

From marketing activity to market readiness: developing the market-facing capability readiness index for MSMEs

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Abstract

Digital marketing activity is visible, whereas the maturity of the routines supporting market-facing decisions requires a separate assessment. To address this diagnostic gap, this study develops and conducts an initial psychometric assessment of the Market-Facing Capability Readiness Index (MFCRI), an instrument assessing how customer insight, value proposition, channel management, and relationship practices evolve from ad-hoc experimentation to institutionalized, decision-oriented routines. Employing a cross-sectional scale development design alongside hierarchical Partial Least Squares Structural Equation Modeling (PLS-SEM), measurement quality and the robustness of a transparent aggregation rule are rigorously examined. The 406 respondent records support a common higher-order readiness factor and show that equal weighting closely matches a loading-based alternative for overall scores. However, substantial overlap among the proposed domains means that domain-level interpretation remains provisional and requires item refinement and independent validation. The MFCRI therefore contributes a capability-maturity approach that conceptually distinguishes activity presence from routine maturity and offers a prototype for further validation in mentoring and digital assessment settings; digital platform adoption was not independently measured.

Keywords:

capability maturity; diagnostic index; market-facing capability, MSMEs readiness; PLS-SEM.

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Introduction

Marketing capability and market readiness serve distinct yet interconnected functions in enabling micro, small, and medium-sized enterprises (MSMEs) to engage customers, develop value propositions, coordinate marketing channels, and sustain customer relationships. While marketing capability reflects recurring market-facing routines, readiness indicates the extent to which these routines are institutionalised, documented, evaluated, and incorporated into strategic decisions. Integrating these dimensions is essential for assessing organisational maturity and identifying development priorities rather than merely establishing the presence of marketing activities (Hoque et al., 2022; Cao & Weerawardena, 2023; Stremersch et al., 2025).

In emerging economies such as Indonesia, MSMEs contribute substantially to local employment but continue to encounter constraints in financing, managerial competencies, and legal formalisation (BPS-Statistics Indonesia, 2025). Bandung provides a relevant urban context, with 80,901 business identification numbers issued to micro and small enterprises in 2024, predominantly in food-product manufacturing (18,858 actors) and food service stalls (10,135 actors) (Bandung City Investment & One-Stop Integrated Services Office, 2025). Within this ecosystem, MSMEs engage customers through social media, WhatsApp, marketplaces, trade exhibitions, and diverse payment channels, although the presence of these activities does not necessarily indicate structured and repeatable marketing routines. Previous research similarly indicates that MSMEs may demonstrate digital marketing capabilities while retaining weaknesses in customer interaction, advertising effectiveness, and strategic formalisation (Franco-Angel & Urbano, 2022; Cuijten et al., 2024).

Prior studies have increasingly examined digital marketing competence, organisational capabilities, and their implications for enterprise development. Digital competence depends on behavioural and core competencies, suggesting that technological readiness alone does not necessarily establish the knowledge-management routines required for sustainable growth (Anik & Suciningtias, 2025; Buaprommee, 2025). Marketing capability literature further conceptualises market sensing, customer linking, value development, and channel coordination as interdependent components of organisational competitiveness (Hoque et al., 2022; Cao & Weerawardena, 2023). Customer information generates strategic value when enterprises translate market insights into concrete organisational decisions (Tseng, 2023). Indonesian studies likewise emphasise marketing and information technology capabilities as mechanisms connecting digital activities, market orientation, and enterprise performance (Haryanto & Sultoni, 2024; Hidayati et al., 2025).

Despite these advances, existing measurement approaches present four limitations: prioritising technology adoption or activity presence over organisational routine maturity; measuring market-facing capabilities as

fragmented dimensions; relying on agreement-based scales that may capture favourable attitudes rather than implemented practices; and insufficiently distinguishing psychometric evidence from normative index-design decisions, particularly concerning weighting and aggregation (Becker et al., 2017; Greco et al., 2019). Nevertheless, although recent research recognises integrated communication and digital entrepreneurial marketing as interconnected capabilities, assessing how these capabilities progress from occasional activities to institutionalised, evaluated, and decision-oriented routines remains a distinct measurement challenge (Butkouskaya et al., 2024; Chooset & Sukhabot, 2025).

Accordingly, this study aims to develop and conduct an initial psychometric evaluation of the Market-Facing Capability Readiness Index (MFCRI) to assess the reported maturity and institutionalisation of market-facing organisational routines among MSMEs.

Using cross-sectional data from 406 MSMEs in Bandung, Indonesia, selected through purposive sampling, this study develops 30-item instrument encompassing four domains: Customer Insight, Value Proposition, Channel Management, and Customer Relationship. Grounded in capability-maturity theory, the MFCRI applies behavioural maturity anchors representing progression from absence or experimentation to implementation, documentation, evaluation, and integration into organisational decision-making. The four domains are specified within a higher-order measurement framework, while a standardised operational index summarises self-reported routine maturity. The analysis evaluates measurement reliability and validity, examines the robustness of index aggregation through comparative sensitivity analysis, and assesses theoretical associations between readiness and established indicators of enterprise maturity. Digital adoption is not independently measured, and the cross-sectional design does not establish longitudinal progression across maturity stages.

This study makes three contributions. First, it advances marketing capability research by conceptualising market readiness as the institutionalisation of market-facing routines rather than merely the presence of marketing activities or technology adoption. Second, it contributes methodologically by integrating behavioural maturity anchors into a multidimensional diagnostic instrument while distinguishing psychometric evidence from the normative adoption of an equal-weight operational index. Third, it offers a preliminary diagnostic framework for mentoring and incubation programmes to assess MSME readiness and identify development priorities. Nevertheless, its application requires further evaluation given the limitations of self-reported cross-sectional data, purposive sampling, and restricted discriminant validity among the proposed domains.

Literature review

Table 1 compares MFCRI with existing measures of market orientation, marketing capabilities, and digital competence. Export market-orientation

measures use agreement-based constructs without behavioural maturity stages or readiness scores (Acikdilli et al., 2022). Higher-order dynamic marketing capability models explain interrelated dimensions but do not provide MSME readiness diagnostics (Hoque et al., 2022). Similarly, market-sensing and customer-linking studies examine social media use and performance rather than routine institutionalisation (Cao & Weerawardena, 2023).

Digital marketing assessments identify competence gaps without covering the proposed value, channel, relationship, and maturity routines (Cuijten et al., 2024). Studies of digital, behavioural, and core competencies likewise stop short of producing an integrated maturity-anchored score (Anik & Suciningtias, 2025). MFCRI addresses this diagnostic distinction through behavioural anchors and an overall index, while its overlapping domains remain provisional for separate diagnostic interpretation.

Conceptual foundation and distinctive positioning of MFCRI

MFCRI draws on market orientation, the Resource-Based View (RBV), dynamic capabilities, and capability-maturity logic. Market-orientation research explains the generation, dissemination, and use of intelligence, as operationalised by MARKOR (Kohli et al., 1993). Rather than replacing MARKOR, MFCRI assesses how observable customer-facing routines progress from experimentation to documentation, evaluation, and decision-making, producing a transparent readiness score. RBV locates competitive value in firm-specific knowledge, coordination, records, and learning, not in digital-tool ownership alone (Barney, 1991). MFCRI therefore assesses insight, value, channel, and relationship routines instead of platform counts or promotional expenditure.

Dynamic capability theory explains how firms sense customer changes, seize opportunities through value and channel decisions, and transform relationship and learning routines (Teece et al., 1997). Capability-maturity logic adds an ordered scale of repeatability, documentation, evaluation, and decision integration. Thus, MFCRI provides a maturity-focused diagnostic layer grounded in established theories rather than a new general theory of firm performance.

Market-facing capability as maturity construct

Market-facing capability converts market knowledge into repeatable value-creating actions, not merely digital-tool use. A social media account may lack targeting, a marketplace may lack channel evaluation, and customer data may remain unused. Accordingly, MFCRI emphasises practices and learning routines, consistent with evidence linking marketing capability to performance, exports, and SME growth (Acikdilli et al., 2022; Joensuu-Salo et al., 2023; Abrokwah-Larbi & Awuku-Larbi, 2024).

Table 1.

Comparison of selected MSME market-capability and readiness measures

Study	Measurement focus	Typical operationalization	Gap relative to MFCRI
Acikdilli et al., 2022	Export market orientation and marketing capabilities	Agreement-based latent constructs linked to export performance	Lacks operationalized maturity stages or an actionable readiness score
Hoque et al., 2022	Dynamic marketing capability	Higher-order capability represented by multiple dimensions	Supports structural hierarchy, yet lacks an MSME readiness diagnostic
Cao & Weerawardena, 2023	Market sensing and customer linking	Capabilities explaining social media use and SME performance	Emphasizes explanatory relationships rather than routine institutionalization
Cuijten et al., 2024	Digital marketing capability needs	Capability potential and training-needs assessment	Retains a narrow digital focus; omits value, channels, relationships, and maturity anchors
Anik & Suciningtias, 2025	SME performance in the digital era	Digital, behavioural, and core competencies	Keeps readiness antecedents separate from a transparent diagnostic index
MFCRI (present study)	Integrated market-facing capability readiness	Behaviourally anchored practices summarized by a general score and provisional content facets	Introduces routine-maturity anchors, explicit scoring, and sensitivity analysis, while acknowledging that domain separability requires further refinement

Note: The comparison is limited to studies discussed in this article. It contrasts explanatory capability measures with the maturity-anchored diagnostic purpose of MFCRI

Source: Author's work (2026)

A hierarchical structure is appropriate because dynamic marketing capability has been modelled through multiple lower-order dimensions (Hoque et al., 2022). Market sensing and customer linking also connect strategic social media use to SME performance (Cao & Weerawardena, 2023). MFCRI consequently organises four content domains around a common readiness factor, while related research examines entrepreneurial networking and marketing capability in orientation–performance relationships (Cruz Rincon et al., 2023; Gliga & Evers, 2023). Maturity progresses from absent or experimental practices, through informal implementation, to documented, evaluated, decision-oriented routines. This progression reflects increasing institutionalisation and organisational learning rather than simply more frequent activity.

Customer insight capability

Customer Insight Capability concerns identifying target segments, purchasing motivations, and changing needs, then applying that knowledge to decisions. It involves acquiring, interpreting, applying, and tracking customer information (Stremersch et al., 2025). Konsistent with research relating customer and competitor orientations to marketing performance (D'souza et al., 2022; Dahmire et al., 2024). Maturity progresses from observing frequent buyers and preferences to monitoring changes and comparing segments. Even simple records can support market sensing and response (Tseng, 2023). Market sensing has also been linked to SME marketing performance Cao & Weerawardena, (2023) while digital engagement can reinforce market orientation and strategic alignment (Goldman et al., 2021; Alhamami et al., 2024). MFCRI therefore measures systematic interpretation and use of customer knowledge rather than data volume or technological sophistication.

Value Proposition Capability

Value Proposition Capability translates customer insight into differentiated offerings whose value is implemented, not merely advertised (Payne et al., 2020). It connects competitive differentiation, competencies, and customer value creation (Rintamäki & Saarijärvi, 2021). MFCRI consequently assesses benefit articulation, customer fit, differentiation, and communication, consistent with research on SME positioning and value co-creation (Fluhrer & Brahm, 2023; Ghasempour Ganji & Kazemi, 2024).

Mature routines periodically adjust quality, packaging, service, pricing, and customer experience in response to feedback or external events (Leroi-Werelds et al., 2021). Indonesian MSME evidence also links value creation and CRM with strategic orientation and market performance (Hendrayati et al., 2025).

Unlike customer insight, which concerns acquiring and interpreting knowledge, value proposition concerns configuring and communicating offerings; their conceptual connection poses a discriminant-validity challenge. CRM may further strengthen relationships between value development and financial outcomes (Alhawamdeh et al., 2024).

Channel management capability

Channel Management Capability concerns how customers discover, contact, order from, pay, and receive service from a firm. Omnichannel decisions are shaped by digitalisation and emerging technologies Cai & Lo, (2020), while SME channel maturity requires suitable channels, coordinated communication, convenient transactions, and performance evaluation beyond mere presence (García Ortiz et al., 2021; Kim & Lim, 2022). Consistent and transparent touchpoints support engagement, experience, and (Gao & Huang, 2021; Quach et al., 2022). Customer journeys also require deliberate touchpoint design and monitoring

(Homburg & Tischer, 2023). MFCRI therefore regards a few well-managed channels as potentially more mature than numerous disconnected ones.

Customer relationship capability

Customer Relationship Capability concerns recording customer information, following up after transactions, learning from feedback, and sustaining relationships. Customer linking connects market knowledge and offerings with relationship outcomes Cao & Weerawardena, (2023) while coordinated touchpoints can support loyalty but increase managerial demands (Homburg & Tischer, 2023). MSME studies relate CRM, market orientation, and digital marketing capability to performance and innovation (Fahmi et al., 2025; Hazzam et al., 2025). MFCRI assesses transaction records, loyal segments, follow-up, tailored communication, and complaint handling. Although prior research considers technology-enabled CRM Chatterjee et al., (2021) and its implementation implications Rahman et al., (2023), this study evaluates the routine use of customer information, not the effects of particular CRM technologies.

Higher-order structure and operational index

Customer insight informs value propositions and channels, whose interactions generate relationship feedback and further insight. These mutually reinforcing routines motivate a higher-order readiness construct. Because discriminant validity is limited, domain scores can guide exploratory follow-up but cannot establish independently validated domain-specific deficiencies. Psychometric measurement and operational aggregation must also remain distinct: PLS-SEM assesses construct coherence, whereas statistical loadings do not determine managerial weights. Since correlations, variance, and compensability affect effective weighting, MFCRI compares a transparent equal-weight index with a loading-derived alternative, as illustrated in Figure 1.

Measurement propositions

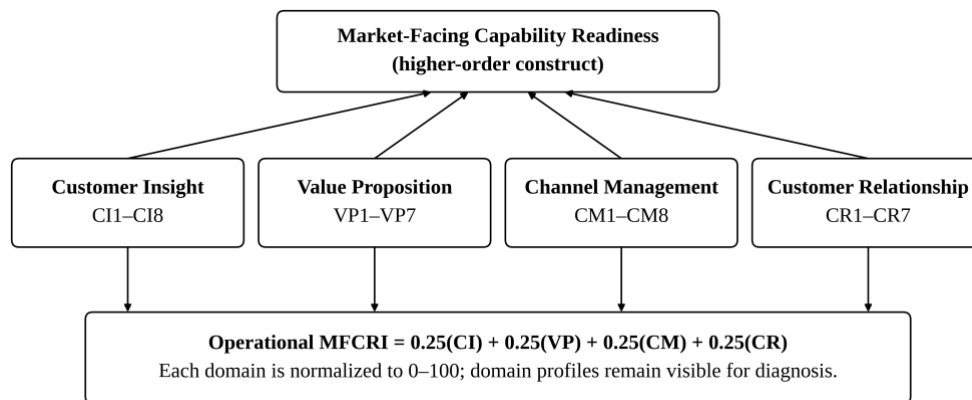
Figure 1 and Appendix 1 depict the higher-order readiness framework. Four propositions evaluate measurement quality, structural coherence, aggregation robustness, and associations with enterprise maturity:

- P1. The indicators within each MFCRI domain demonstrate robust indicator reliability, internal consistency, and convergent validity.
- P2. Customer Insight, Value Proposition, Channel Management, and Customer Relationship exhibit strong loadings on a higher-order Market-Facing Capability Readiness construct.
- P3. Given the theoretical complementarity of the domains and the expectation of a dominant general factor, loading-derived dimension coefficients yield comparable MSME readiness scores and classifications relative to an equal-weight operational rule.

- P4. MFCRI scores demonstrate positive associations with established indicators of enterprise maturity—specifically operating duration and employee count—while remaining conceptually distinct from the respondent's formal educational attainment.

Figure 1.

Hierarchical MFCRI measurement architecture and operational scoring layer



Note: The domain profiles shown in Figure 1 are provisional exploratory content profiles for follow-up assessment and should not be interpreted as independently validated domain-specific diagnoses
 Source: Authors' work (2026)

Research method

Research design and empirical context

This cross-sectional instrument-development study analysed 406 complete MSME questionnaire records, each representing a distinct enterprise. Data were collected in Bandung, West Java, between April and June 2026. The questionnaire measured market-facing routine maturity through 30 items and recorded respondent and enterprise characteristics.

Indonesia provides a relevant setting given the employment contribution of micro and small enterprises and their managerial constraints (BPS-Statistics Indonesia, 2025). Recruitment through Rumah BUMN Kota Bandung and Perkumpulan Pengusaha Karsa Mandiri (PPKM) enabled access to owner-managers across heterogeneous commercial activities. Municipal registration data further document the scale and sectoral diversity of Bandung's enterprise ecosystem (Bandung City Investment and One-Stop Integrated Services Office, 2025).

Participant eligibility and recruitment

Eligible respondents were consenting owners or managerial decision-makers responsible for market-facing activities in MSMEs operating within Bandung municipality. Inactive enterprises, businesses outside municipal boundaries, personnel without commercial decision-making authority, and

incomplete or out-of-range records were excluded. Recruitment covered micro, small, and medium enterprises without sectoral quotas.

The network-based sample was non-probabilistic. Because the networks did not constitute an exhaustive municipal register, population coverage could not be calculated, and the findings cannot be treated as representative of Bandung or Indonesia. Digital-platform adoption and usage intensity were neither eligibility requirements nor measured variables; the empirical scope concerns reported internal routine maturity.

Instrument architecture and behavioural anchors

The instrument comprised Customer Insight (eight indicators), Value Proposition (seven), Channel Management (eight), and Customer Relationship (seven). Items represented concrete practices, including customer identification, benefit communication, channel selection, and post-purchase follow-up.

Responses used five behavioural maturity categories: 0, not implemented; 1, considered or trialled; 2, implemented without documentation; 3, routinely implemented with simple documentation; and 4, routinely implemented with comprehensive documentation, evaluation, and systematic decision-making use. These anchors represented increasing routinisation and managerial utilisation, consistent with ordered developmental states in maturity-model design (Mettler, 2011). They provided concrete reference points while retaining the limitations of self-reported measurement.

Data screening and descriptive assessment

The audit examined completeness, response ranges, item variance, duplicate identifiers, and straight-line patterns. No missing or out-of-range responses were detected; all 406 records were retained without imputation. Straight-line cases were documented rather than automatically excluded because uniform maturity profiles could reflect genuine organisational conditions. Their influence was assessed through sensitivity analysis.

Domain means were rescaled to 0–100, with confidence intervals estimated using 10,000 bootstrap resamples and a fixed random seed. Five equal-width intervals supported interpretation: Not initiated (0–20), Exploratory (>20–40), Developing (>40–60), Structured (>60–80), and Integrated (>80–100). These intervals served as communication aids rather than empirically validated diagnostic or prescriptive thresholds.

Hierarchical measurement specification

Cronbach's alpha assessed internal consistency, while KMO and Bartlett's test examined sampling adequacy and factorability. The hierarchical component model specified four reflective first-order domains and a reflective higher-order

Market-Facing Capability Readiness construct. Estimation used a path-weighting PLS algorithm with 5,000 bootstrap resamples. Measurement assessment covered standardised outer loadings, internal consistency, composite reliability, and AVE (Hair et al., 2019; 2020; Sarstedt et al., 2019; Ringle et al., 2023). HTMT values exceeding 0.90 were interpreted as evidence of potential construct overlap (Henseler et al., 2015).

Reflective specification was a theory-driven, testable approximation. Indicators were expected to covary with underlying domain maturity, while omission of an individual indicator would not redefine the domain (Hair et al., 2019; 2020; Sarstedt et al., 2019). Consequently, HTMT assessed whether the proposed domains were empirically distinguishable; high internal consistency alone was not treated as sufficient justification for the measurement structure.

Index construction and weighting sensitivity

For each respondent, the domain score was derived by summing the relevant item scores, dividing by the maximum possible domain score, and normalising to a 0–100 scale. Formula 1 shows general normalisation formula.

$$Score_d = \frac{\sum_{i=1}^{n_d} x_i}{4 \times n_d} \times 100 \quad (1)$$

where x_{dij} denotes the score of respondents i on item j in domain d , and n_d represents the number of items within that domain. Accordingly, the four domain scores were calculated as follows.

$$CI_i = \frac{100}{4 \times 8} \sum_{j=1}^8 CI_{ij} \quad (2)$$

$$VP_i = \frac{100}{4 \times 7} \sum_{j=1}^7 VP_{ij} \quad (3)$$

$$CM_i = \frac{100}{4 \times 8} \sum_{j=1}^8 CM_{ij} \quad (4)$$

$$CR_i = \frac{100}{4 \times 7} \sum_{j=1}^7 CR_{ij} \quad (5)$$

Calculating the mean within each domain before aggregation ensured that domains with eight indicators did not exert more influence than those with seven. The primary operational index assigned an equal weight to each domain

$$MFCRI_i^{EW} = \frac{CI_i + VP_i + CM_i + CR_i}{4} \quad (6)$$

To evaluate the robustness of this index, a sensitivity analysis compared the equal-weight (EW) approach against a loading-derived (LD) alternative. For the latter, the higher-order loading for the domain d (denoted as λ_d) was normalised across all four domains to obtain the loading-derived weight w_d :

$$w_d = \frac{\lambda_d}{\sum_{k=1}^4 \lambda_k}, \text{ where } \sum_{d=1}^4 w_d = 1 \quad (7)$$

The loading-derived alternative was subsequently computed as:

$$MFCRI_i^{LD} = w_{CI}CI_i + w_{VP}VP_i + w_{CM}CM_i + w_{CR}CR_i \quad (8)$$

The two indices were compared using Pearson correlation, Spearman rank correlation, and the maximum absolute score difference (Δ_{max}), and the frequency of categorical shifts (N_{change}):

$$\Delta_{max} = \max_i |MFCRI_i^{LD} - MFCRI_i^{EW}| \quad (9)$$

$$N_{change} = \sum_{i=1}^N \mathbf{1}(c_i^{LD} \neq c_i^{EW}) \quad (10)$$

In the final expression, c_i^{EW} and c_i^{LD} denote the readiness categories assigned under the two rules, respectively, and the indicator function equals 1 when the stated condition is true and 0 otherwise. The complete procedure was repeated after excluding straight-line cases. The operational rule was selected based on theoretical completeness, transparency, and empirical robustness rather than numerical precision.

Exploratory known-groups assessment

Spearman correlations examined monotonic associations between MFCRI scores and ordered categories of operating duration, turnover, employee count, and education. Kruskal–Wallis tests compared score distributions across these categories and the four principal business sectors. These analyses explored score differentiation within the sample. They did not establish whether readiness preceded enterprise development or accompanied the formalisation of growing businesses.

Ethical and data governance

Participation was voluntary, and respondents received information about the study's objectives and confidentiality procedures before completing the questionnaire. Submission constituted informed consent. Although the source dataset contained respondent and enterprise names, analyses and reporting used de-identified aggregate data. Secure retention and access controls protected identifiable records. Future digital implementations will apply data minimisation and maintain auditable scoring algorithms and versioned thresholds.

Results

Sample characteristics and data quality

The sample comprised 406 MSMEs, with 54.9% female and 45.1% male respondents. Most held bachelor's degrees (45.8%), senior high school qualifications (30.8%), or diplomas (18.7%). Principal sectors were food and beverage (36.9%), fashion (24.4%), crafts or creative products (20.7%), and beauty services (15.3%). Most firms employed 1–5 people (58.4%), while 11.8% had no employees (Table 2).

All 12,180 item responses were complete and within the 0–4 range. Straight-lining occurred in 76 records (18.7%). These were retained because uniform responses could reflect genuine maturity profiles, with their influence examined through sensitivity analysis. Network-based recruitment limits sample representativeness.

Readiness distribution and diagnostic profile

The equal-weight MFCRI averaged 67.40 (SD = 18.99; median = 71.88; range = 23.55–100), with scores concentrated in the upper-middle scale as shown in Figure 2(a). Provisional classifications comprised Exploratory (10.3%), Developing (17.7%), Structured (45.6%), and Integrated (26.4%); none were Not initiated as shown in Figure 2(b).

These categories require caution because thresholds remain unvalidated and aggregate scores can conceal uneven item-group profiles. Only 26 firms (6.4%) averaged at least 3.5 in every domain; 197 (48.5%) had at least one domain below 2.5, and 61 (15.0%) had at least one normalised domain score below 40. These differences do not establish independent domain-level deficiencies.

Domain means were similar: Customer Insight, 66.82 (95% bootstrap CI: 64.85–68.81); Value Proposition, 67.53 (65.54–69.51); Channel Management, 67.76 (65.75–69.70); and Customer Relationship, 67.49 (65.47–69.47). Overlapping intervals provided no clear evidence of a dominant or deficient domain shows in Figure 3(a). At item level, only 24.6% of responses reached score 4, requiring routine implementation, comprehensive documentation, evaluation, and systematic decision-making use as shown in Figure 3(b).

The lowest mean item scores corresponded to identifying customers who purchase most frequently (CI1, mean = 2.60), followed by systematic customer segmentation (CI7, 2.61), periodic relationship maintenance (CR4, 2.62), communication adaptation based on channel and customer characteristics (CM5, 2.63), and the systematic improvement of offerings through quality, packaging, service, price, or experience (VP6, 2.64). Conversely, the highest-scoring items included utilising customer feedback to enhance value propositions (VP7, 2.79), employing relevant sales and promotional channels (CM6, 2.78), and monitoring customer satisfaction for continuous improvement (CR7, 2.76). Even these higher averages remained below 3.0 on the maturity scale, indicating that the

corresponding self-reported practices were not consistently described at their most documented and evaluative level.

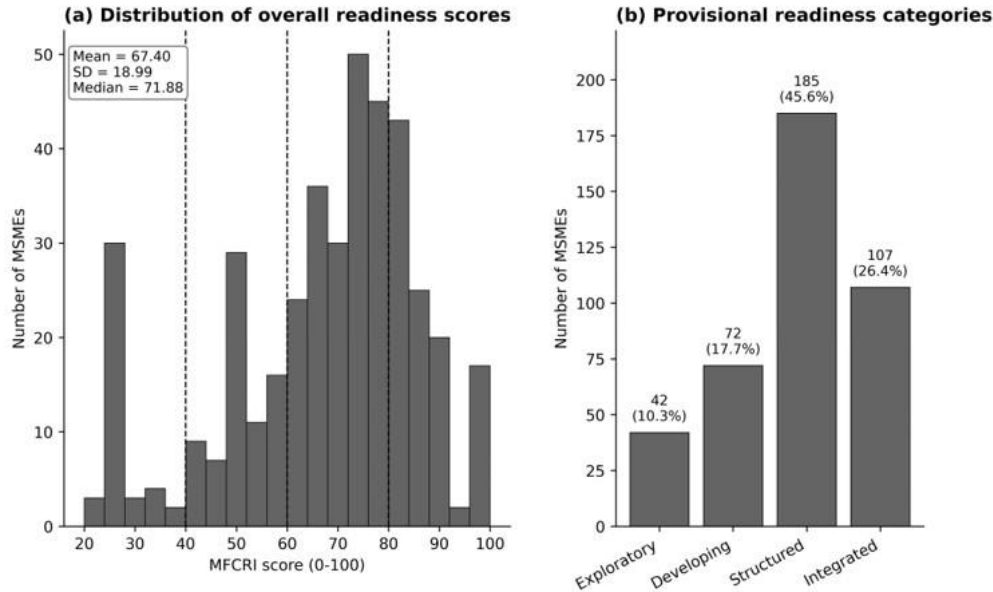
Table 2.
Sample profile and data-quality audit (N = 406)

Characteristic	Category	n	%
Gender	Female	223	54.9
	Male	183	45.1
Education	Doctorate	1	0.2
	Master's degree	13	3.2
	Bachelor's degree	186	45.8
	Diploma	76	18.7
	Senior high school	125	30.8
	Junior high school	5	1.2
	Food and beverage	150	36.9
	Fashion	99	24.4
Business sector	Crafts/creative products	84	20.7
	Beauty	62	15.3
	Other	11	2.7
Operating duration	2–3 years	101	24.9
	4–5 years	135	33.3
	5–6 years	94	23.2
	More than 6 years	76	18.7
	< IDR 1 million	15	3.7
Monthly turnover	IDR 1–5 million	93	22.9
	IDR 5–10 million	190	46.8
	IDR 10–15 million	108	26.6
	No employees	48	11.8
Number of employees	1–5 employees	237	58.4
	6–10 employees	96	23.6
	11–20 employees	23	5.7
	More than 20 employees	2	0.5
	Completed cases	406	100.0
Data quality	Missing item values	0	0.0
	Out-of-range item values	0	0.0
	Straight-line cases	76	18.7

Note: Other sectors combine eleven individually reported categories with very small frequencies. Straight-line cases were retained and examined in the sensitivity analysis
Source: Authors' work (2026)

Figure 2.

Overall MFCRI readiness profile



Source: Authors' work (2026)

Reliability, factorability, and first-order measurement quality

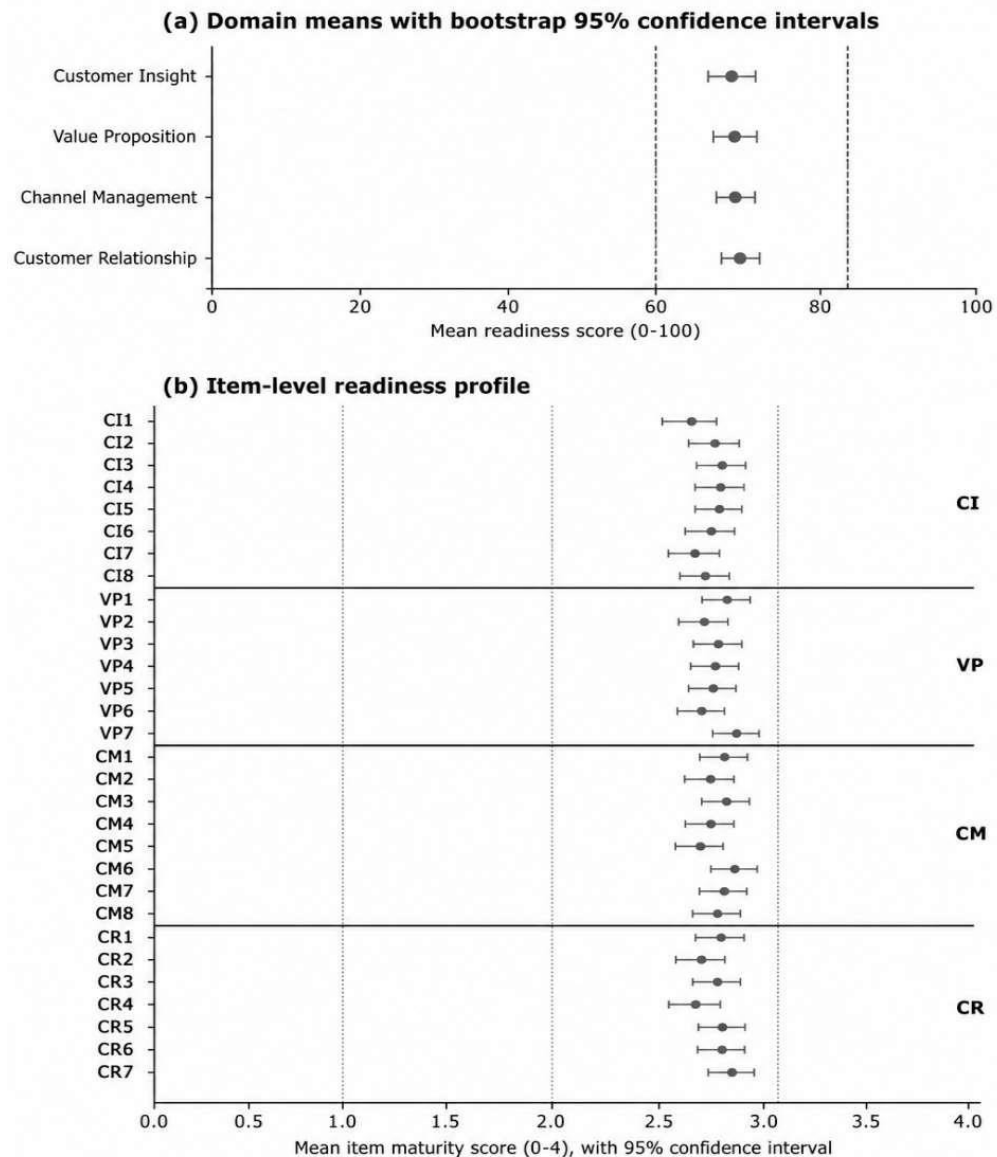
The 30-item measurement scale demonstrated excellent overall internal consistency ($\alpha = 0.971$). At the dimension level, Cronbach's alpha values remained high across all domains: 0.914 for Customer Insight, 0.899 for Value Proposition, 0.916 for Channel Management, and 0.902 for Customer Relationship. Corrected item-total correlations were uniformly positive and substantial, indicating that every indicator contributed significantly to the general readiness construct. Furthermore, factorability was strongly supported; the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.972, and Bartlett's test of sphericity was highly significant ($\chi^2(435) = 8.952.04, p < 0.001$), confirming that the empirical correlation matrix was well-suited for latent-structure modeling. The eigenvalue extraction pattern revealed a dominant general factor. The first eigenvalue was 16.42, accounting for 54.75% of the standardized item variance, whereas the second eigenvalue dropped sharply to 1.24, accounting for a mere 4.13%. All subsequent eigenvalues fell below the unity threshold. While this structural pattern does not validate independent interpretation of the four proposed domains, it empirically underlines that the items share a robust, common latent readiness signal.

The Partial Least Squares Structural Equation Modeling (PLS-SEM) estimation results provided strong evidence for indicator reliability and convergent validity. As summarised in Table 3, all 30 standardised outer loadings exceeded the conservative 0.70 benchmark, ranging from 0.764 to 0.817. Construct reliability was further confirmed, with composite reliability values ranging from 0.921 to 0.932, while convergent validity was established with average variance extracted (AVE) values spanning from 0.624 to 0.631. Additionally, the first-order

standardised root mean square residual (SRMR) was 0.045, indicating an acceptable model fit. Collectively, these psychometric findings provide robust empirical support for P1.

Figure 3.

Domain means and item-level readiness profiles



Source: Authors' work (2026)

Higher-order structure and discriminant validity

The four domains loaded strongly onto the higher-order Market-Facing Capability Readiness construct. The standardised loadings were 0.938 for Customer Insight, 0.944 for Value Proposition, 0.944 for Channel Management, and 0.907 for Customer Relationship. Bootstrap confidence intervals excluded zero, and the

higher-order construct demonstrated high internal consistency ($\alpha = 0.951$, $\rho_A = 0.964$, $AVE = 0.871$) alongside acceptable global fit ($SRMR = 0.053$). A repeated-indicators cross-check yielded near-identical structural relationships, providing robust empirical support for P2 and justifying the aggregation into an overall readiness index.

Table 3.
Descriptive and hierarchical measurement summary

Construct	Items	Mean (0–100)	α	ρ_C	AVE	Higher order loading	Normalized coefficient
Customer insight	8	66.82	0.91	0.93	0.62	0.94	25.13%
Value proposition	7	67.53	0.89	0.92	0.62	0.94	25.30%
Channel management	8	67.76	0.92	0.93	0.63	0.94	25.28%
Customer relationship	7	67.49	0.90	0.92	0.63	0.91	24.29%
Overall MFCRI	4 domains	67.40	0.95	0.96	0.87	—	—

Note: All first-order item loadings ranged from 0.764 to 0.817. First-order SRMR = 0.045; higher-order SRMR = 0.053. Normalized coefficients are sensitivity weights, not causal effects or absolute managerial importance

Source: Authors' work (2026)

Conversely, discriminant validity was not established across the majority of domain pairs. The Heterotrait-Monotrait (HTMT) ratios were 0.972 for Customer Insight and Value Proposition; 0.947 for Customer Insight and Channel Management; 0.826 for Customer Insight and Customer Relationship; 0.911 for Value Proposition and Channel Management; 0.904 for Value Proposition and Customer Relationship; and 0.908 for Channel Management and Customer Relationship. With five of six ratios exceeding the conservative 0.90 threshold, the findings preclude the claim of four empirically distinct reflective sub-constructs within MFCRI v1.0. Instead, these results support a dominant general market-facing readiness factor while signalling that the current item sets share substantial variance and potential content overlap. Consequently, the four domain labels are retained provisionally as theory-driven content facets for diagnostic coverage, and any observed domain-score variations must be interpreted strictly in an exploratory fashion rather than as validated structural distinctions. Future instrument refinement must focus on revising overlapping items, sharpening conceptual boundaries, and cross-validating the measurement structure in an independent sample prior to asserting separate sub-domain validity.

Weighting and robustness

Normalising the four higher-order loadings yielded weights of 25.13% (Customer Insight), 25.30% (Value Proposition), 25.28% (Channel Management),

and 24.29% (Customer Relationship). The empirical sensitivity formula is expressed as:

$$MFCRI = 0.2513(CI) + 0.2530(VP) + 0.2528(CM) + 0.2429(CR) \quad (11)$$

These similar coefficients do not establish the independent importance or managerial priority of any domain. Furthermore, the empirical and equal-weight indices were statistically indistinguishable; the Pearson correlation was 0.9999, and the Spearman rank correlation was 0.9998. The maximum score difference was 0.324 points on the 0–100 scale, with only one of the 406 enterprises shifting readiness categories. Sensitivity analysis excluding the 76 straight-line cases yielded similar weights and maintained substantive conclusions. Consequently, the equal-weight formula was retained for its transparency, reproducibility, and resistance to false precision, thereby supporting P3.

Exploratory known-groups evidence

Readiness scores increased consistently with organisational longevity and firm scale, as illustrated in the exploratory patterns presented in Appendix 3. Mean MFCRI scores were 60.25 (2–3 years), 67.61 (4–5 years), 71.26 (5–6 years), and 71.75 (>6 years). This monotonic association was statistically significant ($\rho = 0.207$, $p < 0.001$), with Kruskal-Wallis tests confirming distribution differences ($H = 18.95$, $p < 0.001$).

The most pronounced known-groups pattern emerged with respect to enterprise scale. Mean readiness scores were 53.83 (no employees), 66.20 (1–5 employees), 74.08 (6–10 employees), and 80.92 (11–20 employees). The small subsample reporting >20 employees ($N = 2$) was excluded from interpretation. Across these ordered categories, the association was robust ($\rho = 0.328$, $p < 0.001$; $H = 46.67$, $p < 0.001$). Turnover also showed a modest positive association with readiness ($\rho = 0.136$, $p = 0.006$). Conversely, formal education showed no association with readiness ($\rho = 0.014$, $p = 0.775$), nor did sector membership ($H = 5.54$, $p = 0.136$). These results support the interpretation that the MFCRI reflects accumulated organisational routines rather than mere respondent demographics. Thus, P4 is supported by operating duration and employee count; the null education result is consistent with P4; turnover is exploratory.

Discussion

From activity adoption to capability maturity

The findings position market-facing readiness as the reported institutionalisation of organisational routines. The mean MFCRI score of 67.40 indicates implementation beyond initial experimentation, yet fewer than one-quarter of item responses reached the highest maturity anchor. This contrast suggests that established activity can coexist with limited documentation, evaluation, and systematic use of information.

Lower-rated practices involving segmentation, channel-specific communication, and post-purchase follow-up identify possible priorities for verification rather than independently established capability deficits. Although these practices distinguish routine maturity conceptually from digital presence, platform adoption and usage intensity were not measured. Their empirical relationship with readiness therefore remains unresolved.

A strong general factor with diagnostic subdomains

High internal consistency, a dominant first eigenvalue, and strong higher-order loadings support an overarching readiness interpretation. This pattern accords with marketing capability as an integrated organisational system [Hoque et al., \(2022\)](#), in which market sensing acquires value through coordinated offerings, channels, and customer-linking routines ([Cao & Weerawardena, 2023](#)).

However, elevated HTMT values limit the interpretation of four distinct capabilities. Substantive interdependence, common maturity anchors, and overlapping content offer plausible explanations, but their contributions cannot be separated using the present evidence. The overall MFCRI is consequently the primary supported output, while domain profiles provide provisional prompts for item-level investigation. This distinction preserves the instrument's potential utility without overstating its diagnostic resolution.

Maturity levels and observable digital behaviour

The maturity anchors can be illustrated by possible marketing practices at different levels, including digital examples; these examples were not observed separately as adoption or usage measures. At Level 0, an MSME maintains no stable market-facing routine and frequently lacks a consistent digital channel. At Level 1, digital activity remains experimental and event-driven, characterised by sporadic postings, trial marketplace listings, or informal messaging devoid of defined targeting or follow-up protocols. At Level 2, tools are deployed repeatedly, yet information concerning customers, content, channels, and complaints remains largely undocumented and heavily dependent on the owner's personal memory. At Level 3, routine digital engagement is underpinned by simple records, content schedules, customer lists, channel comparisons, and periodic reviews. At Level 4, documented evidence is systematically evaluated and directly applied to refine decisions on customer segmentation, value offerings, channel allocation, service recovery, and relationship management. These illustrative descriptions must not be read as observed platform-use patterns, because platform types and usage intensity were not measured separately.

Consequently, the resulting readiness categories function strictly as communicative heuristics rather than validated performance thresholds. Achieving a "Structured" or "Integrated" aggregate score does not automatically guarantee superior sales performance, customer retention, or profitability, and a high

compensatory score can conceal low item responses. The elevated HTMT values reinforce this methodological caution: the overall MFCRI score stands as the primary empirically supported output, whereas the four domain profiles serve solely as provisional diagnostic lenses that may suggest areas for further inquiry. These sub-domains must not be interpreted as empirically independent capabilities until future item revisions successfully establish discriminant validity within an independent sample.

Rationale for the equal-weighting approach

Composite-index development often risks creating an illusion of objectivity by deriving unequal weights from sample-specific statistical coefficients. In the present study, empirical estimation failed to reveal a meaningful hierarchy of domain importance: normalised coefficients clustered within approximately 1 percentage point of 25%, confidence intervals overlapped substantially, and applying these weights yielded negligible changes in final scores, rankings, or categorisations. Reporting weights of 25.13%, 25.30%, 25.28%, and 24.29% as substantively distinct would imply an unearned level of empirical precision that the underlying data cannot support.

Equal weighting does not represent an absence of methodological rigour; rather, it constitutes an explicit normative decision affirming that each domain is equally fundamental to holistic market-facing readiness. Both theoretical foundations and exhaustive sensitivity analyses support this decision, as the four domains represent complementary phases of an integrated market-facing cycle, and the empirical alternative yields no substantive informational gain. Furthermore, equal weighting substantially enhances communicative transparency and interpretive utility. Owner-managers, business mentors, and supporting agencies can reproduce index scores without reliance on proprietary estimation software and clearly discern how each domain contributes to the aggregate outcome.

Admittedly, this choice does not eliminate compensability, meaning a high score in one domain may mathematically offset a deficit in another. While this characteristic is acceptable for a macro-level summary indicator, it can prove problematic when formulating targeted intervention strategies. Consequently, future digital diagnostic implementations should explicitly display item and provisional content-domain scores alongside prompts for human follow-up when responses are low, even when the overall score remains moderate or high. Such diagnostic warning flags should nevertheless remain conceptually separate from the primary numerical index until a non-compensatory minimum-domain threshold is rigorously validated in subsequent research.

Known-groups patterns and organisational development

The observed positive associations between MFCRI scores, operating duration, and organisational scale provide exploratory known-groups evidence

consistent with the proposed overall construct. As enterprises mature and expand their headcount, reliance on tacit, owner-centric knowledge becomes increasingly unsustainable. Consequently, customer intelligence must be codified, functional roles coordinated, and decision-making processes standardised. The pronounced elevation in readiness scores observed as firms transition from solo operations to employing eleven to twenty individuals is consistent with an organisational formalisation interpretation, although this cross-sectional association does not establish a developmental trajectory.

Nevertheless, these empirical findings must not be interpreted strictly causally. While superior market-facing readiness may indeed facilitate firm growth, the operational imperative of managing larger structures equally compels enterprises to formalise their routines. These developmental dynamics are inherently recursive and frequently co-occur. Consequently, longitudinal tracking is required to determine whether enhancements in MFCRI scores systematically precede objective performance gains, such as sales growth, customer retention, or geographic expansion. Similarly, the modest magnitude of the association observed with annual turnover is entirely plausible, given that top-line revenue is governed by a multifaceted matrix of sector-specific dynamics, pricing strategies, production capacity, and broader macroeconomic conditions operating alongside internal capabilities.

Finally, the absence of a significant association between MFCRI scores and formal educational attainment is theoretically instructive. The observed null association suggests that the overall score was not strongly associated with educational attainment in this sample; however, it cannot rule out other respondent-related sources of bias. The index was designed to assess reported organisational practices rather than formal education. Future studies should test whether training, structured tools, coaching, and feedback improve these practices.

For owner-managers, the MFCRI should serve as a diagnostic and actionable instrument rather than a competitive performance league table. While the aggregate score provides a concise index of readiness, item responses and provisional domain profiles can guide a discussion of possible next steps, subject to corroboration with records and the owner's account. For instance, a lower Customer Insight profile may prompt a check of the need to establish formal customer identification, segmentation, and monitoring routines. Conversely, a lower Value Proposition profile may prompt a review of how customer information informs the offer. Lower Channel Management responses may suggest reviewing practices in channel fit, message adaptation, and performance evaluation. At the same time, lower Customer Relationship responses may suggest a need for systematised record-keeping, structured follow-up procedures, and formalised complaint-handling protocols.

Furthermore, bridging these diagnostic gaps requires recognising that capability development is path-dependent; interventions must be calibrated to an

organization's existing routines rather than imposed uniformly across heterogeneous developmental stages. By mapping developmental trajectories to specific maturity anchors, business mentors may better match support to reported routines and avoid recommending tools before basic practices are established. Consequently, item-level feedback may inform a tentative support plan. Whether the proposed activities improve routines or business outcomes remains to be assessed in longitudinal or intervention studies.

The maturity anchors embedded within the instrument render these recommendations concrete and adaptive. Rather than advising a Level 1 enterprise to deploy advanced marketing analytics, the MFCRI encourages the consistent implementation of fundamental baseline practices. As firms progress, the strategic focus naturally shifts toward creating simple operational records (Level 2) and defining formal evaluation routines and decision-making rules (Level 3). The proposed staged logic could be evaluated for its usefulness in aligning support with reported practices. Appendix 2 offers illustrative actions at successive maturity levels; their effectiveness has not been tested.

Stakeholder roles and boundary conditions

Operational applications of the MFCRI must remain differentiated rather than uniform. Local governments and business-support agencies can leverage aggregate, de-identified profiles to explore training needs suggested by reported maturity profiles, while strictly avoiding using the index as a bureaucratic licensing or funding gate. Incubators and mentors may review low item responses with the owner, consider time-bound action plans, and reassess progress after implementation. Furthermore, business associations can provide sector-specific peer benchmarks exclusively when subgroup sample sizes adequately safeguard participant confidentiality. Digital-platform and financial-service partners can facilitate low-cost record-keeping and analytics solutions, provided that data sharing remains governed by explicit consent and strict purpose limitations. Ultimately, these roles must be tailored to specific enterprise types, operating durations, connectivity levels, and access to technology; current cross-sectional evidence does not establish direct causality between the proposed interventions and enhanced MSME performance.

Implications for mentoring, incubation, and policy

Development programs can leverage the MFCRI to transition from uniform marketing curricula toward differentiated, needs-based support. The overall index may summarise reported readiness, while provisional domain profiles and item responses may suggest topics for a follow-up conversation; these profiles are not independently validated diagnoses. Mentors may verify reported low-maturity practices before selecting interventions, document structured action plans, and track progress over defined intervals. Furthermore, aggregated data can reveal systemic

needs within a cohort, such as possible interest in customer segmentation support or relationship systems. Related research links market-driven strategies with MSME competitive growth (Amadasun & Mutezo, 2022).

For incubators, the index may serve as a valuable entry and exit assessment tool, provided it is not employed as a high-stakes gatekeeping mechanism. Changes in the overall index and item responses could be monitored alongside participation records, but responsiveness and intervention effects require longitudinal validation. For policymakers, aggregate results may inform exploratory needs assessment, provided sampling, privacy, and fairness are addressed before resource-allocation decisions. Benchmarking initiatives must utilise sufficiently large, representative comparison groups and maintain strict protocols to ensure that individual enterprise performance remains confidential.

Theoretical contribution

The study contributes a capability-maturity interpretation of market-facing readiness, defined through the recurrence, documentation, evaluation, and managerial use of routines. Its measurement architecture connects customer insight, value configuration, channel management, and customer relationships while separating psychometric coherence from operational weighting.

The evidence supports an overall readiness score more clearly than four independent diagnostic scales. This qualification is central to the contribution: MFCRI offers a testable framework for assessing reported routine maturity, while domain distinctiveness, external validity, and performance implications remain subjects for further investigation.

Proposed future research and digital MFCRI application roadmap

This section presents a future research and development agenda; it does not describe a currently implemented or empirically validated digital application. The translation of the MFCRI measurement prototype into a digital application requires a transition from a static questionnaire to a version-controlled diagnostic system. To preserve psychometric integrity, such a system must utilise deterministic scoring, ensure robust data governance, and provide actionable interventions. The development roadmap is structured into four sequential stages.

Stage 1: measurement refinement

The initial phase focuses on refinement and validation. Cognitive interviews with MSME owners are essential to ensure that each item and maturity anchor is interpreted as intended, while expert reviews must rigorously examine content coverage and domain boundaries. Indicators contributing to high HTMT ratios should be refined or pruned to reduce redundancy without compromising construct breadth. Furthermore, the revised instrument should integrate global domain criteria and objective external indicators such as customer retention rates, growth metrics, or performance documentation. A pre-registered validation plan will

formally specify sample requirements, scoring methodologies, exclusion criteria, and decision thresholds.

Stage 2: minimum viable application (MVA)

The MVA phase focuses on functional architecture. Core modules must encompass informed consent, business profiling, guided self-assessment, and optional evidence uploading. The deterministic scoring engine and action-recommendation engine must be fully auditable; thus, generative AI-based guidance should be integrated only after establishing rigorous, rule-based safeguards. To facilitate longitudinal research and instrument recalibration, the system must archive raw item responses, version identifiers, and assessment dates. Storing only aggregate scores would render subsequent validation and version migration impossible.

Stage 3: pilot testing and psychometric validation

The third stage involves rigorous pilot testing. A heterogeneous MSME sample should complete the assessment longitudinally to estimate test-retest stability. Concurrently, criterion and predictive validity must be examined against external firm outcomes. Psychometric evaluation must extend to measurement invariance testing across business sectors, firm sizes, and geographic regions. Furthermore, usability studies assessing completion rates, comprehension, and accessibility must be conducted alongside comprehensive privacy and security audits that cover data minimisation, encryption, and incident response protocols.

Stage 4: scaling and governance

The final stage entails scaling the platform while maintaining empirical rigour. Providing sector-specific or regional benchmarks is permissible only after establishing a sufficient database to prevent respondent re-identification. All modifications to instruments, formulas, or thresholds must undergo a formal, versioned governance process. The platform should continuously monitor model drift, subgroup performance, and data anomalies. Ultimately, the success of the platform should be measured by improvements in organisational capability and enterprise performance, rather than by assessment volume alone.

Conclusion, limitation, and future research

This study developed and conducted an initial psychometric evaluation of a 30-item Market-Facing Capability Readiness Index (MFCRI) for MSMEs. The framework conceptually distinguishes the presence of marketing activity from the reported maturity of repeatable, documented, and evaluative routines; digital adoption was not measured for a direct empirical comparison. Its four constituent domains, Customer Insight, Value Proposition, Channel Management, and Customer Relationship, represent a cohesive process through which firms sense market needs, configure value, manage access, and maintain customer relationships.

Empirical evidence supports the internal consistency and higher-order coherence of the readiness construct. The scale demonstrated excellent internal consistency, and convergent validity was supported by strong and statistically significant higher-order loadings. While the analysis identified substantial overlap among lower-order domains necessitating the interpretation of the MFCRI as a single overall index with exploratory content profiles rather than four independent scales, equal domain weighting remains a transparent operational design supported by the reported sensitivity analysis. Loading-derived coefficients proved virtually indistinguishable from equal weights, and the latter offers superior transparency and reproducibility for managerial application. Findings indicate that while many MSMEs have progressed beyond ad hoc experimentation, few reported the highest maturity anchor consistently across practices.

The MFCRI offers an initial overall measure of reported routine maturity for further validation in mentoring, incubation, and digital assessment settings. Practice-level suggestions require verification, and neither digital-channel adoption nor the effectiveness of support interventions was tested.

The findings of this study must be interpreted in light of several methodological constraints that outline a clear agenda for future research. A primary constraint stems from the reliance on a localised sample, which inherently bounds the generalizability of the results beyond the immediate urban MSME context. This boundary condition is further compounded by the use of single-respondent, self-reported metrics, introducing potential risks of social desirability bias and common-method variance. Subsequent investigations should therefore triangulate these subjective self-assessments with objective secondary system evidence, external mentor evaluations, or multi-informant perspectives to strengthen overall construct validity.

Consequently, the proposed operational framework functions strictly as a staged developmental roadmap rather than a validated causal treatment protocol. The present study did not evaluate external criterion measures, longitudinal forecasting, or experimental intervention effects; claims remain confined to instrument structure, descriptive readiness patterns, scoring sensitivity, and exploratory known-groups associations. Digital platform adoption, channel-use intensity, and response to digital marketing were not separately collected; the study therefore cannot estimate adoption–readiness associations or compare the effects of digital activities with routine maturity. Rigorous criterion validity, predictive validity, and demonstrable performance impacts must be firmly established before MFCRI scores are deployed for high-stakes administrative evaluations or assertions of direct economic enhancement.

From a predictive standpoint, although this study provides initial structural and exploratory evidence for known groups, it lacks validation against external performance criteria. Longitudinal inquiries are therefore essential to determine whether baseline MFCRI scores possess true predictive validity for objective

enterprise metrics, such as sustained revenue trajectories, customer retention rates, or long-term market survival under volatile economic conditions. Regarding measurement precision, the limited discriminant validity observed under conservative HTMT criteria underscores the ongoing need for item-level content refinement. Future developmental cycles should aim to construct a more parsimonious item set that preserves comprehensive diagnostic utility while sharpening domain-specific conceptual boundaries.

In alignment with these structural concerns, the established readiness categories remain provisional communication heuristics rather than definitive eligibility thresholds. Subsequent research should incorporate criterion-referenced validation or latent-profile analysis to establish empirically grounded performance benchmarks. From an administrative governance perspective, the identification of straight-lining tendencies among a minority of respondents emphasizes the imperative for enhanced digital collection protocols, including active response-time tracking and randomised item presentation.

Ultimately, given the inherent compensability of the current arithmetic composite index, future methodological work must explore alternative non-compensatory aggregation architectures, such as domain-specific "minimum thresholds" or critical-item gating, to prevent robust domains from inadvertently masking severe systemic vulnerabilities. Through these continuous iterative refinements, the MFCRI can evolve into a rigorously validated diagnostic instrument, enabling researchers and practitioners to assess reported maturity of internal market-facing routines and test its relationship with independently measured digital activity and enterprise outcomes.

Author contribution

Yati Rohayati: Conceptualisation and Research Design, Methodology, Writing Original Draft; **Puspa Wijayanti:** Data Collection, Data Analysis; **Murahartawaty Arief:** Writing, Review & Editing, and Layout.

Declaration of interest

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

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Appendix 1.

MFCRI instrument content and maturity anchors

Customer insight

- CI1. Identifies the customers who purchase most frequently
- CI2. Understands customer needs and buying habits
- CI3. Understands the reasons customers choose the offering
- CI4. Knows which products or services are most demanded
- CI5. Monitors changes in customer needs
- CI6. Identifies the most promising target customers
- CI7. Segments customers by characteristics, needs, or behavior
- CI8. Differentiates needs across customer segments

Value proposition

- VP1. Can explain the main benefits received by customers
- VP2. Aligns products or services with customer needs
- VP3. Identifies advantages relative to competitors
- VP4. Maintains a recognizable differentiation
- VP5. Communicates why customers should choose the offering
- VP6. Improves value through quality, packaging, service, price, or experience
- VP7. Uses customer feedback to improve the value offered

Channel management

- CM1. Identifies the sales channels customers use
- CM2. Provides channels that match customer buying habits
- CM3. Identifies promotional channels accessed by prospective customers
- CM4. Selects promotional channels based on the target customer's presence
- CM5. Adapts communication to channel and customer characteristics
- CM6. Uses the most relevant sales and promotional channels
- CM7. Provides convenient ordering and payment options
- CM8. Evaluates channel effectiveness using responses, orders, or sales

Customer relationship

- CR1. Records customer data and transaction history
- CR2. Identifies long-standing, loyal, or frequent customers
- CR3. Conducts post-purchase follow-up
- CR4. Maintains relationships through information, greetings, service, or offers
- CR5. Provides differentiated treatment for loyal customers

CR6. Collects and follows up on feedback or complaints

CR7. Monitors satisfaction and uses it for improvement

Behavioral maturity anchors

0. Not implemented

1. Considered or tried

2. Implemented but not documented

3. Implemented fairly routinely with simple documentation

4. Routinely implemented, documented, evaluated, and used for decisions

Appendix 2.

Illustrative marketing-development actions by MFCRI maturity level

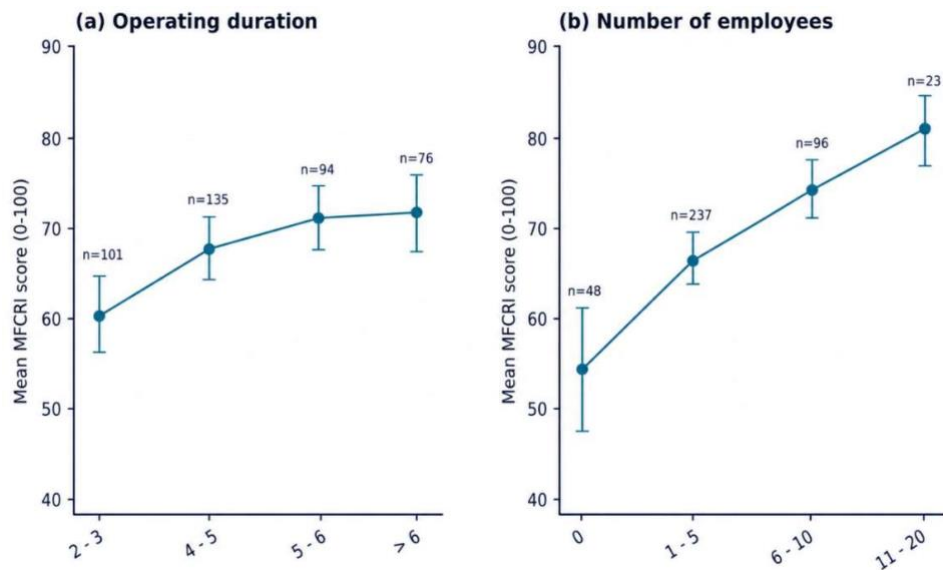
Maturity level	Illustrative practice (digital examples)	Priority action for msme	Operational support	Expected outcomes
0 Not Implemented	No stable digital routine or evidence	Select one priority customer group; establish one accessible contact channel; record a baseline	Provide basic digital literacy, manual guidance, and one-on-one onboarding	Basic digital literacy, manual guidance, and foundational onboarding
1 Considered or Trial	Sporadic postings, trial listings, or messaging	Execute one routine weekly (assign responsibility and schedule).	Mentors demonstrate simple routines with peer-learning references	Demonstrable routine with peer-learning support
2 Implemented, Unstructured	Regular activity relies heavily on owner's memory	Create transaction, content, and complaint logs; standardize basic operating procedures	Incubators provide templates, low-cost tools, and documentation checks	Standardized templates, affordable tools, and periodic checks
3 Routine with Simple Documentation	Records exist, but evaluation is irregular	Conduct monthly evidence reviews; compare trends; define corrective rules	Government and platform programs offer analytics clinics and benchmarking	Periodic performance analytics, benchmarking, and structured coaching
4 Documented, Evaluated, Data-Driven	Evidence systematically drives subsequent decisions	Integrate data consolidation, predictive customer insights, and automated effects	Support advanced analytics, data governance, and independent evaluation	Data-driven decision-making, market expansion, and robust data governance

Note: These staged actions and digital examples illustrate the maturity anchors; platform use was not separately measured. They are not validated performance interventions, domain-specific diagnoses, or universal thresholds

Source: Author's work (2026)

Appendix 3.

Exploratory known-groups patterns by operating duration and number of employees



Note: Error bars represent 95% bootstrap confidence intervals. The category for enterprises with more than 20 employees ($n=2$) is omitted from the visualization

Source: Authors' work (2026)