



Extending Tan's Internationalization Readiness Model: Organizational and Digital Capabilities of Non-Exporting MSMEs

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Abstract

This article develops a new conceptual model that extends the internationalization readiness model of Tan, Brewer, and Liesch (2007), a foundational theoretical framework for the pre-export phase. Conventional export readiness models assume that firms already possess basic export capacity, limiting their relevance for MSMEs that have never exported. Drawing on a semi-systematic literature review with two-stage screening and deductive-inductive coding, the study extends Tan et al.'s core constructs—stimuli, attitudinal commitment, firm resources, and lateral rigidity—to non-exporting MSMEs. The extension introduces organizational and digital capabilities between the pre-export core and operational export readiness; the two layers are linked by absorptive capacity and moderated by environmental enablers. Five propositions are formulated to explain routinization as the mechanism that converts commitment into readiness, the task conditions that determine whether digital capability complements or substitutes for organizational capability, and three environmental mechanisms. The study also proposes formative indicators. The framework is intended as a diagnostic tool rather than a predictive model and still requires empirical validation.

Keywords: *Internationalization readiness, Export readiness, Organizational capability, Digital capability, Non-exporting MSMEs*

INTRODUCTION

Micro, small, and medium-sized enterprises (MSMEs) in Indonesia often produce internationally competitive products, yet most have never exported directly (Revindo & Gan, 2016; Ardiyanti & Kahfi, 2023). Export potential is not the same as export readiness. A firm may have an attractive product or indirect export experience but still be unable to find buyers, set export prices, prepare documentation, or manage payment risk (Gerschewski et al., 2020).

Tan et al. (2007) modeled internationalization readiness before the first export decision, using export stimuli, attitudinal commitment, firm resources, and lateral rigidity. The model extends the Uppsala stage theory by focusing on the pre-internationalization phase, in which firms, particularly SMEs, accumulate the expertise and capacity needed before their first export. However, it predates the rapid growth of digital platforms, which MSMEs often still cannot leverage (Pingali et al., 2023; Añón Higón & Bonvin, 2024).

From a resource-based view (RBV), Elia et al. (2021) show that SMEs are no less inclined to export digitally despite resource constraints: firms that leverage digital technologies increase their digital exports regardless of size, and firms employing e-commerce managers are more likely

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to export digitally than those relying on traditional export managers.

Accordingly, this article extends [Tan et al. \(2007\)](#) by incorporating organizational and digital capabilities for non-exporting MSMEs and addresses three research questions (RQs): (RQ1) how stimuli, commitment, resources, and lateral rigidity shape movement toward exporting; (RQ2) how organizational and digital capabilities mediate this transition; and (RQ3) which readiness gaps are most consistently reported.

LITERATURE REVIEW

Pre-Export Readiness and Operational Export Readiness

In this review, the pre-export stage precedes a firm's first direct export and includes indirect exporting through intermediaries, a realistic first step for Indonesian MSMEs ([Ariyani, 2022](#)). The active export stage, in contrast, refers to regular direct exporting, with performance as the outcome rather than readiness. [Tan et al. \(2007\)](#) define internationalization readiness as a firm's preparedness (resources, knowledge, and capabilities) combined with the decision-maker's disposition to internationalize. Stimuli may be internal or external ([Leonidou, 1998](#)). Among Indonesian SMEs, foreign buyers and confidence in the product are the most influential stimuli, whereas government support ranks low ([Revindo & Gan, 2016](#)). Lateral rigidity refers to limited perception of stimuli, biased information search, and restricted choices ([Luostarinen, 1979](#); [Tan et al., 2018](#)). [Gerschewski et al. \(2020\)](#) show that financial readiness, trade and exchange readiness, and marketing readiness predict the export performance of New Zealand SMEs; this operational readiness marks the end of the pre-export stage.

Export barriers reflect readiness gaps. [Leonidou \(2004\)](#) classifies these barriers as internal (informational, functional, and marketing) and external (procedural, governmental, task, and environmental). In Indonesia, barriers vary by export stage ([Revindo, 2018](#)); non-exporters and exporters differ in their perceptions of barriers and in their participation in assistance programs ([Revindo et al., 2019](#)); and internal factors, such as export knowledge, are more dominant ([Ardiyanti & Kahfi, 2023](#)). Internal barriers therefore signal capability gaps, whereas external barriers relate to the environmental layer.

Organizational Capability and Digital Capability

Organizational capability is the ability to perform a coordinated set of tasks using organizational resources ([Helfat & Peteraf, 2003](#)). Dynamic capabilities extend this by enabling the reconfiguration of those resources ([Teece et al., 1997](#)). Digital capability—the ability to select, integrate, and use digital resources strategically ([Vial, 2019](#); [Warner & Wäger, 2019](#))—rests on learning and integration rather than mere adoption ([Maycotte et al., 2025](#)), as well as on governance and process redesign ([Pingali et al., 2023](#); [Michelotto & Joia, 2024](#)). In the export context, digital capability is the ability to use digital resources to capture foreign demand, present verifiable product and compliance information, communicate with foreign buyers, and complete cross-border transactions. Digitalization increases SMEs' trade participation, but this effect depends on internal capabilities ([Añón Higón & Bonvin, 2024](#)); digital capabilities improve export performance mainly by lowering transaction costs ([Du & Huang, 2025](#)); and digitalization and internationalization may also substitute for each other ([Denicolai et al., 2021](#)).

Absorptive capacity, the ability to recognize, assimilate, and apply external knowledge ([Cohen & Levinthal, 1990](#)), has a potential dimension (acquisition and assimilation) and a realized dimension (transformation and exploitation) ([Zahra & George, 2002](#)). Its digital form mediates the effect of digital capabilities on competitive advantage ([Dinh et al., 2025](#)). In Indonesia, the primary barrier to digital adoption is organizational readiness rather than the cost of technology ([Rahayu &](#)

Day, 2017). Absorptive capacity determines whether handicraft exporters can learn from value chains (Fransen & Helmsing, 2017), and artisan clusters remain dependent on intermediaries (Tambunan, 2009).

RESEARCH METHOD

Literature Search and Retrieval

A semi-systematic review with thematic synthesis (Snyder, 2019) is well suited to conceptual integration across heterogeneous research streams. Google Scholar was searched for full-text articles published in 2016–2026 in English or Indonesian, using the keyword combinations shown in Table 1. Foundational works of any year or type were identified through backward citation searching. Title–abstract screening retained documents addressing export readiness, internationalization readiness, or organizational or digital capabilities in SMEs/MSMEs; full texts were then assessed against the inclusion and exclusion criteria.

Table 1. Summary of the search and screening process

Stage	Description
Source and period	Google Scholar; 2016–2026
Search string	("internationalization readiness" OR "export readiness" OR "lateral rigidity" OR "Tan model" OR "digital capability" OR "organizational capability") AND (SME OR MSME)
Documents identified	61 articles
Excluded at title–abstract screening	31 of 61 excluded; 30 articles remaining
Excluded at full-text screening	11 of 30 (full text unavailable [5]; inaccessible [6])
Citation searching	12 foundational sources added
Included	19 empirical sources and 12 foundational sources

Screening and Selection Procedure

Screening applied the inclusion and exclusion criteria in Table 2. Articles that failed basic requirements, such as full-text availability and accessibility, were excluded, leaving 19 articles.

Table 2. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Published in 2016–2026, written in Indonesian or English, and available and accessible in full text	Published outside 2016–2026, not written in English or Indonesian, or full text unavailable or inaccessible
Addressing internationalization readiness, export readiness, lateral rigidity, the Tan model, digital capability, organizational capability, or SMEs/MSMEs	Unrelated to internationalization readiness, export readiness, or the context of export readiness models

FINDINGS AND DISCUSSION

Proposed Model Extension

The proposed framework (Figure 1) retains the core of the Tan et al. (2007) model—stimuli filtered by lateral rigidity activate commitment and mobilize resources for the first export decision—and then adds two capability layers that lead to operational export readiness

(Gerschewski et al., 2020). Organizational capability converts commitment and resources into routines: role clarity and delegation; standard operating procedures (SOPs) for costing, quality, and documentation; and auditable financial administration (Helfat & Peteraf, 2003). In micro-enterprises, this capability may reside with the owner, so its indicators focus on documented routines.

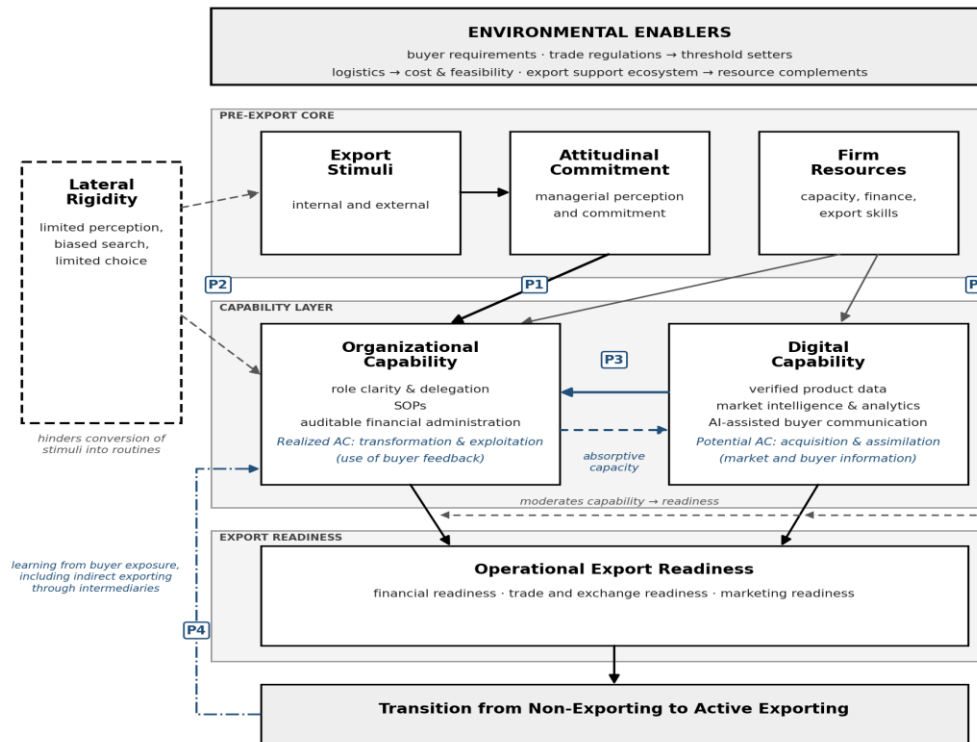


Figure 1. Extended internationalization readiness model for non-exporting MSMEs (core: Tan et al., 2007; operational readiness: Gerschewski et al., 2020; environment: adapted from Tornatzky & Fleischer, 1990; capability layers, absorptive capacity linkage, and P1–P5: the authors).

Absorptive Capacity as the Link Between Layers

Absorptive capacity (AC) spans both capability layers rather than forming a separate construct, and it explains how digitally generated market intelligence becomes actionable export knowledge. Its potential dimension belongs to digital capability: acquiring inquiries, marketplace reviews, and analytics data, and assimilating what foreign buyers consider important. Its realized dimension belongs to organizational capability: transforming that knowledge into updated costing, specifications, or documentation, and then exploiting it in price quotations, sample shipments, and export shipments. A firm with strong digital capability but weak realized absorptive capacity will accumulate inquiries it cannot convert into transactions. The two dimensions are therefore measured separately (Table 4).

Environmental Enablers

Environmental factors do not create readiness; they condition how capabilities are deployed (Tornatzky & Fleischer, 1990) through three mechanisms. Buyer requirements and trade regulations act as threshold setters: rules on specifications, certification, and documentation set the level routines must reach, so stricter requirements demand greater organizational capability to achieve the same level of readiness. Logistics is a cost and feasibility condition: freight access and

lead times determine whether prices and delivery commitments can be met, so similar capabilities may yield different levels of readiness across locations. The support ecosystem acts as a resource complement: institutions, associations, and intermediaries lower the cost of learning. Indonesian evidence fits this enabling rather than triggering role: participation in assistance programs distinguishes exporters from non-exporters (Revindo et al., 2019), yet government support is a weak stimulus (Revindo & Gan, 2016), and support that substitutes for internal routines may perpetuate dependence on intermediaries (Tambunan, 2009).

Propositions

Table 3 compares each proposition with prior literature and indicates how it can be tested.

Table 3. Novelty of the propositions

	Prior findings	Contribution of the proposition	Testing approach
P1	Stimuli → commitment → export decision (Tan et al., 2007)	Routinization mediates commitment → operational readiness	Mediation
P2	Rigidity limits perception and choice (Tan et al., 2018)	Rigidity also impedes commitment → routines	Moderation on both paths
P3	Digital benefits depend on internal capabilities (Añón Higón & Bonvin, 2024)	Task conditions determine complementarity or substitution	Interaction, by task and channel
P4	Absorptive capacity mediates learning from value chains (Fransen & Helmsing, 2017)	Realized absorptive capacity converts indirect export readiness into direct export readiness	Moderation among indirect exporters
P5	The environment conditions adoption (Tornatzky & Fleischer, 1990)	Three distinct moderating mechanisms	Separate moderators

P1. Attitudinal commitment increases operational export readiness only through organizational routinization, that is, when commitment is embedded in designated export roles, documented procedures, and auditable finances; without these, commitment remains merely a disposition.

P1 differs from Tan et al. (2007) in both outcome and mechanism: in their model, the outcome is the export decision, with commitment as its proximal cause, whereas P1 concerns the operational capacity to transact, which commitment influences only through routines. The proposition predicts a commitment–readiness gap among firms with comparable levels of commitment and no direct effect of commitment once routinization is controlled for. P1 also extends the commitment–learning link of Johanson and Vahlne (2009): lacking export experience, MSMEs need to codify knowledge into routines before transactions can be repeated.

P2. Lateral rigidity weakens the conversion of stimuli into commitment and routines, thereby reducing readiness even when stimuli and resources are available (Tambunan, 2009).

P3a. For MSMEs that have not yet exported directly, digital capability complements organizational capability for firm-specific tasks (costing, documentation, quality assurance, and payment risk) and increases readiness only when realized absorptive capacity exploits the information it generates.

P3b. Digital capability substitutes for organizational capability only for tasks that platforms perform in a standardized form (e.g., integrated payment or logistics in cross-border e-commerce), thereby producing channel-bound rather than transferable readiness.

The determining factor is the task, not the technology: substitution requires standardized tasks embedded in third-party infrastructure and small, repetitive transactions; under these conditions, digital capability primarily reduces transaction costs (Du & Huang, 2025; Denicolai et

al., 2021). This substitution shifts routines to the platform, a form of dependence analogous to lateral rigidity.

P4. Among indirect exporters, exposure to foreign buyers through intermediaries builds readiness only to the extent that realized absorptive capacity is converted into process knowledge (Fransen & Helmsing, 2017; Rakthin et al., 2024).

P5. Environmental factors moderate the capability-readiness relationship: (a) stricter buyer requirements and regulations raise the required level of capability; (b) weak logistics limit the attainable level of readiness; and (c) support ecosystems can partially compensate for weak capabilities but build sustainable readiness only when used to develop internal routines.

Formative Measurement

The indicators in Table 4 are formative (Diamantopoulos & Winklhofer, 2001): they form rather than reflect their constructs (e.g., a designated export officer and documented SOPs constitute organizational capability); they are not interchangeable; and they need not covary, since a micro-enterprise may keep auditable books without SOPs. Commitment and lateral rigidity are partly perceptual and may therefore be reflective at the first order (Tan et al., 2018) and formative at the second order. Index construction therefore requires comprehensive content specification through interviews with experts and business owners; no item purification based on alpha values or factor loadings; collinearity checks; external validation through global reflective items or a MIMIC model; and explicit weighting, namely equal weights for diagnostic purposes and estimated weights for hypothesis testing.

Table 4. Candidate formative indicators

Construct	Candidate formative indicators	Supporting references
Export stimuli	unsolicited inquiries from abroad; export ambition; exposure to trade fairs	Leonidou (1998); Revindo & Gan (2016)
Attitudinal commitment	resources dedicated specifically to exporting; written export targets; risk acceptance	Tan et al. (2007)
Firm resources	idle production capacity; export working capital; export-skilled staff	Tan et al. (2007); Ardiyanti & Kahfi (2023)
Lateral rigidity	limited perception of stimuli; narrow information search; dependence on a single intermediary	Tan et al. (2007, 2018); Tambunan (2009)
Organizational capability	designated export officer; documented SOPs; auditable finances; documented use of buyer feedback (realized AC)	Helfat & Peteraf (2003); Cohen & Levinthal (1990)
Digital capability	verified product data; market analytics (potential AC); digital communication with buyers	Pingali et al. (2023); Maycotte et al. (2025)
Environmental enablers	knowledge of buyer requirements; logistics access; use of export support	Tornatzky & Fleischer (1990); Revindo et al. (2019)
Operational export readiness	financial readiness; trade and exchange readiness; marketing readiness	Gerschewski et al. (2020)

CONCLUSIONS

This review extends the Tan et al. (2007) model by linking capability layers through absorptive capacity and conditioning them with environmental factors. Stimuli, commitment, and

resources jointly move MSMEs toward exporting, while lateral rigidity, manifested as dependence on intermediaries, slows every transition (RQ1); routinization converts commitment into readiness, and digital capability adds value when realized absorptive capacity exploits it (RQ2); and the most consistent gaps are internal, namely export knowledge, standardized processes, and organizational readiness to adopt digital technologies (RQ3). Export assistance should therefore build routines first, before platform onboarding or the adoption of artificial intelligence (AI) (Rahayu & Day, 2017).

LIMITATIONS & FURTHER RESEARCH

The model is offered as a diagnostic tool for participatory needs assessment in groups of non-exporting MSMEs, not as a predictive model of export success, pending empirical validation of the propositions. Future research should develop and test the formative index, validate P1–P5 through case studies, replicate this review in accordance with PRISMA, and compare direct, indirect, and platform-based export pathways over time.

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