany
93	F. Ghashgayee & S. Mashayekh	2018	Iran
94	M. H. I. Hamzah et al.	2018	Malysia
95	B. Elwardi et al.	2018	United States
96	S. Rivera et al.	2017	Singapore
97	E. Correia	2017	Switzerland
98	D. W. Parker	2017	United Kingdom
99	J. Ganzarain & N. Errasti	2016	Spain
100	A. Silvius	2015	Canada
101	T. O'Kane et al.	2015	United Kingdom
102	E. J. Hynds et al.	2014	United Kingdom
103	C. H. Cagnin et al.	2014	Austria
104	D. Pigosso	2014	United States
105	L. Piermattei	2014	Italy
106	H. Reefke et al.	2014	India
107	H. Reefke	2014	India
108	C. G. Machado	2013	Brazil
109	J. S. Srai et al.	2013	United Kingdom
110	T. Campbell et al.	2012	United States
111	A. Cleven	2012	Germany
112	D. C. A. Pigosso	2011	United States
113	D. C. A. Pigosso & H. Rozenfeld	2011	United States
114	H. Reefke et al.	2010	Germany
115	H. Reefke	2010	Germany
116	C. Paunescu	2009	Austria

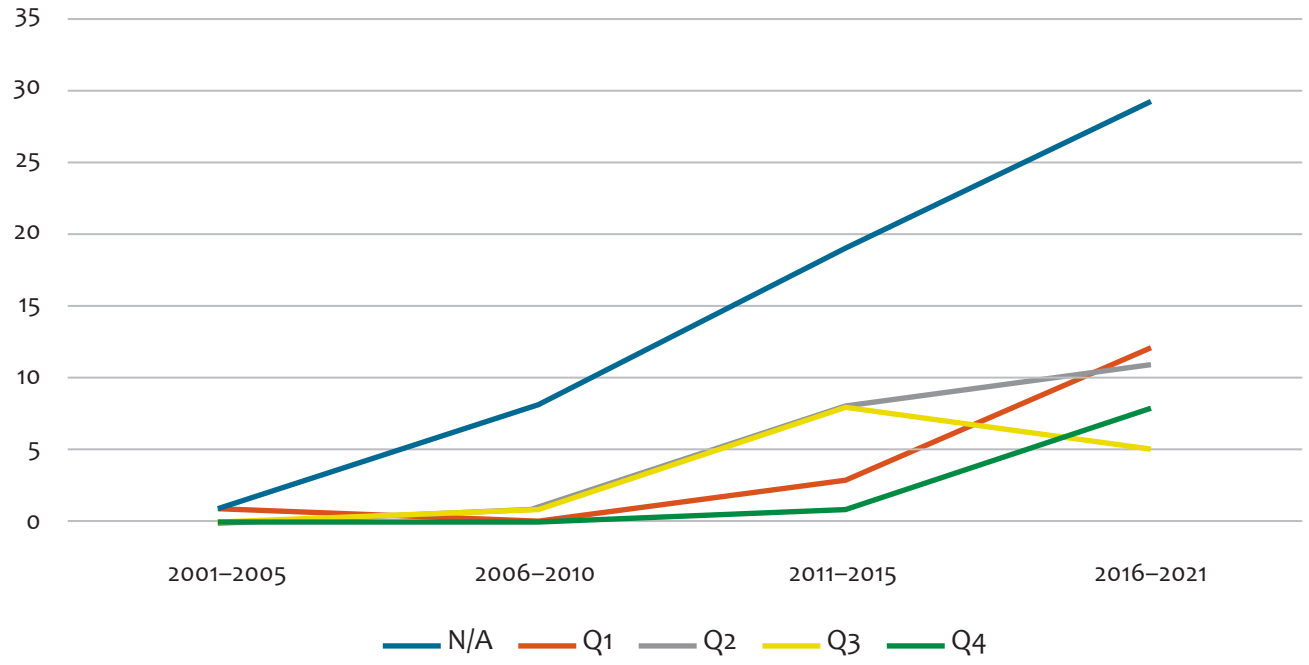
Source: Data processed by author

Based on the Table 1, each article is classified into categories of international journals indexed in Scopus, ranging from quartile Q1 to Q4. Consequently, the summarized data is obtained and presented in Table 2.

Table 2 Collection of Required Information

Year	N/A	Q1	Q2	Q3	Q4
2001–2005	1	1	0	0	0
2006–2010	8	0	1	1	0
2011–2015	19	3	8	8	1
2016–2021	29	12	11	5	8

Source: Data processed by author



Source: Data processed by author

Figure 2 Article categories are based on the level of international journals indexed by Scopus

Figure 2 also indicates an increasing trend in research publications concerning maturity models from 2000 to 2021 in journals of the highest quality, classified in quartile Q1.

Out of the initial 116 articles in the first stage, a refinement process using several criteria was employed in the second stage to ensure relevance to the research objectives. Six criteria were applied: (1) Elimination of duplicates; (2) Inclusion of journals, proceedings, and book chapters; (3) Relevance to the development of maturity models; (4) Exclusion of models unrelated to business, such as IT, Health, Civil Engineering, and Project Management; (5) Articles in English or Indonesian; (6) Accessibility for download. The outcome of this stage resulted in a reduction from 116 articles to 46 articles.

In the third stage, the author thoroughly reads the articles and records essential information aligned with the research objectives. The recorded information includes Dimensions – The facets/aspects of the maturity model measurement; Aspect – the factors or aspects for every aspect/facet in maturity measurement; Maturity Level – the maturity measurement level of the model. During this information collection process, it was identified that five articles did not meet the criteria as they lacked the inclusion of a maturity model. Consequently, these five articles were excluded, reducing the list from 46 to 41 articles. The comprehensive list of articles and gathered information is available in Table 3.

Table 3 Collection of Required Information

	Articles	Dimension	Aspects	Maturity Levels
1	(Vásquez et al., 2021)	Factor 1: Management of Environmental Knowledge Factor 2: Systems for environmental management	- Expertise, adequate resources, eco-training, innovation channels for process enhancement, documentation, and sustainability in corporate strategy. - Eco-efficiency, cleaner production, and circular economy initiatives; environmental management plan; reporting emissions; implementing green practices; water conservation efforts; waste sorting and recycling; hazardous waste disposal; reusing office supplies; maximizing industrial resource lifespan; product recovery; after-sales repair; noise and water consumption monitoring; adopting green procurement standards; environmental regulations compliance.	Level 1. Companies lack maturity in sustainability Level 2. Companies at an elementary level of sustainability maturity Level 3. Companies that are progressing in their sustainability maturity Level 4. Companies with established sustainability maturity
		Factor 3: Practices and strategies for environmental management	Operational environmental management systems; certifications and policies; government regulations; key environmental performance indicators; decision support for green practices; integration of HSEQ modul ERP system.	
2	(Wittine et al., 2021)	Output	- ICT infrastructure in production, Digital Public tools and methods	5 Level: 0-1-2-3-4
		Informations technologies & Database	- Systems, networks, Data management, IT & data security	
		Procedure/company	- Procurement, Processing	
		Leadership skills, performance, practise	- Industry Vision 4.0, Leadership style, Management skills, Internal communication, Company culture.	
		Worker	- collaboration, Willingness to change, Competence building	
		Enterprises design & networking event	- New business models, Collaboration in the value network	
3	(Rahamaddulla et al., 2021)	Man Machine Method Management	3D printing, Virtual Reality, Cybersecurity, Collaborative Robot, Big data analytics, Internet of Things, Cloud Computing, System Integration, Simulation	1 - Technology beginner 2 - Technology newcomer 3 - Technology learner 4 - Technology expert 5 - Technology leader
4	(Akomea-Frimpong et al., 2021)	Scheme and recognize monetary chance	- Review reports from the World Bank, IMF and audit firms, Prioritize financial risk management.	Strategic Management (naive) Stakeholder and personal knowledge (novice) Organizational culture (normalized) Policy and strategy
		Analysis and allocation of financial risks	- Uncover the causes of project-related financial risks based on expert judgment and sound financial techniques.	
		Controlled measures on financial risks	- Minimum Income Guarantee (MRG), real options, Setting fixed loan interest rates. Renegotiation of financial agreements, Participatory budgeting, Extend the concession period to cover the investment	

	Articles	Dimension	Aspects	Maturity Levels
5	(Yezhebay et al., 2021)	People	- Skill acquisitions, Skill set, Cross collaboration	Outsider Starter Intermediate Experienced Specialist Top performer
		Leadership	- Innovation management, Personal integrity	
		Strategy	- Investments, Strategy	
		Technology	- Machine-to-machine communication - ICT implementation	
		Operations	- Automation, Information sharing, Supply chain management	
		Product	- Analytics for use, Individualization, Functionalities based on ICT	
6	(Chaopaisarn & Woschank, 2021)	- Strategy - Customer - Product - Operation - People - Technology	Data Sourcing and Collection, IoT Structure, Iot Redesign and Replacement.	Initial Repeatable Defined Managed Optimizing
7	(Machado & de Brito Carvalho, 2021)	Environmental	utilization of water, energy, materials, products, services; CO_2 emissions	
		Economic	Operational effectiveness, Secondary effects, Procurement policies, Goods	
		Social	employment practices, education, society	
		Governance	Strategy, ethics, risk analysis	
8	(Fekadu et al., 2021)	Aligned values	Compassion, generosity, stewardship, equity, innovation	Uninitiated Exploring Engaged Committed Mature
		Freedom	Choice, agency, autonomy	
		Empowerment	Increase capability, Self-reliance, Interdependence	
		Trust	Safety, Openness Respect	
		Strategic investment	Infrastructure, Human capacity, Joint events	
9	(Sari et al., 2021)	Corporate sustainability driver (external & internal)	National policies, Legal compliance, Sustainability initiatives, Awareness among managers & Return on investment	The initial stage The managed stage The optimized stage
		Corporate sustainability action	Funds donated to the community, Energy productivity, Free hazardous materials, Renewable energy usage policy.	
		Corporate sustainability performance	Operating or net profit, Release of hazardous compounds into the atmosphere, water bodies, and land, Increase employment opportunities.	
10	(de Almeida Santos et al., 2020)	environmental	Environmental hazard, Range of products, Instruments	1: nonexistent 2: conscious 3: intermediate 4: advanced 5: sustainable
		social	Internal and external social risks	
		economic	ROI (Return on Investment) and reprocessing, Examination of outcomes	
		transversal	Advancements in technology and innovation, Distribution, Strategic partners, Knowledge and efficiency	

	Articles	Dimension	Aspects	Maturity Levels
11	(Ruiz-Cantisani et al., 2020)	Preparation	Recognize the disturbance, Assess & Supervise the disturbance, identify early warnings, Develop strategies	Ad Hoc Defined Linked Integrated Extended
		Response	Execute strategies, Manage the situation, ensure safety and preserve lives, Shutdown impacted systems	
		Recovery	Recovery time employed	
		Evolution	Spot potential benefits, Adapt and grow	
12	(Shi et al., 2019)	Management level	1: Placement or laborer, 2: Workstation, 3: Factory, 4: Supply chain	Matrix: Management / Maturity Level
		Maturity level	a: Collecting, b: Visualizing, c: Analyzing d: Optimizing	
13	(Parra et al., 2019)	Data Accessibility	- Infrastructure, Governance, Properties,	1: Uninitiated 2: Aware 3: Proactive Adoption 4: Integrated Embracement 5: Fully Embedded
		Data Integrity	- Quality & standard, Technology & methods, Skills & expertise.	
		Data Interpretation & Understanding	- Applications & tools, Techniques & analysis, Skills & expertise.	
		Information Utilization	- Requirements & use, Knowledge management, governance.	
		Decision-Making	- Goals & outcomes, DMP, Leadership & empowerment.	
14	(Sanae et al., 2019)	Purchase & Supply	- IT Implementation, implement a strategy for selecting suppliers, Free Flow data.	1: Effective SC 2: Efficiency SC 3: Excellence SC
		Production	- SCM planning, SCM Vision, Top management commitment, SC measurement.	
		Storage & distribution	- Quality of Human Resources, Dependability of the supply. - Government-supported acquisition systems for warehouses, Integrated.	
		Sales	- Collaborative supply chain planning for businesses, Market competition Study, Adoption of technological advancements.	
15	(Lebedev, 2019)	1. Cost optimization and administration, 2. External financial reporting, 3. Financial planning, Internal governance, 5. Investment evaluation, 6. Administrative and fiscal oversight, Pricing strategies, discounts, and product determinations, 8. Project oversight, Regulatory conformity and adherence, 10. Resource allocation, 11. Hazard mitigation, Strategic tax planning, 13. Treasury and liquidity management, 14. Internal auditing		0: Nonexistent, 1:Bean-counter, 2:Historian, 3:Reporter, 4:Expert, 5:Consultant, 6:Advisor, 7:Trusted advisor, 8:Financial leader, 9:Strategic / Transformational leader
16	(Elwardi et al., 2021)	Leadership	Stakeholders, Risk management, opportunities, Management commitment, Responsibility and authority.	5 level
		Support	Technical, Human resources, Training and competence, Motivation.	
		Realization	Activity plan, Input/Output, Target, Benchmark, Evaluation, Risk analysis, JIT, FIFO, Kanban, Preventive, Problem solving, Poka Yoke, Kanban, 5S	
		Outcome	KPIs, Management review, Kaizen Standardization	

	Articles	Dimension	Aspects	Maturity Levels
17	(Krowas & Riedel, 2019)	Data	Incorporation of sensors, Smart transport devices, Data interchange	1 (outsider) 2 (beginner) 3 (advanced) 4 (experienced) 5 (expert)
		Communication	Inter-machine communication, Interface between humans and machines, ICT (Information and Communication Technology)	
		Processes	Logistics network, Implementation of storage systems	
		Intellectual capital	Employee skills (human capital), Organizational structure (structural capital), Culture of innovation (relational capital)	
18	(Chonsawat & Sopadang, 2019)	Business and Organizational Strategy	Business model classification, corporate culture and profile, Collaborations, Environmental impact, Financing and investment strategies, and more.	0-4
		Mass Production & Processing	Automation, Machine-to-Machine (M2M) interactions, Agile manufacturing, Systems flexibility, Integration of human-machine operations, Production lead time, Customization of products, Risk management.	
		Technology-Driven Processes	Cloud computing systems, Cyber-Physical Systems (CPS), Interconnected data networks, Integration of product and process systems, Real-time data analysis and management.	
		Digital Assistance	Utilization of Big Data analytics, Service provision based on data insights, Decision-making driven by data, Digital products, Digital modeling techniques, Additional functionalities through ICT, Cybersecurity measures, Integration of marketing channels.	
		People capability	Employee competencies, Leadership development, and Skill enhancement initiatives.	
19	(Mittal et al., 2018)	Leadership	Command & Strategics	
		Process	Output Development, Production Designing, Process Supervise, Quality assurance, Take Control, Simplicity Management, Logistics Supervision	
		Systems & Automation	Information System, Facility Automation	
		Performance	Performance Assessment	
20	(Igartua-Lopez et al., 2018)	Strategic planning, Competitive edge, Operational proficiency, Creativity and invention, Unique offerings and business framework Global expansion, High-level management practices, Integration of digital technologies, Environmental responsibility, Human resources, Geographic location		
21	(Blatz et al., 2018)	Leadership and Strategy Organizational Culture and Structure Information technology infrastructure Maturitas data Processes and Operations Product (Use-Phase)	Usage of data, Data protection policies, Data audit procedures	1-3

	Articles	Dimension	Aspects	Maturity Levels
22	(Dombrowski & Ritcher, 2018)	1. strategy and organizational structure, 2. leadership and culture, 3. Customer, 4. technological		
23	(Reefke & Sundaram, 2018)	Enablers	Management support, collaboration, sustainability awareness, unified vision, performance metrics, consumer education, recognizing benefits, adequate funding, acceptance of investments, strategic models and roadmaps, efficient technology, ongoing training, documentation, diverse sourcing and sales strategies, behavior-focused design, gradual improvements, sustainable materials, government support, cost-effective solutions, carbon reduction initiatives, external expertise, partnerships, green operations incentives	1.Uninformed & non-adherent 2. Sporadic & Fundamental Adherence 3. Established & Compliant 4. Interconnected & Surpassing Compliance 5. Coordinated & Forward-thinking 6. Expanded & Leading in Sustainability
		Disablers	Short-term finances, Lack of collaboration, Sustainability costs, Misplaced priorities, Reliance on fossil fuels, High import/export distances, Price competition, losing business to cheaper zones, Lack of research, Cost pressures from competition, Long-term sustainability impacts, Hidden costs, Unsubstantiated claims, Inefficient resource use, Uncertainty in supply chains, Low-value products/services.	
		Activities Characteristics	Key performance indicators (KPIs), Performance measurement, Energy/material efficiency, Pollution reduction, eliminating non-value adding activities, Waste reduction, Demand forecasting, Impact assessment, Continuous improvement, Risk management, Integration, Reverse logistics, Sustainable transportation feasibility, Carbon foot printing, Reporting.	
24	(Parker et al., 2017)	Corporate sustainability comprises diverse forms of capital, including Economic Capital, Societal Capital, Human Capital, and Natural Capital.		Open to change Desire to modification Prepared for replace Methodical transformation Ingrained in culture
25	(Rudnicka, 2017)	Understanding, Influence, Societal vulnerability, Environmental vulnerability, Collaboration Information exchange		Inadequate, Adequate Competent, Outstanding Exceptional
26	(Bochert et al., 2016)	People	Awareness and barriers (employees & management)	
		Process	Roles, Tasks, Methodology, Networking,	
		Relations	Network affinity, Research affinity,	
		Technology	Process coverage, Integration	
27	(Ganzarain & Errasti, 2016)	Envision	Industry 4.0 vision and comprehension	Initial, Controlled, Established, Transformative
		Enable	Customer segments and expectations	
		Enact	-Actual & future project portfolio	

	Articles	Dimension	Aspects	Maturity Levels
28	(Mizla & Jergová, 2015)	People	Education, Knowledge, Behavior	0-3
		Environment	Business climate, Interpersonal relationships, People's delegation.	
		Processes	The acquisition of knowledge, Knowledge sharing & using.	
		Leadership	Supporting knowledge processes, Objectives of knowledge management & loss mitigation.	
		Technology	Technological base, Using of the IT, Interest in IT.	
		Continuous Improvement	Knowledge Analysis and monitoring, People vigor, Elimination of the identified shortcomings	
29	(Pigosso & McAloone, 2015)	Strategic planning for products	Establish business strategy; analyze market and tech data; assess product portfolio	1-5
		Information design	Revise product scope; detail lifecycle; define main customers	
		Conceptual design	Model product function; develop solution principles; define architecture	
		Detailed planning	Design systems; make procurement decisions; develop suppliers	
		Production readiness	Secure manufacturing resources; plan pilot production; certify product	
		Product introduction	Develop sales, distribution, customer support processes	
		Product surveillance	Evaluate customer satisfaction; monitor product performance	
30	(O'Kane et al., 2015)	governance	Definition of AML architecture, • Establishment of AML strategy	CL0 - CL4
		risk and assessment	• Formulation of AML policy, Quality assurance for AML	
		Diligent action	• Identification of AML risks, Mitigation of AML risks	
		Examination and reporting	• Customer onboarding processes, • Transaction monitoring and other surveillance measures, • Handling AML alerts	
		Organizational support	• Maintenance of records, • Management of human resources for AML, • AML training programs, • Data measurement, analytics, and other analysis techniques	
31	(Hynds et al., 2014)	Strategy Dimension	Corporate Sustainability Wisdom, Global Sustainability Strategy, Government Policy & Regulation and other.	- Beginning (0–10) - Improving (11–20) - Succeeding (21–30) - Leading (31–40)
		Design Tools Dimension	Specifications and Customer Insights Life Cycle Assessment (LCA) Procedure, and more.	

	Articles	Dimension	Aspects	Maturity Levels
32	(Poli et al., 2014)	Environment	Climate Change Vulnerability, Environmental Incidents and Cleanup, Water Resource Utilization and Governance.	1: Aware, 2: Managed, 3: Standardized, 4: Measured 5: Optimized
		Social capital	Relationship and contract, Society Growth, Impact of facilities, Customer satisfaction	
		Human capital	Variety and common chance, Practice & Expansion, Mobilization & Warehousing, compensation & benefits	
		Business model & innovation	Sustained endurance of core operations, Integration of external influences in financial disclosures, Research, Development, and Innovation, Societal value of products, Environmental footprint across product lifecycles, Adherence to regulations and legal challenges, Enactment of policies, standards, and ethical guidelines, Ethical business practices and competitive behavior.	
33	(Zhang et al., 2014)	TechnoWare	Collaboration and System Tools, Innovative Ideas and works, Enterprise application, machinery & other	
		InforWare	Document Handling and Data Compilation, Workflow Oversight, Information Provision, and more.	
		FunctionWare	PDM/PLM software and hardware, Visualization management, Bill of material management and other.	
		OrgaWare	Employees management, CSR, Training management Regulatory compliance & other.	
		SustainWare	Emission reduction efforts, Low energy usage, Life cycle assessment & other.	
34	(Machado et al., 2013)	1. Content, 2. Context, 3. Process, 4. Generic goal, 5. Specific goal, 6. Generic Practice 7. Specific Practice, 8. Sub practice		1. Compliance, 2. Internal Neutrality, 3. Process Oversight Operational Network Management Strategic Alignment
35	(Ngai et al., 2013)	1. Oversight of Energy and Utility Resource Utilization, 2. Project Scheduling, 3. Project Supervision and Oversight, 4. Evaluation and Data Analysis, 5. Technical solutions to problems, 6. Organizational process improvement, 7. Organizational training, 8. Organizational innovation.		1. Initial, 2. Managed 3. Defined, 4. Quantitatively managed, 5. Optimized

	Articles	Dimension	Aspects	Maturity Levels
36	(Chuah & Wong, 2013)	Strategic Management	Strategic thinking and planning, Visions Goals	1: Initial 2: Controlled 3: Established 4: Quantitatively Monitored 5: Optimized
		Change Management	Adaptability	
		Organization Culture	Reward &Attitude	
		People	Leadership, Skills, Training, Dynamic	
		Information Quality	Accuracy, Completeness, Consistency Timeliness	
		Balanced Scorecard	Financial Performance, Customer Satisfaction, Internal Operations Efficiency, Learning and Development	
		Performance measurement	Measurement Scope, Data Gathering, Data Storage, Performance Result Communication, Utilization of Metrics	
		Analytical	OLAP	
		Infrastructure	Networking	
		Knowledge management	Knowledge creation, Capturing, Refining, Storing	
		Metadata management	Business Metadata, Technical Metadata, Operational Metadata	
		Master Data Management (MDM)	Data Integration and Synchronization, Data Profiling, Data Migration, Data Consolidation, Segmentation	
		Data Warehouse	ETL, Data Mart	
37	(Srai et al., 2013)	Network integration & connectivity	Network coordination, Product service, business tools, improvement processes, performance measurement	1: Accidental/initial 2: Reproducible 3: Specified 4: Supervised 5: Mastered
		Network efficiency	Energy Efficiency and Effectiveness, Resource Allocation and Management, Minimization of Waste Generation, Carbon Emissions Reduction, Development of New Sustainable Products or Services, Human Skills and Capacities, Establishment of Sustainable Organizational Frameworks	
		Network process development and reporting	Network performance measurement Environmental, Societal, Economic Communication	
		Network product and service enhancement	Science and technology, Innovations in industrial processes (technology), Compliance with regulations and legislation	
		Strategic network design	Corporate vision and strategy, Segmentation of customers Values and objectives of leadership, Management of program and project portfolios, Strategy for integrating supply/partners, Positioning & marketing Strategic	

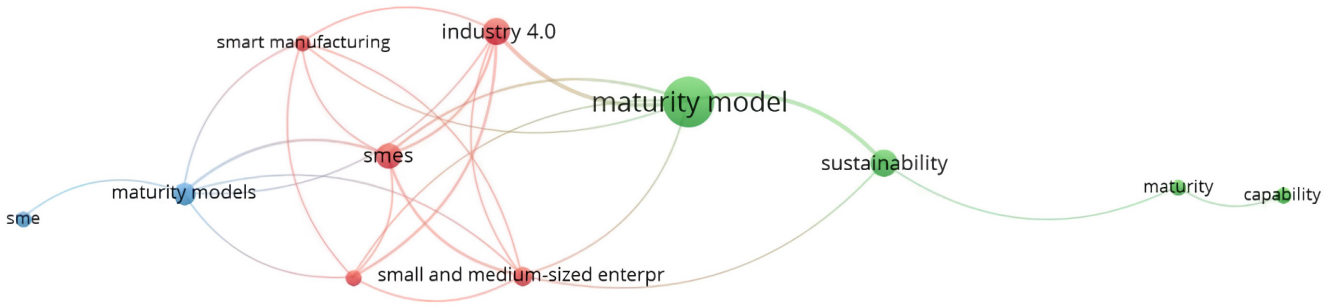
	Articles	Dimension	Aspects	Maturity Levels
38	(Campbell et al., 2012)	Align sustainability with corporate strategy; Integrate sustainability measurement and reporting; Link sustainability outcomes to long-term financial performance; Overseeing sustainability-related intangible assets; Enhancing Risk Management through sustainability endeavors.		Contrary Neutral Favorable Forward-thinking
39	(Cleven et al., 2012)	1. Socio, 2. Technical, 3. Use/Impact	Process Performance Management (PPM), Business Process Management (BPM), Business Intelligence (BI)	PPM Novice PPM Apprentice PPM Intermediate PPM Proficient PPM Expert
40	(Cagnin et al., 2005)	Strategic Planning, Collaborations, Incentives Skills, Information Sharing Technological Advancements, Processes and Activities		Ad Hoc Siloed Planning Managed without Integration Corporate-level Excellence High-Performance Sustainable Network
41	(Seidel-Sterzik et al, 2018)	Organizational Structure, Corporate Culture Resource Allocation, Life Cycle Management Strategy Knowledge Base, Market Demands Communication Channels		Backward, Impromptu Forward-thinking, Controlled Streamlined

Source: Data processed by author

In the final stage, all dimensions and aspects identified in the preceding stage underwent analysis, classification, and categorization. The final information gathered comprises 20 dimensions and 58 aspects. In this context, the term "dimension" signifies the primary category of measurement within the model, while "aspects" refer to sub-dimensions, representing more detailed categories of measures.

RESULTS AND DISCUSSION

Out of 41 articles published from 2000 to 2021 that have successfully completed all stages of the SLR, the relationship between keywords is depicted in Figure 3. Keywords related to the title "maturity model" in these articles account for 93%, or 38 articles out of the total. Keywords associated with the target of the maturity model, namely Small and Medium-sized Enterprises, constitute 40%, or 16 articles, out of the total article count. The remaining articles cover a variety of topics including Global Academic Partnership, smart manufacturing, financial industry, Public-Private Partnership (PPP) projects, IT companies, corporate (Indonesian), corporate, financial services, financial industry, and sector industry. Articles mentioning the target maturity, which pertains to the area of focus of the maturity model discussed in the article, amount to 13 articles. Keywords related to sustainability comprise 12%, or 12 articles. This underscores the interconnectedness of keywords between the title, maturity model topic, and target maturity model. Therefore, for future research, researchers can correlate MSME maturity models with other variables.



Source: Data processed by author

Figure 3 Keywords relationships from 41 journal articles

The culmination of the *SLR* involves a series of stages that can be segmented into various parts, namely:

1. Dimension Categorization

While various terms such as Dimension, Factor, Category, Perspective, and others are utilized across the reviewed articles, "Dimension" emerges as the most employed term, thus adopted consistently by the author.

Upon analyzing the 41 articles, a total of 219 dimensions were identified. Given the potential overlaps or synonymous use of certain terms, the dimensions underwent categorization. This categorization effort resulted in a reduction from 219 to 21 dimensions, namely: Business Model, Communication, Culture, Customer, Data & Information, Environment, Financial, Governance, Human Capital, Innovation, Knowledge Management, Management, Performance, Processes & Operations, Product & Production, Resources, Risk Management, Social, Strategy, Sustainability, and Technology.

2. Categorization Aspect

Aspects, defined as sub-dimensions representing more detailed measurement categories, are denoted by various terms in the models across the 41 analyzed articles, such as Indicator, Sub-dimensional, Attribute, Characteristic, among others. For consistency, this research adopts the term "Aspect". Each of the 21 dimensions that have been categorized yielded a collection of aspects, totaling 539 aspects. Through the final aspect categorization, the dimensions were reduced to 20, and the aspects were streamlined to 58. However, to align with the research aims and objectives, a further adaptation of these dimensions and aspects was deemed necessary. The question addressed was whether these dimensions and aspects are suitable for inclusion in the intended maturity model.

Consequently, the result of the SLR is distilled to 10 dimensions with 20 aspects, reflecting the refined adjustment of dimensions and aspects, as shown in Table 4.

Table 4. Dimensions and aspects of final SLR results

Dimension	Aspect
Sustainability	Awareness
	Innovation
	Policy
Environment	Environmental policy & management
Financial & Accounting	Financial Risk
	Financial & accounting strategy
	Financial & accounting compliance
Human capital	Behavior
	Labor
	Quality
Performance	Performance Measurement
Processes & Operations	Supply chain management
	Manufacturing
Resources	Natural resources
Culture	Culture
Social	Corporate Social Responsibility (CSR)
	Social risk
Technology	ICT implementation
	Big Data & Data Analytics
	Information Systems

Source: Data processed by author

The entirety of original dimensions and aspects derived from the 41 articles is visualized in the form of a word cloud, as depicted in Figures 4 and 5. The word cloud serves as a comparison to the categorization and analysis results provided by the authors as listed in Table 4.

Figure 4 Word cloud of dimensions within 41 journal articles

Figure 5 Word cloud of aspects in 41 journal articles

Based on the dimensional categorization, it can be seen in the word cloud that the words that frequently appear are sustainability, management, strategy, leadership, technology, environmental, product, data, process, capital, financial, network. Meanwhile, in Table 4, which is the outcome of the author's analysis, the categorization dimension is sustainability, environment, financial & accounting, human capital, performance, processes & operations, resources, culture, social, technology.

Based on the categorization of aspects, it can be seen in the word cloud that the words that often appear are management, environmental, data, sustainability, product, production, information, process, business, knowledge, integration, collaboration. Meanwhile, in table 4, which is the product of the author's analysis, the aspect categorization are awareness, innovation, policy, environmental policy & management, financial risk, financial & accounting strategy, financial & accounting compliance, behavior, labor, quality, performance measurement , supply chain management, manufacturing , natural resources, natural resources, culture , corporate social responsibility (CSR), social risk, ICT implementation, big data & data analytics, information systems.

The first dimension in constructing a maturity model for the accounting and financial sustainability of Indonesian MSMEs is the Sustainability Dimension. Within this dimension, three pivotal aspects are identified. The Awareness Aspect emphasizes the importance of employees' awareness of sustainability in the workplace, fostering The integration of sustainability principles and practices into their daily operations (Oriade et al., 2021). Under the Innovation Aspect, a positive correlation between economic sustainability and innovation is acknowledged. Innovation is recognized as a significant factor in the growth-environment nexus, contributing notably to environmental quality (Di Simone et al., 2022; Khan et al., 2022; Souto, 2022). The Policy Aspect highlights the impact of the popularity of corporate sustainability on policy and planning approaches. Corporate policies toward sustainability have gained a central position among decision-makers with a sustainability focus

(Ahmed et al., 2021). Furthermore, achieving sustainable competitive advantage is emphasized through the interconnected roles of innovation, learning, and an entrepreneurial mindset (Yahaya & Nadarajah, 2023). Notably, Innovation is recognized as a significant driver for the growth and prosperity of SMEs, contributing to heightened competitiveness, increased productivity, and enhanced customer satisfaction (Aveline, 2024).

The second dimension focuses on the Environmental Dimension, encompassing aspects related to environmental policy and management. This aspect is deemed comprehensive as it integrates various elements, including water, air, energy, sound, and waste, with a specific emphasis on eco-efficiency. Governments, institutions, and researchers stress the significance of adopting an efficient environmental management system as a means to achieve corporate sustainability (Barón Dorado et al., 2022; Heikkurinen et al., 2019). Environmental knowledge management, strategies, and best practices, coupled with the deployment of environmental management systems, play a pivotal role in shaping a sustainable maturity model for MSMEs. These elements support companies in their pursuit of environmental sustainability and improvements in production systems (Vásquez et al., 2021). Acquiring knowledge about environmental issues is imperative for MSMEs to implement and manage environmental and sustainability initiative effectively, necessitating Endorsement from top management, along with a shared vision, and the essential infrastructure (Johnson, 2017). Effective environmental strategies, supported by good practices, are crucial policies for mitigating negative impacts resulting from production efforts. Commitment from top management, stringent regulatory oversight, and public attention significantly influence the Improvement of environmental strategies for sustainable development (Čater et al., 2018). MSMEs recognize environmental attention as a sustainability strategy to help reduce negative impacts in order to enhance cost-effectiveness and competitiveness (Vásquez et al., 2019). Implementing an environmental management system in MSMEs serves as a formal and strategic approach, impacting both operational and environmental performance, thereby enhancing overall sustainability performance (Johnstone, 2020). The business climate indicators, internal interpersonal dynamics within the company, and perspectives from community stakeholders collectively shape the living environment, which in turn influences the development of a knowledge management maturity model in a competitive environment for Micro-enterprises (Mizla & Jergová, 2015).

Aligned with the "Sustainability Accounting Standards Board", a modern approach for evaluating a company's sustainability maturity centers on key environmental aspects such as risks related to climate change, incidents of environmental damage and remediation, as well as management of water and energy, fuel and transportation management, emissions and air pollution, waste, and biodiversity (Piermattei et al., 2014). Compliance with environmental regulations serves as a benchmark for corporate sustainability, mitigating negative risks (de Almeida Santos et al., 2020). The emerging trend of the Environmental, Social, and Governance approach, embraced by companies, places emphasis on environmental indicators not only for large corporations but also for micro and small businesses. This approach is a vital indicator in the pursuit of the 17 "Sustainable Development Goals", encompassing 11 indicators related to water consumption, CO_2 emissions, energy consumption, and material utilization and products (Machado & de Brito Carvalho, 2021).

The third dimension comprises the financial and accounting domain, encompassing aspects such as financial risk, financial and accounting strategy, and financial and accounting compliance. Notably, financial risk management is closely linked to sustainability (Ogutu et al., 2021), while the performance of financial strategies significantly impacts financial sustainability (Putra et al., 2021). Financial literacy refers to the knowledge and understanding of various financial concepts, such as budgeting, saving, investing, and managing debt, which enables individuals to make informed financial decisions, plays a vital role in efficient financial planning, thereby

enhancing the financial well-being of individuals and the wider community (Murhadi et al., 2023). Moreover, financial literacy influences the performance and sustainability of MSME businesses (Nurjannah et al., 2023).

Small and medium scale accounting practices play a significant role in the future & sustainability reporting for MSMEs, therefore technical expertise and resources are absolutely necessary for MSME players (Ortiz et al, 2023). Enhanced sustainable financial performance in MSMEs is attainable through improved financial performance, resulting in increased value addition, profitability, sales growth, and business capital adequacy (Indriastuti & Mutamimah, 2023). The sustainable financial strategy model for MSMEs aims to enhance access to low-interest loans without collateral, involving collaborative efforts among government, banks, and SMEs. Strategies include supplying loan funds to banks, utilizing SME data, and employing borrower credit risk scores to mitigate default risks and transaction costs, with or without government support (Alsameer & Begum, 2023).

Financial and accounting compliance refers to adhering to relevant financial accounting standards. For Indonesian MSMEs, SAK ETAP serve as guidelines for preparing financial reports, facilitating audits and obtaining audit opinions for funding purposes, crucial for the development of Indonesian MSMEs (DSAK IAI, 2020). Additionally, SAK EMKM offer a simpler alternative to SAK ETAP, allowing MSMEs to choose between the two standards to assess business continuity and future viability (DSAK IAI, 2018). Compliance with SAK EMKM in financial reporting is essential for MSMEs, underscoring the importance of financial accounting proficiency among MSMEs (Agustina et al., 2021).

The fourth dimension, human capital, encompasses aspects such as behavior, labor, human resource management, and quality of human resources. Behavior is reinforced by employees' psychological capital, fostering sustainability and sustainable development (Manuti & Giancaspro, 2019). Behavior is limited to willingness towards sustainability. Behavior is also caused by certain parts of the environment that are relevant to being able to adapt to continuous change and resilience is a positive force that benefits the organization as a whole (Luthans et al., 2021). The leader's exemplary behavior will be imitated by employees which will result in sustainable behavior in the work environment (Blok et al., 2015).

The labor aspect, depicted by the three-face model of labor, underscores its multifaceted role as providers, producers, and maintainers in sustainability (Greenwood, 2019). Human resource management, pivotal amid escalating competition, drives policy implementation success and sustainability performance, fostering innovation and eco-friendly environments (Mousa & Othman, 2020). Environmentally friendly human resource practices enhance triple bottom line performance and competitive edge (Zaid et al., 2018), with sustainability-focused strategies like green selection and performance assessments contributing positively to company sustainability (Yong et al., 2020). Quality of human resources plays a pivotal role in sustainability, underscoring its significance for organizational sustainability (Ha et al., 2020).

The performance dimension, comprising performance measurement, is pivotal as proper measurement can drive organizations towards sustainability goals (Mio et al., 2022). Sustainable performance measurement entails financial and non-financial assessment indicators, encompassing criteria for scope, data collection, storage, and communication of results (Chuah & Wong, 2013). Maintaining financial position and competitive advantage hinges on achieving good performance, with success measured by a combination of financial and non-financial metrics (Sudjatmoko et al., 2023; Yahaya & Nadarajah, 2023). Performance measurement can be Measured through the comparison of actual performance with planned performance (Utomo et al., 2023). Despite MSMEs predominantly measuring performance based on profits, other quantitative and qualitative factors must be considered (Surjan & Srivastava, 2019), as financial performance is integral to MSME sustainability

(Amoah et al., 2021; Readi & Sudarmiatin, 2023). Enhancing MSME performance amidst the 4.0 revolution necessitates improvement in non-financial performance, leveraging technology and support from IT-certified personnel (Kustiyahningsih et al., 2021). Furthermore, foreign ownership, export activities, business environment, and asset size positively impact MSME performance (Boubaker et al., 2023).

The processes & operations dimensions encompasses supply chain management (SCM) and manufacturing aspects. SCM plays a crucial role in sustainable community development (Dai et al., 2021; Fritz et al., 2021), while manufacturing significantly impacts environmental, social, and economic sustainability (Saxena et al., 2020). Sustainable SCM serves as a guiding framework To tackle environmental, social, and economic challenges for sustained long-term survival (Panigrahi et al., 2023), reducing production costs and environmental impact while enhancing decision-making effectiveness for economic growth (Nekmahmud et al., 2020; Qureshi, 2022). Supply chain management and manufacturing are focal points for Industry 5.0, aligning with sustainability goals without compromising profitability (Narkhede et al., 2023).

The seventh dimension pertains to resources, focusing on natural resources aspects. The correlation between natural resource abundance and environmental degradation holds significant environmental implications, with "Natural Resources Rent" amplifying the ecological footprint (Aljarallah, 2019). Resource efficiency presents economic opportunities for business entities like MSMEs, with attention to the benefits and limitations of resources being crucial, necessitating innovation in production and consumption practices for effective natural resource management (Monteiro et al., 2023). Financial and technological resources profoundly influence sustainable performance, driving competitive advantage and long-term SME performance for sustainable outcomes (Xin et al., 2023). Leveraging natural resources, including local potential and human resources, as a form of social capital, contributes to sustainable resource utilization (Agustina et al., 2023).

The eighth dimension, centered on culture, encompasses various cultural aspects. Corporate culture holds significance in sustainable development as it sheds light on internal factors like management commitment, human resources, and organizational behavior (Islam et al., 2019). A culture of risk management greatly contributes to MSME business performance (Baral et al., 2023). The function of information systems in attaining environmental and digital orientation of corporate culture is crucial (Isensee et al., 2020). Additionally, fostering an innovation culture is a strategy employed by MSMEs to expand their business and achieve sustainability by mitigating climate change emissions (Isensee et al., 2023).

The social dimension encompasses CSR and social risk aspects. CSR implementation extends beyond mere corporate responsibility; it must also consider its impact on the economy, environment, and society, thereby emphasizing sustainability (Ismail, 2021). Understanding social risks is imperative to ensuring that companies address social hazards as part of their commitment to sustainable development (Kemp et al., 2016). CSR serves as a strategic tool for business success, offering a competitive advantage to companies that adopt socially responsible policies aimed at delivering quality and sustainable products. These activities, beyond profit-centric goals, encompass environmental, economic, and social reporting (Šperková & Skýpalová, 2023).

The tenth dimension, focusing on Technology, comprises ICT implementation, big data & data analytics, and Information Systems aspects. ICT implementation has been instrumental in driving positive economic, social, and environmental changes (Vidmar et al., 2021). Big data and data analytics are closely intertwined, offering MSMEs various opportunities to gain insights into internal processes, client needs, partner dynamics, and overall business landscapes (Rizqi & Himawan, 2022). Government and academic sectors play pivotal roles, forming a pentahelix, in assisting MSMEs in leveraging big data and data analytics, with an increasing number of service providers catering to MSMEs. With the emergence of big data, companies utilize data analysis to

gauge sustainable indicators for informed decision-making (Lafuente-Lechuga et al., 2021). Sustainability will produce performance, with information involvement and data sharing (Kusmantini et al., 2021). Information systems play a crucial role in sustainability efforts, facilitating knowledge advancement and proactive measures across various sustainability tiers. They can stimulate action and help achieve environmental sustainability goals, thereby contributing to energy policymaking (Cao et al., 2021).

CONCLUSION

The readiness of MSMEs in accounting and financial sustainability can be effectively assessed using a maturity model. A Systematic Literature Review (SLR) was conducted to identify the critical dimensions and aspects required to measure maturity levels. The SLR results identified 10 dimensions and 20 aspects that serve as the foundation for developing the maturity model. For future research, it is essential to validate the proposed maturity model through expert evaluations to ensure its relevance and accuracy. Subsequently, verification through quantitative methods is necessary to strengthen the model's reliability. One recommended approach is Structural Equation Modeling (SEM) using Partial Least Squares (PLS), based on data collected from questionnaires distributed to Indonesian MSMEs. Despite its contributions, this study has certain limitations. The dimensions and aspects identified are derived solely from existing literature, which may not fully capture the dynamic and diverse nature of MSMEs across different regions and industries. Additionally, the proposed model has not yet undergone empirical validation or testing, potentially limiting its applicability in real-world contexts. The reliance on self-reported data through questionnaires may introduce response bias, affecting the accuracy of the results. To address these limitations, future studies should incorporate qualitative insights from MSME practitioners and policymakers, as well as triangulate findings with alternative data sources to enhance model robustness and applicability. This study lays the groundwork for assessing MSME readiness, contributing to improved accounting and financial sustainability practices. Further validation and refinement will enhance the model's practical relevance, offering valuable insights for both academic and industry.

ORCID

Yvonne Augustine https://orcid.org/0009-0007-4776-375X

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