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Review Article

Export Readiness in Farmer Producer Organizations: A Structured Integrative Literature Review of Core Capability Dimensions

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Abstract

Farmer Producer Organizations (FPOs) are increasingly expected to facilitate smallholder participation in higher-value international markets, yet the capabilities associated with export readiness remain fragmented across international business, agricultural, organizational, institutional, and value-chain research. This study integrates these dispersed bodies of evidence to develop a multidimensional conceptual understanding of export readiness in FPOs. A structured integrative literature review was undertaken using seven theory-informed search streams for literature identification, followed by inductive cross-stream synthesis to consolidate recurring concepts into higher-order capability domains. Literature identification was completed on May 31, 2026, using Google Scholar, Semantic Scholar, Elicit, Research Rabbit, backward and forward citation tracking, and targeted institutional and policy searches. Of 466 records identified, 40 duplicate or alternate records were consolidated, leaving 426 unique studies for screening; 278 studies underwent detailed review, and 118 core studies constituted the final synthesis. Evidence was systematically extracted, qualitatively appraised, compared across literature streams, and conceptually consolidated. The synthesis identified five domains of export readiness: Financial Capability, Product Readiness and Compliance, Organizational and Managerial Capability, Institutional Support, and Value Chain Integration and Market Linkages. The findings indicate that FPO export readiness is best understood as a multidimensional condition shaped by internal organizational capabilities and external enabling mechanisms rather than as a single or sequential pathway. FPO- and producer-organization studies provided direct contextual evidence, while broader SME and exporter studies informed transferable enterprise-level mechanisms and were interpreted cautiously in the FPO context. Internationalization theory, the capability perspective, and collective-action theory provide complementary lenses for interpreting the identified domains. The proposed domains represent literature-derived conceptual propositions rather than empirically validated dimensions of an export-readiness model; their relative importance, indicators, and interrelationships may vary across commodities, destination markets, regulatory and certification regimes, market channels, and FPO characteristics. The review provides a transparent and theoretically grounded foundation for the development and empirical validation of context-sensitive approaches to assessing export readiness in FPOs.

Categories: Value chain, Sustainable Economic Development, Trade and economic development

Keywords: export readiness, farmer producer organizations, firm internationalization, value chain integration, agricultural exports, agricultural commercialization, integrative literature review, organizational capability

Introduction And Background

Participation in international markets offers organizations the opportunity to expand their market reach, diversify their revenue sources, enhance their competitiveness, and achieve long-term growth. However, successful export participation depends on more than just production capability. Organizations seeking to enter and sustain a presence in foreign

markets must develop the financial, organizational, managerial, and market-related capabilities necessary to meet increasingly complex international requirements (Cavusgil, 1980) (Leonidou et al., 1998) (Knight and Cavusgil, 2004). These requirements are commonly discussed in the literature under the broader concept of export readiness.

Export readiness has received considerable attention in international business and export management research. Existing studies suggest that organizations are more likely to succeed in export markets when they possess adequate resources, managerial commitment, market knowledge, financial capacity, and organizational preparedness (Leonidou et al., 1998) (Leonidou, 2004) (Sousa et al., 2008) (Tan et al., 2018). Consequently, export readiness is increasingly viewed as a multidimensional construct that reflects an organization's preparedness to engage effectively in international markets. Recent studies have further examined export preparedness through internationalization-readiness, export-potential, innovation-readiness, and export-oriented small-enterprise frameworks (Magni et al., 2021) (Singh et al., 2024) (Chaldun et al., 2024) (Kırkın et al., 2024).

The importance of export readiness has become particularly evident in the agricultural and agri-food sectors. Global agricultural trade has exceeded USD 2 trillion in recent years, creating significant opportunities for producers in developing economies to participate in higher-value international markets (World Trade Organization, 2024) (Food and Agriculture Organization, 2022a). Simultaneously, agricultural exports are subject to increasingly stringent requirements relating to food safety, traceability, certification, quality assurance, sustainability, and regulatory compliance (Henson and Jaffee, 2008) (Henson and Humphrey, 2010) (Maertens and Swinnen, 2009). These developments have increased the capability requirements necessary for successful export participation and created new challenges for agricultural producer organizations seeking access to international markets to meet these requirements.

Despite the expansion of global agricultural trade, participation in international markets remains challenging for many smallholder agricultural organizations. Limited access to finance, compliance capabilities, certification systems, managerial expertise, and market linkages often restrict their ability to benefit from export opportunities. These challenges are particularly relevant for Farmer Producer Organizations (FPOs), which are increasingly expected to facilitate the integration of smallholder farmers into higher-value domestic and international markets.

In India, FPOs have emerged as an important institutional mechanism for improving the market participation of small and marginal farmers. Through aggregation, collective action, improved bargaining power, and enhanced access to services, FPOs are expected to strengthen agricultural commercialization and market integration in India. FPO-specific studies further highlight their role in farmer empowerment and examine organizational, institutional, and market-related aspects influencing the functioning and performance of producer organizations (Khan et al., 2020) (Balasubramanian et al., 2024). Recognizing their strategic importance, the Government of India has launched initiatives to support the formation and promotion of 10,000 FPOs across the country (Ministry of Agriculture and Farmers Welfare, 2020). Despite these efforts, many FPOs continue to face challenges related to finance, quality management, certification, governance, market access, and value chain integration, limiting their ability to participate effectively in export markets (Trebbin, 2014) (Bijman et al., 2016) (National Bank for Agriculture and Rural Development, 2019).

Against this background, understanding export readiness in FPOs requires consideration of capabilities extending beyond production and marketing to include finance, compliance, organizational and managerial capacity, institutional support, and market linkages. The specific gaps in the existing literature that motivate the present review are discussed in the following section.

Research gap

Although export readiness has been examined extensively in international business, export management, and SME research, the relevant evidence remains distributed across studies addressing financial resources, managerial capability, product compliance, institutional support, internationalization, and market integration (Leonidou et al., 1998) (Knight and Cavusgil, 2004) (Sousa et al., 2008) (Henson and Jaffee, 2008). These streams provide valuable insights into the factors associated with export participation; however, relatively little attention has been paid to their integration within a multidimensional understanding of export readiness.

A further gap concerns the context of FPOs. Existing FPO research has largely examined collective action, governance, agricultural commercialization, market access, value chain participation, and farmer outcomes (Hellin et al., 2009) (Trebbin, 2014) (Bijman et al., 2016). Recent reviews have extended this literature by examining FPO adoption and success, broader producer-organization research trends, and the status, challenges, and emerging themes of FPO research (Roy Chowdhury et al., 2024) (Bhunia and Singh, 2025) (Patil et al., 2025). However, these reviews do not specifically integrate the financial, product, compliance, organizational, managerial, institutional, and value chain requirements associated with FPO preparedness for international market participation.

Accordingly, this review addresses a distinct gap by integrating FPO-specific evidence with transferable insights from SME, exporter, agri-food, and international business research to identify and conceptually organize the domains relevant to FPO export readiness. In doing so, it extends the existing FPO review literature from broader questions of organizational performance, sustainability, market access, and producer outcomes toward the specific issue of preparedness for international market participation. The resulting synthesis provides a conceptual foundation for subsequent operationalization and empirical validation.

Research objective

The objective of this study is to systematically review and synthesize the literature relevant to export readiness in FPOs and identify the core domains of export readiness emerging from the reviewed evidence. By integrating evidence from multiple literature streams, this study seeks to develop a multidimensional understanding of export readiness and provide a structured foundation for future export-readiness assessment, framework development, and research within the context of FPOs.

Research questions

To achieve the study objective, the following research questions were addressed:

RQ1: What factors associated with export readiness are identified in the literature relevant to FPOs?

RQ2: How can export readiness in FPOs be understood from a multidimensional capability perspective?

RQ3: What core domains of export readiness emerge from the synthesis of the reviewed literature?

Theoretical foundations

This review is informed by three complementary theoretical perspectives: internationalization theory, the capability perspective, and collective action theory. From the capability perspective, resource-based and dynamic capability approaches provide related but distinct explanations of organizational preparedness. These perspectives are used as interpretive lenses for understanding the domains emerging from the literature synthesis, rather than as predetermined categories from which the domains were deductively derived.

Internationalization theory explains foreign market participation as a process through which organizations develop knowledge, experience, adaptability, and relationships that support engagement in international markets (Johanson and Vahlne, 1977) (Cavusgil, 1980). Subsequent research has shown that firms may follow different internationalization trajectories, including gradual, entrepreneurial, and early internationalization pathways, while established process models have also been critically examined and extended (Hadjikhani, 1997) (Andersson, 2000) (Moen and Servais, 2002) (Oviatt and McDougall, 2005). From this perspective, export readiness involves preparedness for learning, adaptation to foreign market requirements, development of export knowledge, and establishment of relationships with buyers and other market actors. Internationalization theory is therefore particularly relevant to Organizational and Managerial Capability, Product Readiness and Compliance, and Value Chain Integration and Market Linkages. Financial Capability also supports the resource commitments required for export preparation and market participation.

The capability perspective explains how organizations acquire, mobilize, coordinate, and adapt resources to support export preparedness. Resource-based theory emphasizes the importance of organizational resources and competencies, whereas dynamic capability theory places greater emphasis on the ability to integrate, reconfigure, and adapt those

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resources in response to changing market and environmental conditions (Barney, 1991) (Teece et al., 1997) (Eisenhardt and Martin, 2000). This distinction is particularly relevant to export readiness because participation in international markets requires both an adequate resource base and the ability to modify organizational routines, knowledge, products, and relationships as external requirements evolve. The capability perspective therefore informs Financial Capability through resource mobilization and financial management; Product Readiness and Compliance through quality, certification, traceability, and regulatory adaptation; Organizational and Managerial Capability through governance, coordination, learning, managerial competence, and resource deployment; and Value Chain Integration and Market Linkages through relational and market engagement capabilities.

Collective action theory provides an FPO-specific organizational perspective through which these broader internationalization and capability mechanisms are interpreted. FPOs depend on aggregation, member participation, collective decision-making, governance, coordination, and joint market participation (Ostrom, 1990) (Trebbin, 2014). FPO-specific research also highlights the importance of factors influencing farmers' participation in producer organizations (Gurung and Choubey, 2022). This perspective is particularly relevant to Organizational and Managerial Capability through governance and member coordination, Value Chain Integration and Market Linkages through aggregation and collective marketing, and Institutional Support through relationships with external support organizations. It also provides context for Financial Capability and Product Readiness and Compliance because resource mobilization, product consistency, traceability, and compliance may depend on coordinated action across participating members.

Taken together, these perspectives operate at complementary analytical levels. Internationalization theory explains learning, adaptation, and relationship development associated with foreign market participation. Resource-based and dynamic capability perspectives explain the possession, deployment, and adaptation of organizational resources and competencies. Collective action theory explains how these processes are shaped by the member-based and coordinated structure of FPOs. The resulting five-domain structure combines organizational capabilities with an external enabling condition. Financial Capability, Product Readiness and Compliance, Organizational and Managerial Capability, and Value Chain Integration and Market Linkages primarily represent capabilities that FPOs develop, mobilize, or coordinate. Institutional Support differs conceptually because it represents an external enabling domain whose contribution depends partly on an FPO's ability to access and utilize available financial, technical, informational, and market support. The five domains are thus interpreted as a literature-derived conceptual structure of export readiness rather than as direct constructs of a single theory or as empirically validated relationships.

Review

This study adopted a structured integrative literature review to examine export readiness in FPOs. An integrative approach was appropriate because export readiness draws on multiple bodies of literature, including international business, export management, agricultural commercialization, producer organizations, institutional development, and value-chain research.

The review comprised structured literature identification, study screening, data extraction, evidence appraisal, and cross-stream synthesis. Evidence from the selected studies was compared across literature streams to identify recurring concepts and consolidate them into higher-order capability domains.

Literature search strategy

A structured literature search was undertaken to identify evidence relevant to export readiness in FPOs. Given the multidisciplinary nature of the topic, the literature identification covered international business, export management, agricultural commercialization, producer organizations, institutional support, and value chain research.

Google Scholar and Semantic Scholar were the primary search platforms. They were supplemented by Elicit, Research Rabbit, backward and forward citation tracking, and targeted institutional and policy searches. Google Scholar and Semantic Scholar were used for keyword, phrase, and Boolean searches across a multidisciplinary evidence base. Elicit

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supported question-based literature discovery, while Research Rabbit facilitated citation network exploration around relevant seed publications. Targeted searches were used to identify institutional, policy, and sector-specific sources that were not consistently represented in scholarly search platforms. The researcher performed eligibility assessment, study selection, data extraction, evidence appraisal, and synthesis.

Searches were conducted during May 2026, with May 31, 2026, as the literature-identification cut-off. The primary publication period was 2010 to 2026, while seminal pre-2010 studies were retained where required for theoretical or conceptual grounding. The search process combined Boolean and phrase searches, keyword searches, question-based discovery, citation-network expansion, backward and forward citation tracking, and targeted institutional searches.

Literature identification was organized into seven thematic search streams: (1) Export Readiness and Internationalization, (2) Financial Capability and Export Finance, (3) Product Readiness and Compliance, (4) Organizational and Managerial Capability, (5) Institutional Support and Export Promotion, (6) FPOs and Collective Action, and (7) Value Chain Integration and Market Linkages. These streams were used to structure the literature identification and evidence organization. They did not constitute predetermined analytical categories, and the final capability domains were developed through cross-stream synthesis. The purposes of the search stream are summarized in Table *1*.

Scopus and Web of Science were not used as primary bibliographic databases. Instead, the review adopted a multidisciplinary search strategy designed to capture literature distributed across international business, management, agriculture, producer-organization, value-chain, and institutional research. Coverage was broadened through two scholarly search platforms, citation-based discovery, backward and forward citation tracking, and supplementary academic, institutional, and policy searches. This approach supported the integrative purpose of the review but did not eliminate the possibility that relevant studies indexed elsewhere were missed. The implications of this database coverage are acknowledged in the limitations of the review.

Search Stream	Purpose
Export Readiness and Internationalization	To identify conceptual, theoretical, and empirical studies related to export participation, internationalization processes, and export readiness.
Financial Capability and Export Finance	To identify evidence relating to access to finance, working capital, trade finance, and financial constraints affecting export participation.
Product Readiness and Compliance	To identify studies addressing standards, certification, quality assurance, traceability, food safety, and regulatory compliance requirements.
Organizational and Managerial Capability	To identify literature relating to governance, leadership, managerial competence, organizational learning, and capability development.
Institutional Support and Export Promotion	To identify studies examining export promotion, technical assistance, market intelligence, policy support, and institutional interventions.
Farmer Producer Organizations and Collective Action	To identify literature relating to Farmer Producer Organizations, collective enterprises, agricultural commercialization, and producer coordination mechanisms.

Value Chain Integration and Market Linkages	To identify studies examining buyer relationships, value chain participation, market access, supply chain coordination, and commercial integration.

TABLE 1: Thematic Search Streams Used for Literature Identification

Source: Developed by the author for this study.

Ninety documented searches were conducted across seven search streams. Query-level retrieval counts were retained for 81 searches, representing 442 records, while further 24 records were retained at the stream level from supplementary literature-identification activities, yielding 466 identified records. Separate retrieval counts were not retained for nine searches and were not retrospectively reconstructed. Appendix A provides the complete source- and tool-level search log, including the search platform or tool used, search type, exact search string, question or seed, search purpose, search period, recorded retrieval counts where available, and reconciliation of the identified records. Detailed screening and study-selection procedures are reported in Appendix B. Study-level search and review records are publicly available in the Zenodo dataset (Pachaghare and Vishwakarma, 2026).

Study screening and selection

Following literature identification, the 466 retrieved records underwent a structured screening and selection process comprising duplicate consolidation, relevance appraisal, detailed review, and final core study selection. Eligibility and progression decisions considered topical relevance, conceptual alignment with export readiness, theoretical or empirical contribution, contextual relevance, and usefulness for the review objectives.

Forty duplicate or alternate records were consolidated, leaving 426 unique studies for the appraisal. Using the three-level relevance rubric described in Appendix B, 239 studies were classified as highly relevant, 155 as moderately relevant, and 32 as having low or peripheral relevance. All 239 high-relevance studies were subjected to a detailed review. Of the 155 moderate-relevance studies, 39 were retained for a detailed review because of their direct thematic fit and contribution to the synthesis, while 116 were retained as contextual or background evidence. The 32 studies classified as having low or peripheral relevance were not subjected to a detailed review. Accordingly, 278 studies were assessed in detail.

The 278 studies retained for detailed review were examined for the directness and substantive relevance of their theoretical, empirical, and contextual contributions to export readiness and capability development. This stage distinguished the studies that formed the core evidence base for capability-domain development from those that remained relevant in supporting or background roles. Studies whose contributions were indirect, substantially overlapping with stronger evidence, primarily contextual, or less central to capability-domain development were retained as supporting or background evidence. This resulted in 160 supporting or background studies and 118 studies that provided the most direct and substantive evidence for the final cross-stream synthesis.

Selection of the 118 core studies was guided by four criteria: relevance to export readiness, theoretical contribution, empirical or contextual relevance, and usefulness for cross-stream synthesis. The 118 studies therefore represent the analytical core of the synthesis rather than the entirety of the literature considered in the review. The remaining 160 detailed-review studies were not treated as irrelevant or excluded from consideration; they provided supporting, contextual, or corroborative evidence where appropriate. The four core-selection criteria are summarized in Table *2*, while detailed eligibility and non-progression criteria, the relevance-appraisal rubric, and screening outcomes are provided in Appendix B. Study-level screening decisions and review-flow records are publicly available in the Zenodo dataset (Pachaghare and Vishwakarma, 2026). The overall study-identification and selection process is summarized in Figure *1*.

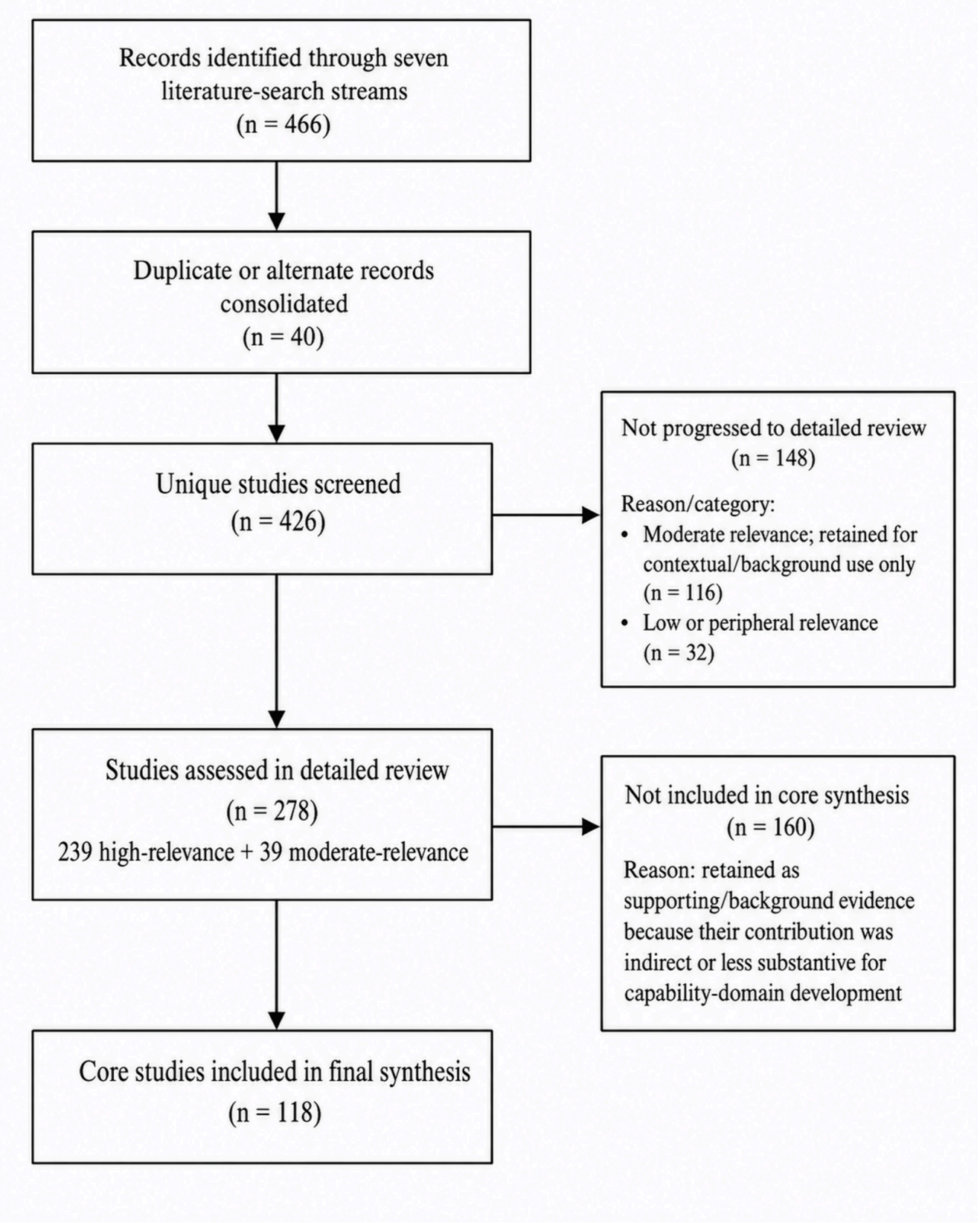

FIGURE 1: Literature Selection Process

Note. Detailed eligibility, exclusion, and relevance-appraisal criteria are presented in Appendix B.
Source: Authors' compilation based on the literature screening and study-selection records.

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Criterion	Purpose
Relevance to Export Readiness	Alignment with the objectives and research questions of the review
Theoretical Contribution	Contribution to the conceptual understanding of export readiness and capability development
Empirical or Contextual Relevance	Relevance to export participation, agricultural organizations, producer collectives, or comparable organizational contexts
Usefulness for Cross-Stream Synthesis	Contribution to capability-domain development, integration of evidence, and comparative analysis across literature streams

TABLE 2: Criteria Used for Selection of Studies Included in Final Synthesis

Source: Developed by the author for the present study.

The 118 core studies formed the primary evidence base for data extraction, evidence appraisal, cross-stream synthesis, and capability-domain development.

Data extraction and organization of evidence

Following study selection, data were systematically extracted from the 118 core studies using structured data extraction templates developed for this review. The extraction process ensured consistency in the study evaluation, facilitated comparisons across publications, and maintained traceability between individual studies and the final synthesis.

The extraction process captured both bibliographic and analytical data. The bibliographic information included author(s), year of publication, title, source, publisher, and DOI or URL, where available. The analytical information included study objectives, research context, methodological approach, theoretical foundations, key findings, and relevance to export readiness. Attention was given to identify factors associated with export participation, organizational development, financial capability, compliance requirements, institutional support and market integration.

To facilitate a systematic analysis, the extracted studies were organized according to the search streams through which they were identified. Structured evidence tables were prepared to summarize the study characteristics, theoretical perspectives, methodological approaches, and principal findings. This process enabled a comparison of evidence within and across literature streams while preserving clear links to the original sources.

The structured extraction process serves two purposes. First, it enabled a detailed examination of individual studies and literature streams. Second, it provides a consistent evidence base for subsequent cross-stream synthesis. Structured extraction and documentation supported consistency, transparency, and study-level traceability throughout the synthesis process.

The categories of information extracted from the selected studies are listed in Table *3*.

Category	Information Extracted
Bibliographic Information	**Author, year, title, source, publisher, DOI/URL**

Study Characteristics	Objectives, context, sector, geographical focus
Methodological Information	Research design, sample, analytical approach
Theoretical Foundation	Theory or conceptual framework employed
Key Findings	Principal findings and conclusions
Export Readiness Relevance	Export-related capabilities, determinants, barriers, enablers, and implications

TABLE 3: Data Extraction Framework

Source: Developed by the author for the present study.

The information extracted through this process formed the foundation for the cross-stream synthesis and capability-domain development discussed in the subsequent sections.

The evidence base included peer-reviewed empirical studies, review studies, conceptual or theoretical papers, and institutional or policy reports. These source types were not treated as analytically equivalent. Peer-reviewed empirical studies provided the principal evidence on relationships, determinants, barriers, and enabling mechanisms, while review and conceptual studies supported evidence integration and theoretical interpretation. Institutional and policy sources were used mainly to provide regulatory, policy, programmatic, and sectoral context. Differences in organizational context were also considered: FPO and producer-organization studies provided direct contextual evidence, agricultural and agri-food studies provided sectorally relevant evidence, and SME, exporter, and firm-level studies informed transferable enterprise-level mechanisms. The analytical treatment of these evidence types and contexts is described in the Evidence Appraisal and Weighting section and Appendix C.

The study-level dataset supporting this review, including bibliographic information, screening decisions, search-stream classification, review-flow records, and synthesis-related data, has been deposited in Zenodo and is publicly available (Pachaghare and Vishwakarma, 2026).

Evidence appraisal and weighting

As the review incorporated heterogeneous evidence, including empirical studies, review articles, conceptual or theoretical papers, and institutional or policy reports, a single risk-of-bias instrument was not considered appropriate for all evidence types. Instead, evidence was appraised according to its methodological transparency, direct relevance to export readiness, source credibility, and analytical contribution to the synthesis.

Empirical studies were considered with reference to the clarity of the research design, sample or data description, analytical approach, and relevance of the reported findings. Review studies were considered based on the transparency of their evidence base and synthesis approach. Conceptual and theoretical studies were used primarily to support theoretical interpretation and explain capability relationships, while institutional and policy reports were used mainly to provide regulatory, institutional, policy, and sectoral contexts.

Evidence was not treated as contributing equally to all conclusions. Greater interpretive emphasis was placed on methodologically transparent empirical findings that were directly relevant to the capability under examination and were supported by convergence across multiple studies or contexts. Conceptual and institutional evidence was interpreted primarily in a supporting or contextual role, unless corroborated by empirical findings. No fixed numerical weighting was applied because of the methodological diversity of the included studies. The detailed evidence-appraisal and interpretive weighting framework is provided in Appendix C.

Cross-stream synthesis

Following data extraction and evidence appraisal, a cross-stream synthesis was conducted to identify recurring concepts, relationships, constraints and enabling factors associated with export readiness. The search streams served only as literature identification and evidence organization pathways and were not used as predetermined analytical categories.

The synthesis began by identifying descriptive concepts from the findings of the 118 core studies using terminology close to that reported in the source's literature. Related concepts were then compared and normalized to reduce the differences in terminology across the studies. For example, credit availability, liquidity, working capital, and trade finance were examined collectively as finance-related concepts, whereas certification, standards, food safety, quality assurance, and traceability were examined as product- and compliance-related concepts.

The normalized concepts were compared within and across the search streams to identify convergence, overlap, and complementarity. Individual studies were not restricted analytically to the stream through which they were identified and could contribute to more than one emerging capability area. No fixed numerical frequency thresholds were applied. Concepts were retained if they demonstrated conceptual coherence, direct relevance to export readiness, and support across the evidence base. The detailed coding and synthesis procedure is presented in Appendix C.

Development of capability domains

The final stage involved consolidating the refined concept categories into higher-order capability domains. Categories were assessed for conceptual similarity, analytical distinctiveness, relevance to export readiness, and applicability to FPOs.

This process resulted in five domains: Financial Capability, Product Readiness and Compliance, Organizational and Managerial Capability, Institutional Support, and Value Chain Integration and Market Linkages. The relationship between the seven search streams and the five final domains was not linear. The Export Readiness and Internationalization stream represented the overarching phenomenon and contributed evidence across several domains, while the FPOs and Collective Action stream provided the organizational and contextual basis for interpretation rather than forming a separate capability domain.

The five domains were retained based on conceptual coherence, analytical distinctiveness, relevance to export readiness, applicability to FPOs, and support across the wider evidence base. Appendix C provides detailed synthesis stages, illustrative concept-to-domain mapping, and the relationship between the search streams and final capability domains.

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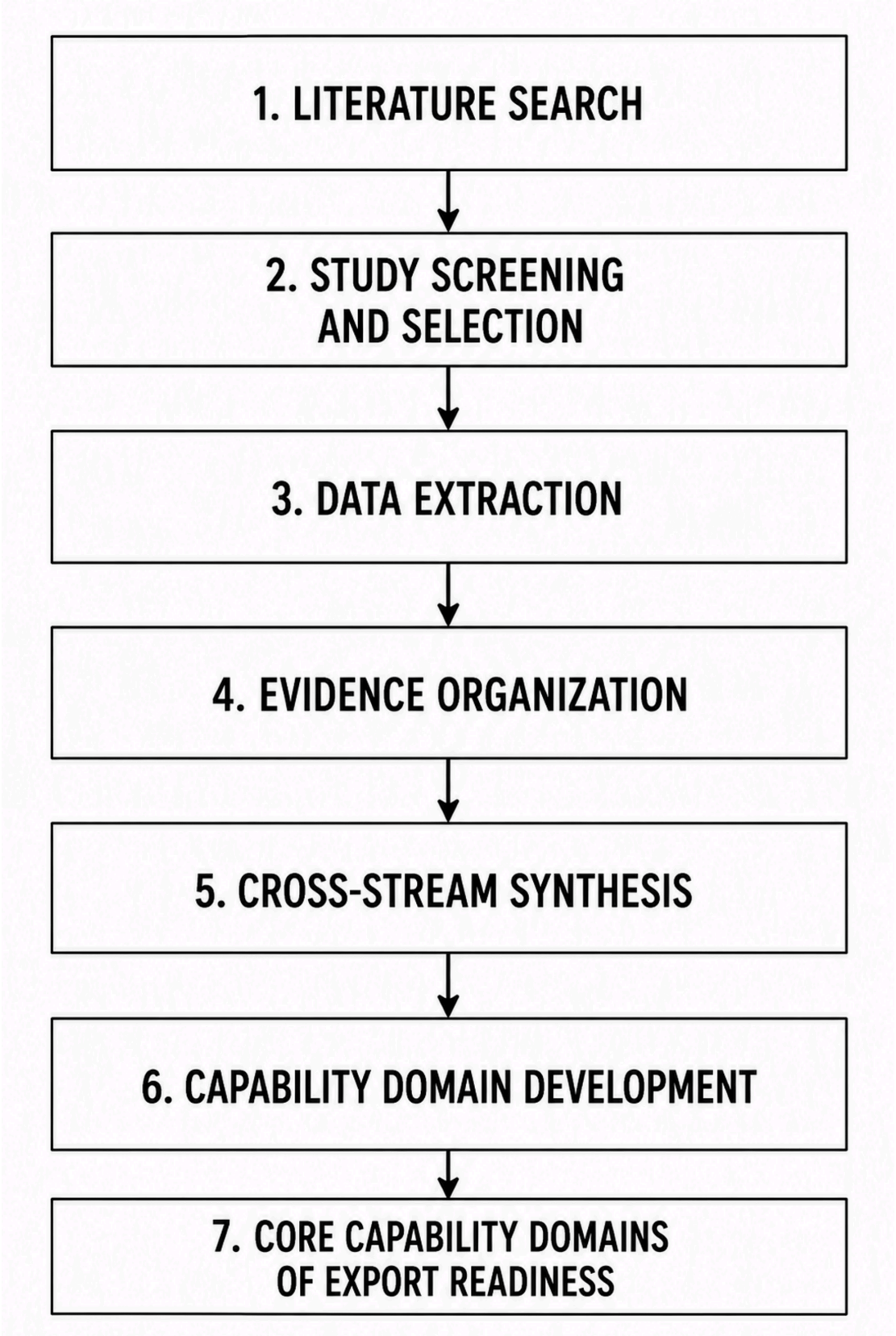

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FIGURE 2: Literature Synthesis and Conceptual Capability Domain Development Process

Note. The figure represents an author-developed conceptual synthesis illustrating the analytical process through which the five proposed capability domains were derived from the reviewed literature. It does not represent an empirically validated framework or measurement model.
Source: Developed by the authors based on the literature synthesis undertaken in this review.

The resulting five-domain structure is therefore presented as a literature-derived conceptual framework whose dimensionality, measurement properties, relative importance, and interrelationships require empirical examination within FPOs.

Capability domains of export readiness

The cross-stream synthesis resulted in five proposed domains for understanding export readiness in FPOs: Financial Capability, Product Readiness and Compliance, Organizational and Managerial Capability, Institutional Support, and Value Chain Integration and Market Linkages. These domains represent recurring higher-order patterns identified across the reviewed literature rather than empirically validated dimensions of an established measurement model.

The term capability domain is used as an umbrella analytical term. Four domains, Financial Capability, Product Readiness and Compliance, Organizational and Managerial Capability, and Value Chain Integration and Market Linkages, primarily concern capabilities that FPOs develop, mobilize, or coordinate in preparing for international market participation. Institutional Support is conceptually distinct because it represents an external enabling domain through which policy, financial, technical, informational, and market support mechanisms may facilitate capability development and export preparedness.

The theoretical perspectives discussed in the Theoretical Foundations section provide complementary interpretations of these domains. Internationalization theory informs learning, adaptation, export knowledge, and market relationships. Resource-based and dynamic capability perspectives explain the mobilization, deployment, and adaptation of organizational resources and routines. Collective action theory provides an FPO-specific interpretation of governance, member participation, aggregation, and collective coordination. Individual domains may therefore draw on more than one theoretical perspective.

Evidence supporting the proposed domains also originates from different organizational contexts. FPO and producer organization studies provide the most direct contextual evidence on collective governance, member participation, aggregation, coordination, institutional relationships, and market participation. Agricultural and agri-food studies provide sector-specific evidence on commercialization, compliance, standards, and value chain participation. SME, exporter, and firm-level studies contribute evidence on transferable mechanisms such as finance, managerial capability, export knowledge, compliance investment, market intelligence, and buyer relationships. These broader findings should be interpreted cautiously in light of the distinctive organizational characteristics of FPOs. The following sections examine the evidence supporting each proposed domain and its potential relevance to the export preparedness of FPOs. To make the evidentiary basis explicit at the domain level, Table *4* distinguishes direct FPO and producer-organization contextual evidence from transferable evidence drawn from broader agri-food, SME, exporter, and firm-level studies.

Financial Capability

Financial capability is widely recognized as an important factor associated with export participation and international market expansion. Exporting requires investment in production, certification, product adaptation, market development, logistics, inventory management, and compliance activities. Organizations with stronger financial resources and greater access to external finance are generally better positioned to meet these requirements and participate in international markets (Greenaway et al., 2007) (Berman and Héricourt, 2010) (Manova, 2013) (Muûls, 2015). More recent evidence similarly indicates that access to finance and the severity of financial constraints are associated with firms' export participation across different organizational and institutional settings (Wagner, 2019) (Pietrovito and Pozzolo, 2021) (Phan et al., 2022) (Zhao et al., 2026).

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A substantial body of research has examined the relationship between financial constraints and export behavior. Credit-constrained firms are generally less able to absorb the fixed and recurring costs associated with entering and operating in foreign markets (Greenaway et al., 2007) (Manova, 2013) (Manova et al., 2015). Evidence synthesized across firm-level studies likewise identifies access to credit as an important factor associated with export participation, particularly among smaller enterprises (Wagner, 2016). In emerging and developing economies, limited access to formal finance can constrain investment in market research, product development, quality improvement, and other activities required for internationalization (Pietrovito and Pozzolo, 2021) (Phan et al., 2022).

Working capital is particularly important because export transactions frequently involve longer payment cycles, inventory-holding requirements, transportation costs, and greater commercial uncertainty. Adequate liquidity helps firms finance these requirements and absorb delays in payment realization. Studies of exporters indicate that working-capital management and financial flexibility are relevant to export activity and continuity (Seth et al., 2020) (Mansilla-Fernández and Milgram-Baleix, 2023). Finance has also been examined in conjunction with innovation and other firm-level capabilities in relation to export entry and continuation (Rossi et al., 2021).

Financial intermediation constitutes another important element of financial capability. Banking relationships can facilitate access to credit and are associated with export performance, particularly among smaller firms facing information and collateral constraints (Lundberg, 2019). Evidence from the Indian SME context similarly links institutional credit with access to export markets (Raju and Thillai Rajan, 2019). Trade-finance instruments, including export credit, letters of credit, guarantees, and trade credit, can reduce transaction risks and facilitate international trade (Auboin and Engemann, 2014). Institutional sources from the World Trade Organization and International Finance Corporation provide complementary evidence on the importance of trade-finance availability, particularly for smaller enterprises and firms operating in emerging economies (World Trade Organization, 2024) (International Finance Corporation, 2023).

Financial capability is also relevant to the development of complementary export-related capabilities because participation in international markets may require investment in quality systems, certification, technology, infrastructure, market intelligence, and buyer engagement (Manova, 2013) (Manova et al., 2015). Recent evidence suggests that the relevance of access to finance for export progression may vary according to firm characteristics and context (Almeer and Nawaz, 2025) (Zhao et al., 2026).

Much of the export-finance evidence originates from firms, SMEs, and conventional exporters rather than FPOs. Its relevance to FPOs lies primarily in the transferability of mechanisms such as liquidity, working capital, institutional credit, investment capacity, banking relationships, and the ability to manage extended transaction cycles. However, these mechanisms may operate differently in FPOs because of member-based ownership, collective decision-making, aggregation of produce from multiple farmers, and potentially different collateral and financing arrangements. Broader firm-level evidence is therefore used to identify general financial mechanisms associated with export participation, while FPO-specific evidence is used to interpret their relevance within collective producer enterprises.

Recent FPO-specific research has directly examined the financial performance of FPOs and Farmer Producer Companies in India (Kakati and Roy, 2022) (Bharti and Kumari, 2025). This evidence reinforces the relevance of financial performance and financial management within the FPO context, although these studies do not by themselves establish a direct relationship between financial capability and export readiness. For export participation, FPOs may additionally require resources for aggregation infrastructure, storage, testing, certification, packaging, traceability systems, logistics, and extended transaction cycles. Development and policy reports provide complementary contextual evidence that access to affordable and timely finance remains an important constraint on the commercialization and market orientation of producer organizations (World Bank, 2020) (Food and Agriculture Organization, 2022a).

Taken together, the evidence identifies access to finance, liquidity, working capital, trade finance, institutional credit, banking relationships, and investment capacity as important financial mechanisms relevant to export preparedness.

Product Readiness and Compliance

Product readiness and compliance constitute an important component of export preparedness, particularly in agricultural and food-based value chains. Participation in international markets requires organizations to meet applicable regulatory, technical, quality, certification, and buyer-specific requirements in addition to possessing adequate production capacity and market opportunities. Research has documented relationships between product standards, compliance requirements, agricultural trade, firms' export decisions, and access to international markets (Henson and Jaffee, 2008) (Ferro et al., 2015) (Fernandes et al., 2019). More recent studies similarly associate standards with export participation, product quality, and upgrading in agri-food sectors (Fiankor et al., 2021) (Santeramo and Lamonaca, 2022) (Bemelmans et al., 2023) (Disdier et al., 2023). Institutional and policy sources provide complementary regulatory and sectoral context on standards compliance and agricultural market access (Food and Agriculture Organization, 2022b) (United Nations Conference on Trade and Development, 2019).

The regulatory framework for international agri-food trade includes the WTO Agreements on Sanitary and Phytosanitary Measures and Technical Barriers to Trade, which establish internationally recognized principles governing standards-related measures in international commerce (World Trade Organization, 1995a) (World Trade Organization, 1995b). Empirical research indicates that sanitary and phytosanitary requirements are associated with market entry and trade flows, particularly for agricultural exporters from developing and lower-income economies (Crivelli and Groeschl, 2016) (Murina and Nicita, 2017) (Thuong, 2018) (Santeramo and Lamonaca, 2022). Although these requirements may increase compliance costs, the literature also links them with quality improvement and product upgrading where exporters possess the capacity to respond effectively (Fiankor et al., 2021) (Disdier et al., 2023).

Food safety, quality assurance, and certification systems are therefore important components of product readiness. Maintaining consistent product quality and demonstrating conformity with recognized standards and certification systems are increasingly relevant to export competitiveness (Jaffee and Masakure, 2005) (Henson and Humphrey, 2010) (Goedhuys and Sleuwaegen, 2013). Evidence from the agri-food sector associates formal certification with market credibility and export participation when organizations possess the technical and organizational capacity required to maintain compliance (Fiankor et al., 2020) (Gichuki et al., 2020) (Yang et al., 2023). Research on ISO certification similarly links quality-management certification with export development and product upgrading in agri-food industries (Yang et al., 2023).

Certification and compliance requirements can nevertheless create substantial challenges for smaller and resource-constrained organizations. Meeting international standards may require investment in testing, documentation, infrastructure, production controls, audits, record keeping, and quality-management systems. Evidence from developing-country firms indicates that the benefits associated with international standards vary with institutional conditions and organizations' capacity to absorb compliance costs and translate certification into market opportunities (Goedhuys and Sleuwaegen, 2013) (Goedhuys and Sleuwaegen, 2016). Systematic evidence on agricultural certification similarly indicates that outcomes are context-dependent rather than uniformly beneficial across producers and markets (Oya et al., 2018).

Private standards and buyer-driven requirements constitute another component of product readiness. Beyond statutory regulation, exporters may face requirements imposed by retailers, processors, multinational buyers, certification bodies, and other value-chain actors. These requirements can extend to quality, food safety, sustainability, environmental practices, traceability, packaging, and production processes (Fulponi, 2007) (Ponte and Gibbon, 2005) (Beghin et al., 2015). Empirical research associates private standards with export opportunities and traded-product quality, particularly in food and agricultural sectors (Ehrich and Mangelsdorf, 2018) (Andersson, 2019) (Bemelmans et al., 2023). Evidence on GLOBALG.A.P. certification further illustrates the relevance of private standards to participation in international agri-food markets (Fiankor et al., 2020).

Traceability and supply-chain transparency are also important components of export preparedness. Regulators and buyers increasingly require information on product origin, production practices, handling, and movement through the supply chain (Regattieri et al., 2007) (Karlsen et al., 2013) (Bosona and Gebresenbet, 2013) (Dabbene et al., 2014).

Traceability systems support quality assurance and the demonstration of continued conformity with regulatory and buyer requirements. In agricultural export systems, traceability therefore complements product testing, certification, and documentation rather than functioning as an isolated technical requirement.

Standards and compliance requirements are relevant before and after market entry. Organizations must assess whether they can meet destination-specific standards, absorb compliance costs, maintain required documentation, and sustain quality-control systems over time (Mangelsdorf et al., 2012) (Ferro et al., 2015) (Fernandes et al., 2019). Certification decisions may similarly depend on expected market benefits and the organization's capacity to maintain compliance after certification has been obtained (Ragasa et al., 2017). Product readiness should therefore be understood as a continuing capability to meet and adapt to market requirements rather than as a one-time certification exercise.

Much of the evidence on product readiness and compliance originates from agri-food exporters, firms, and farming enterprises rather than directly from FPOs. Its relevance to FPOs therefore rests on transferable mechanisms such as quality control, certification, product testing, documentation, traceability, and compliance with regulatory and buyer-specific requirements. Direct FPO-specific evidence linking these mechanisms to export readiness remains limited.

For FPOs, product readiness may be particularly demanding because output is aggregated from numerous smallholder farmers, increasing the complexity of maintaining consistency, traceability, quality control, and compliance. Export preparation may require coordinated systems for grading, testing, certification, documentation, packaging, and monitoring across the member base. Evidence from small farming enterprises also suggests that certification alone may not improve market access without complementary organizational and market arrangements (Gichuki et al., 2020). Overall, Product Readiness and Compliance is a context-dependent capability whose relevance may vary with product characteristics, destination-market requirements, regulatory regimes, certification systems, and buyer expectations.

Organizational and Managerial Capability

Organizational and managerial capabilities are important components of export preparedness. Financial resources, product quality, and market opportunities contribute to export potential, but their effective use also depends on an organization's ability to coordinate activities, make strategic decisions, manage resources, and respond to changing market conditions. The literature therefore associates export participation not only with resource availability but also with the organizational capabilities through which those resources are deployed (Barney, 1991) (Teece et al., 1997) (Knight and Cavusgil, 2004). Evidence synthesized across small-firm studies similarly supports the relevance of firm capabilities to export performance (Gupta and Chauhan, 2021).

Management-related factors have long been associated with export behaviour and internationalization decisions. Early studies identified managerial commitment, international orientation, strategic intent, and decision-maker characteristics as relevant to export initiation and expansion (Bilkey and Tesar, 1977) (Cavusgil, 1980) (Reid, 1981) (Leonidou et al., 1998) (Sousa et al., 2008). More recent research emphasizes leadership, managerial knowledge, opportunity identification, and the capacity to adapt organizational resources during internationalization (Mostafiz et al., 2019a) (Colovic, 2022) (Bianchi and Stoian, 2024) (Merín-Rodrigáñez et al., 2025).

Research grounded in resource-based and dynamic capability perspectives further emphasizes organizational learning and adaptability (Barney, 1991) (Teece et al., 1997) (Eisenhardt and Martin, 2000). Relevant capabilities include strategic planning, market sensing, foreign-market knowledge, learning, innovation, and relationship management (Knight and Cavusgil, 2004) (Zahra et al., 2006) (Haddoud et al., 2021) (Mudalige et al., 2019) (Mostafiz et al., 2019b). International knowledge may also develop through experience, networks, advisers, and interaction with foreign-market actors, thereby supporting decision-making under uncertainty (Johanson and Vahlne, 2009) (Forsgren, 2002) (Autio et al., 2000) (Stoian et al., 2018) (Calheiros-Lobo et al., 2023).

Governance and internal coordination constitute another component of organizational readiness. Clear roles, accountability mechanisms, structured decision-making, and effective coordination support export-related activities across production, quality management, finance, logistics, and marketing (Morgan et al., 2004) (Zou and Stan, 1998)

(Katsikeas et al., 2000). More recent studies similarly identify the relevance of relational and corporate governance to export behaviour and internationalization (Ju and Gao, 2017) (Lukason and Vissak, 2020) (Pongelli et al., 2023) (Wen et al., 2023).

Innovation and collaborative capabilities are also relevant to preparedness for international markets. Firms with stronger innovation capabilities are generally better positioned to identify opportunities and adapt to foreign-market requirements, and such capabilities have been associated with export performance (Knight and Cavusgil, 2004) (Love and Roper, 2015) (Gkypali et al., 2021). Organizational entrepreneurship and alliance-management capabilities may also support internationalization through learning, innovation, and access to complementary resources (Dung and Giang, 2021) (Zahoor et al., 2023) (Al-Tabbaa and Zahoor, 2024). Their relevance may nevertheless vary according to the institutional environment in which firms operate (Hernández et al., 2022).

Much of this evidence originates from conventional firms and SMEs rather than FPOs. Its relevance to FPOs lies in the transferability of mechanisms such as leadership, strategic decision-making, organizational learning, governance, coordination, innovation, and relationship management. These mechanisms may, however, operate differently in member-based organizations where responsibilities are distributed among members, boards, and professional managers.

FPO-specific studies reinforce the relevance of these organizational characteristics. Managerial competencies, social capital, professional management, and governance arrangements have been associated with the functioning and performance of producer organizations (Yanduri and Siddayya, 2024) (Pant et al., 2022) (Deka et al., 2020) (Rajak et al., 2026). Earlier research similarly highlights governance, collective coordination, and organizational capacity in relation to commercialization and participation in higher-value markets (Trebbin, 2014) (Hellin et al., 2009) (Bijman et al., 2016). Other FPO research has examined performance evaluation, organizational efficiency, and factors associated with FPO performance (Bharti and Kumari, 2024) (Muniyoor and Pandey, 2024) (Amitha et al., 2021).

Overall, the reviewed literature identifies governance quality, managerial competence, organizational learning, international orientation, innovation, and relationship-management capability as relevant components of organizational preparedness for export participation. Their specific contribution to export readiness within collective, member-based FPOs requires empirical validation.

Institutional support and export promotion

Institutional support represents an external enabling condition relevant to export readiness and international market participation. Unlike capabilities developed and mobilized within an organization, institutional support arises from the wider environment in which the organization operates. Government agencies, export promotion organizations, trade-support institutions, financial intermediaries, certification bodies, and market-development agencies can provide access to information, resources, technical assistance, and market opportunities (North, 1990) (Peng, 2003) (Leonidou et al., 2011) (Seringhaus and Rosson, 2026). Recent evidence also associates institutional support with international knowledge, competitive capabilities, and organizational performance, particularly in emerging and developing economies (Falahat et al., 2020) (Nakku et al., 2020) (Prasannath et al., 2024).

Export promotion programs constitute an important form of institutional support. Such programs commonly provide market intelligence, training, trade-fair participation, advisory services, buyer-seller networking, and other assistance intended to reduce the uncertainty and costs associated with international market entry (Coudounaris, 2018) (Gençtürk and Kotabe, 2001) (Wilkinson and Brouthers, 2006) (Leonidou et al., 2011). Empirical evidence associates export-promotion support with export market entry and international performance, although outcomes vary across firms, programs, and institutional contexts (Broocks and Van Biesebroeck, 2017) (Quaye et al., 2017) (Njinyah, 2018) (Malca et al., 2020) (Heriqbaldi et al., 2023).

The contribution of institutional assistance also varies according to the type and timing of support. Export-promotion programs may contribute to organizational capabilities, networks, knowledge, and risk-management practices in addition to facilitating market access (Haddoud et al., 2017) (Catanzaro and Teyssier, 2021). Government-support

mechanisms may operate differently at different stages of internationalization (Tinits and Fey, 2022), while comparative evidence indicates variation in export-promotion systems across advanced and emerging economies (Ribeiro et al., 2020). Technical assistance is particularly relevant in agricultural markets, where exporters may require support in interpreting phytosanitary, quality, and certification requirements (Fulano et al., 2021).

The contribution of institutional support depends on program design, institutional context, organizational needs, and the capacity of firms or FPOs to access and use the support provided (Comi and Resmini, 2020) (Kahiya, 2024) (Ranjan, 2024). Institutional and policy-oriented sources provide complementary context regarding trade facilitation, technical assistance, certification support, market information, financial linkages, infrastructure, and capacity development (United Nations Industrial Development Organization, 2013) (International Trade Centre, 2022) (World Bank, 2020) (Organisation for Economic Co-operation and Development, 2021) (World Trade Organization, 2024) (Food and Agriculture Organization, 2022a) (United Nations Conference on Trade and Development, 2019). In this review, these sources are used primarily to establish policy, regulatory, and sectoral context rather than as substitutes for peer-reviewed empirical evidence.

Institutional support is particularly relevant to FPOs because FPOs may face constraints related to managerial capacity, finance, technical expertise, compliance, and market connectivity. Direct FPO evidence highlights the role of institutional strengthening in supporting producer organizations and small-farmer empowerment (Lalitha et al., 2024). Earlier producer-organization research similarly emphasizes institutional relationships, collective support structures, and market-oriented organization in relation to commercialization and participation in higher-value markets (Trebbin, 2014) (Hellin et al., 2009) (Bijman et al., 2016). However, the specific contribution of these institutional mechanisms to FPO export readiness remains to be empirically established.

Overall, Institutional Support is retained as an external enabling domain because its contribution to export preparedness depends both on the availability of relevant support and on an FPO's capacity to access and use that support effectively.

Value Chain Integration and Market Linkages

Value chain integration and market linkages are important components of export preparedness, particularly in agricultural and agri-food sectors. In addition to production capacity and internal organizational capabilities, participation in international markets requires connections with buyers, coordination across supply chains, and engagement with value-adding market networks. Global value chain research emphasizes the relevance of an organization's position and relationships within networks of suppliers, processors, distributors, retailers, and buyers to competitiveness and market participation (Kaplinsky and Morris, 2001) (Humphrey and Schmitz, 2002) (Gereffi et al., 2005). More recent evidence similarly links global value chain participation and positioning with firm and sectoral outcomes (Epede and Wang, 2022) (Montalbano and Nenci, 2022) (Fernandes et al., 2022).

Market linkages provide an important mechanism through which organizations access commercial and export opportunities. Relationships with buyers, processors, exporters, retailers, and other market actors can facilitate information exchange, reduce market uncertainty, and improve access to product specifications and commercial opportunities (Markelova et al., 2009) (Hellin et al., 2009) (Bijman et al., 2016). Agricultural evidence also associates participation in coordinated and contractual market arrangements with producer access and market outcomes (Bellemare and Bloem, 2018) (Zhang et al., 2019).

Value chain participation may also contribute to organizational learning and upgrading. Interaction with buyers and other chain participants can provide access to information on product specifications, quality requirements, logistics, technology, and market practices (Humphrey and Schmitz, 2002) (Gereffi et al., 2005) (Gehl Sampath and Vallejo, 2018). Participation alone, however, does not necessarily result in upgrading. Outcomes vary according to organizational capabilities, chain governance, and the position occupied within the value chain (Krishnan et al., 2023). Changes in modern agri-food value chains have increased coordination among producers, processors, retailers, and other actors, creating both opportunities and additional capability requirements for smaller market participants (Lim, 2021) (Barrett et al., 2022). Recent preprint evidence also examines functional upgrading within global value chains (Stöllinger and Haraguchi, 2026).

Effective value chain integration is also associated with supporting conditions such as information systems, infrastructure, finance, and trade facilitation. Research highlights the relevance of information and communication technologies to supply-chain integration (Cragg and McNamara, 2018), while recent agricultural evidence links digital infrastructure, trade facilitation, and financial inclusion with participation in global agricultural and agri-food value chains (Zhang et al., 2025) (Steinbach and Zurita, 2025) (Wei et al., 2025).

Much of the global value chain evidence originates from firms, industries, and agricultural value chains rather than directly from FPOs. Its relevance to FPOs lies in transferable mechanisms such as aggregation, buyer connectivity, supply-chain coordination, information exchange, contractual relationships, and access to higher-value market channels. FPO-specific research also emphasizes the importance of developing producer organizations as viable business entities and sustaining their collective commercial functions (Deka et al., 2020) (Suresh and Sreejith, 2024). Earlier producer-organization research similarly highlights the relevance of collective marketing, coordination, and market relationships to smallholder access to remunerative markets (Markelova et al., 2009) (Hellin et al., 2009) (Trebbin, 2014) (Bijman et al., 2016). However, direct evidence linking these mechanisms specifically to FPO export readiness remains limited.

Within FPOs, value chain integration is particularly relevant because these organizations can serve as intermediaries between dispersed smallholder producers and commercial markets. Export preparation may require reliable aggregation, consistent quality, timely delivery, market information, and sustained relationships with processors, exporters, retailers, and other downstream actors. Export assistance may also improve firms' understanding of global value chains and international market opportunities (Han and Park, 2019).

Overall, Value Chain Integration and Market Linkages encompasses buyer connectivity, market relationships, supply-chain coordination, access to commercial information, and participation in value-adding networks. For FPOs, the relevance of these mechanisms is likely to vary according to commodity characteristics, destination markets, chain governance, buyer requirements, organizational capabilities, and position within the value chain.

Conceptual Relationships Among Capability Domains

The synthesis indicates potential interdependence among the five capability domains, although the direction, magnitude, and strength of these relationships remain to be empirically examined within FPOs. Therefore, the relationships presented here are treated as literature-derived conceptual propositions.

Financial capability may enable investment in quality systems, certification, infrastructure, technology, and market-development activities (Greenaway et al., 2007) (Manova, 2013). Organizational and managerial capabilities may influence how effectively these resources are coordinated and deployed through leadership, learning, innovation, and strategic decision-making (Knight and Cavusgil, 2004) (Gupta and Chauhan, 2021). Product readiness and compliance may likewise depend partly on financial resources, organizational systems, technical capability, and access to external support (Fernandes et al., 2019) (Fiankor et al., 2020).

Institutional support can facilitate capability development through market information, technical assistance, training, certification support, networking, and export-promotion services (Falahat et al., 2020) (Catanzaro and Teyssier, 2021). Participation in value chains may similarly provide access to buyers, commercial information, learning opportunities, and market networks that contribute to organizational upgrading and market preparedness (Epede and Wang, 2022) (Fernandes et al., 2022). These relationships indicate that progress in one domain may support, constrain, or reinforce capabilities in others.

Therefore, the framework conceptualizes export readiness as a multidimensional and context-dependent condition shaped by internal capabilities and external enabling mechanisms. The salience and interaction of individual domains may vary across commodities, destination markets, regulatory environments, organizational characteristics, and stages of market participation.

The proposed capability domains, their conceptual definitions, illustrative indicators, and representative supporting literature are summarized in Table *4*. The citations presented are illustrative rather than exhaustive; study-level evidence traceability for the 118 core studies is described in Appendix C and available in the public review dataset.

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Capability Domain	Conceptual Definition	Illustrative Indicators	Evidence Basis and Representative Supporting Literature
Financial Capability	Ability to mobilize and manage financial resources required for export preparation and participation	Access to institutional finance; working capital; trade finance; export-investment capacity; financial planning and risk management	Direct FPO contextual evidence: (Kakati and Roy, 2022). Transferable SME/exporter evidence: (Greenaway et al., 2007); (Manova, 2013); (Pietrovito and Pozzolo, 2021); (Mansilla-Fernández and Milgram-Baleix, 2023).
Product Readiness and Compliance	Ability to prepare products and related processes to meet regulatory, quality, certification, traceability, and buyer requirements in target markets	Quality-control systems; certification; traceability; product testing and documentation; regulatory and buyer compliance	Direct FPO-specific evidence is limited. Transferable agri-food/exporter evidence: (Ferro et al., 2015); (Fernandes et al., 2019); (Fiankor et al., 2020); (Gichuki et al., 2020); (Santeramo and Lamonaca, 2022); (Yang et al., 2023).
Organizational and Managerial Capability	Ability to govern, coordinate, manage, learn, and deploy organizational resources for export-related activities	Governance; professional management; export knowledge; internal coordination; strategic planning; organizational learning	Direct FPO contextual evidence: (Deka et al., 2020); (Yanduri and Siddayya, 2024). Transferable SME/firm evidence: (Knight and Cavusgil, 2004); (Gupta and Chauhan, 2021); (Bianchi and Stoian, 2024).
Institutional Support	External institutional mechanisms and support structures that facilitate export capability development, organizational preparedness, and international market participation	Export-promotion assistance; technical support; training; market intelligence; certification support; institutional and market linkages	Direct FPO contextual evidence: (Lalitha et al., 2024). Transferable export-promotion and institutional evidence: (Broocks and Van Biesebroeck, 2017); (Falahat et al., 2020); (Catanzaro and Teyssier, 2021); (Tinits and Fey, 2022).

Value Chain Integration and Market Linkages	Ability to establish and coordinate relationships with buyers and other value-chain actors to support market access and sustained participation	Buyer relationships; market access; supply-chain coordination; logistics; market information; downstream linkages	Direct FPO/producer-organization contextual evidence: (Deka et al., 2020); (Trebbin, 2014). Transferable agricultural/value-chain evidence: (Gereffi et al., 2005); (Barrett et al., 2022); (Epede and Wang, 2022); (Fernandes et al., 2022); (Montalbano and Nenci, 2022); (Zhang et al., 2025).

TABLE 4: Proposed Domains of Export Readiness, Conceptual Definitions, Illustrative Indicators, and Evidence Basis

Note. The cited studies are representative, rather than exhaustive. Direct FPO and producer-organization evidence are distinguished from evidence transferred from broader agricultural, agri-food, SME, exporter, and firm-level research. Transferable evidence is used to identify mechanisms potentially relevant to FPO export preparedness and should not be interpreted as direct empirical evidence of FPO export readiness. The definitions and indicators are literature-derived propositions for future operationalization and do not constitute validated measurement scales or diagnostic instruments. Detailed study-level evidence mapping is provided in Appendix C and the Supplementary Review Dataset.
Source: Authors' synthesis based on the reviewed literature.

Implications

The findings of this review have implications for understanding and assessing export readiness in FPOs. Rather than focusing on isolated indicators such as production capacity, financial performance, organizational size, or prior export experience, the proposed framework suggests considering the configuration of organizational capabilities and external enabling conditions relevant to a specific product-market context.

For FPO managers, the framework can help identify complementary strengths and capability gaps. Strength in one area may not compensate for substantial limitations in another. For example, adequate production capacity and access to finance may provide limited advantage where certification, traceability, managerial capability, or buyer linkages remain inadequate. An export-readiness assessment based on the proposed domains could therefore consider both overall preparedness and the specific constraints associated with participation in a target market.

The relative importance of the domains is likely to vary across commodities, destination markets, regulatory environments, certification requirements, buyer expectations, market channels, and levels of organizational maturity. An FPO may therefore be comparatively well prepared for one product-market combination while requiring additional capability development for another.

For policymakers, export-promotion agencies, financial institutions, and development organizations, the findings suggest potential value in addressing complementary capability constraints rather than treating finance, compliance, management, institutional support, and market access as isolated areas of intervention. The proposed domains and illustrative indicators provide a conceptual basis for the future development of adaptable export-readiness assessment approaches. However, operational measures, scoring procedures, weighting, and decision thresholds require empirical development and validation before practical application.

Limitations

This review has several limitations. First, it relies on secondary literature and therefore reflects the scope, quality, and contextual relevance of the available evidence. Although a structured search and screening process was followed, relevant studies outside the selected search sources and identification pathways may have been missed. In particular,

Scopus and Web of Science were not used as primary bibliographic databases, which may have limited the coverage of some indexed literature and reduced the reproducibility of the retrieval compared with searches conducted in conventional bibliographic databases.

Second, a substantial proportion of the evidence on export readiness and internationalization originates from firms, SMEs, and conventional exporters rather than FPOs. These studies were included because they provided transferable insights into mechanisms such as finance, managerial capability, compliance investment, export knowledge, and market relationships. However, their application to FPOs requires careful interpretation because collective agricultural organizations differ in ownership, governance, member participation, aggregation, decision-making, and coordination.

Third, the review integrates empirical studies, review articles, conceptual and theoretical studies, and institutional or policy reports that vary in methodological design, evidence strength, sector, geographical setting, and analytical purpose. Given this methodological and contextual heterogeneity, no formal quantitative synthesis or meta-analysis was undertaken. Instead, a structured qualitative appraisal and interpretive weighting approach was used to account for differences across evidence types and contexts. Nevertheless, the underlying heterogeneity of the evidence remains. Cross-stream synthesis also involved researcher judgment in comparing terminology, normalizing related concepts, refining categories, and consolidating them into higher-order capability domains. Screening and study-selection decisions were undertaken by a single researcher; consequently, inter-reviewer agreement could not be assessed. Consistency was supported through predefined eligibility criteria, a formal relevance-appraisal rubric, structured study-level records, and a consistency check.

Finally, the five proposed domains are literature-derived and have not yet been empirically validated as an FPO export-readiness model. Their dimensionality, measurement properties, relative importance, and interrelationships may vary across commodities, destination markets, certification and regulatory regimes, market channels, regions, and levels of organizational maturity. Therefore, the framework requires contextual adaptation and empirical validation before use as a formal assessment model.

Future Research Directions

Future research should first operationalize the five proposed domains through measurable indicators and examine their content validity, construct validity, reliability, and dimensional structure across different FPO contexts. This would allow subsequent studies to determine whether Financial Capability, Product Readiness and Compliance, Organizational and Managerial Capability, Institutional Support, and Value Chain Integration and Market Linkages form a stable multidimensional structure or require contextual adaptation. Empirical work should also examine appropriate weighting, scoring procedures, and decision thresholds and assess the extent to which domain-level measures are associated with observable outcomes such as export participation, market entry, export continuity, and export performance.

The second research priority concerns the relationships among the proposed domains. The present synthesis indicates that export readiness may depend not only on the strength of individual capabilities but also on their interactions. Future studies could examine whether financial capability enables investment in compliance and market development, whether organizational and managerial capabilities strengthen the effective use of institutional support, and whether buyer relationships and value chain participation contribute to learning and capability development. Such research could test complementary, mediating, moderating, or configurational relationships among the domains rather than treating them as independent predictors of export readiness.

Future research should also examine the heterogeneity of export-readiness requirements. Comparative studies across commodities, regions, FPO sizes, organizational maturity levels, destination markets, certification regimes, and market channels can determine whether different configurations of capabilities are associated with export preparedness in different contexts. Comparisons among export-active, export-aspiring, and non-exporting FPOs may help distinguish the capabilities associated with export entry from those required for sustained international participation. This would also allow researchers to examine whether multiple pathways to export readiness exist, rather than assuming a single developmental sequence.

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Longitudinal and multilevel research would provide further insight into how export-related capabilities evolve over time. Studies could examine whether improvements in one domain precede or facilitate development in others, how capability priorities change as FPOs move from domestic market participation to export preparation and international market engagement, and how organizational capabilities interact with external institutional and market conditions. Future studies may also compare FPOs with cooperatives, producer companies, SMEs, or other collective agricultural enterprises to assess the broader transferability of the proposed capability structure.

Conclusions

This structured integrative review consolidates fragmented evidence on export readiness into a coherent conceptual understanding for FPOs. The synthesis identifies five higher-order domains of export readiness: Financial Capability, Product Readiness and Compliance, Organizational and Managerial Capability, Institutional Support, and Value Chain Integration and Market Linkages. Together, these domains suggest that FPO export readiness extends beyond production capacity or market access and is better understood as a multidimensional condition shaped by both internal organizational capabilities and external enabling mechanisms. Their relevance is supported by converging evidence across multiple bodies of literature. FPO and producer-organization studies provide direct contextual evidence on collective governance, member participation, aggregation, coordination, institutional relationships, and market engagement, while research on SMEs, exporters, and conventional firms contributes transferable evidence on finance, managerial capability, export knowledge, compliance investment, and buyer relationships. Internationalization theory, the capability perspective, and collective-action theory provide complementary lenses for interpreting these mechanisms within collective agricultural organizations.

The synthesis further indicates that export readiness is unlikely to follow a uniform or sequential pathway. The relative importance and interaction of the five domains may vary across commodities, destination markets, regulatory and certification requirements, market channels, organizational maturity, and other contextual conditions. The proposed domains should therefore be interpreted as literature-derived conceptual propositions rather than empirically validated dimensions of an FPO export readiness model. Nevertheless, they provide an integrated foundation for developing measurable indicators, undertaking comparative analysis, and empirically examining how different capability configurations relate to export entry, preparedness, and sustained participation among FPOs.

Appendices

Appendix A. Detailed literature search strategy and reproducibility

This appendix provides the detailed search documentation supporting the literature-identification process described in the Literature search strategy section of the manuscript. The seven search streams and their purposes are already presented in Table *1* of the manuscript and are therefore not repeated here. Searches were conducted during May 2026, with 31 May 2026 used as the literature-identification cut-off. The primary publication period was 2010-2026, while relevant seminal studies published before 2010 were retained where required for theoretical or conceptual grounding.

Parameter	Specification
Review approach	Structured integrative literature review
Search execution period	May 2026
Literature-identification cut-off	31 May 2026
Primary publication period	2010–2026

Earlier literature	Seminal pre-2010 studies retained where theoretically or conceptually necessary
Language	English
Academic search sources	Google Scholar and Semantic Scholar
Literature-discovery tools	Elicit and Research Rabbit
Additional identification	Backward and forward citation tracking; targeted institutional and policy searches
Search approaches	Boolean/phrase searching, keyword searching, question-based discovery, citation-network expansion, and targeted searches
Documented searches	90
Searches with recorded query-level counts	81
Records represented by query-level counts	442
Additional stream-level records	24
Total records identified	466
Review dataset	(Pachaghare and Vishwakarma, 2026)

TABLE 5: A1. Literature Search Protocol

Source: Authors' compilation based on the literature-search protocol and review dataset.

Table A2 reproduces the documented search log in the same sequence as the archived dataset. Search IDs have not been renumbered or rearranged. NR indicates that a separate retrieval count was not recorded for that search. Retrieval counts represent records captured during the review and may differ if the searches are repeated later. Source-level retrieval totals were not retrospectively reconstructed because separate retrieval counts were not retained for all searches; the recorded query-level counts and stream-level reconciliation are reported as originally documented.

Search ID	Source / Tool	Search Type	Exact Search String / Question / Seed	Purpose	Search Period	Retrieval Count
S1 – Export Readiness and Internationalization						

S1-Q04	Google Scholar	Boolean	("export readiness" OR "export capability" OR "export stages" OR "internationalization stages") AND (SMEs OR "small firms" OR agriculture OR FPO)	Capture theory and empirical studies	May 2026	10
S1-Q05	Google Scholar	Boolean	("export development stages" OR "stage model of internationalization") AND (SMEs OR "small firms")	Capture stage-based literature	May 2026	6
S1-Q06	Semantic Scholar	Keyword	export readiness SMEs; SME export preparedness factors; internationalization readiness small firms	Structured database-style search	May 2026	5
S1-Q07	Semantic Scholar	Keyword	export capability determinants small firms	Structured database-style search	May 2026	5
S1-Q08	Semantic Scholar	Keyword	internationalization stages SMEs	Structured database-style search	May 2026	4
S1-Q01	Elicit	Question	What determines export readiness in SMEs?	Identify core readiness determinants	May 2026	4
S1-Q02	Elicit	Question	What are stages of internationalization for small firms?	Identify stage logic	May 2026	4

S1-Q03	Elicit	Question	What distinguishes export-ready vs non-exporting firms?	Support stage classification	May 2026	4
S1-Q09	Research Rabbit	Citation expansion	Seed: Kahiya (2016)	Identify hidden related papers and clusters	May 2026	8
S1-Q10	Research Rabbit	Citation expansion	Seed: Leonidou (2021)	Expand around export-readiness literature	May 2026	2
S2 – Financial Capability and Export Finance						
S2-Q05	Google Scholar	Direct	("cash conversion cycle" OR "working capital cycle") AND (SMEs OR "small firms") AND (export OR export performance)	Direct evidence on working capital and export	May 2026	11
S2-Q06	Google Scholar	Direct	("accounts receivable" OR "accounts payable" OR "trade credit") AND (SMEs OR "small enterprises") AND (export OR internationalization)	Direct evidence on trade finance	May 2026	5
S2-Q07	Google Scholar	Direct	("working capital management") AND (SMEs OR "small firms") AND (export OR export performance)	Direct evidence on export finance	May 2026	8

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S2-Q08	Google Scholar	Indirect	("trade credit" OR "credit terms" OR "payment terms") AND (SMEs OR exporters) AND (export performance OR exporting)	Indirect evidence on financial constraints	May 2026	8
S2-Q09	Google Scholar	Indirect	cash flow SMEs export performance	Indirect evidence on financial constraints	May 2026	0
S2-Q10	Semantic Scholar	Keyword	"financial constraints" SMEs export performance	Structured search for finance variables	May 2026	3
S2-Q11	Semantic Scholar	Keyword	"access to finance" SMEs exporting	Structured search for finance variables	May 2026	3
S2-Q12	Semantic Scholar	Keyword	working capital management SMEs export performance	Structured search for finance variables	May 2026	2
S2-Q01	Elicit	Question	How does access to finance affect export performance?	Finance–export link	May 2026	2
S2-Q02	Elicit	Question	What financial constraints limit SME exports?	Identify finance barriers	May 2026	2
S2-Q03	Elicit	Question	How does working capital constraint affect export participation?	Support working-capital variable	May 2026	3
S2-Q04	Elicit	Question	What is the role of trade finance in SME exports?	Support trade-finance variable	May 2026	1

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S2-Q13	Research Rabbit	Citation expansion	Seed: Manova (2015)	Find related finance studies quickly	May 2026	12
S2-Q14	Research Rabbit	Citation expansion	Seed: Wagner (2019)	Expand around export-finance studies	May 2026	3
S2-Q15	Policy source	Targeted	NABARD FPO financing schemes India	Support intervention logic	May 2026	4
S2-Q16	Policy source	Targeted	APEDA export promotion schemes India	Support intervention logic	May 2026	3
S2-Q17	Policy source	Targeted	export credit schemes India MSME export finance	Support intervention logic	May 2026	1
S3 – Product Readiness and Compliance						
S3-Q04	Google Scholar	Direct	("SPS measures" OR "sanitary phytosanitary" OR "food safety standards") AND (agricultural exports OR agri-food exports) AND (compliance OR standards OR regulations) AND (impact OR effect)	Direct compliance evidence	May 2026	8

S3-Q05	Google Scholar	Direct	("export certification" OR "food certification" OR "quality certification") AND (barriers OR constraints) AND (agriculture OR agri OR food exports)	Direct compliance evidence	May 2026	10
S3-Q06	Google Scholar	Direct	("product quality" OR "quality standards" OR "product standards") AND (export performance OR exports) AND (agriculture OR "agri-food" OR food) AND (SMEs OR "small firms")	Direct product-readiness evidence	May 2026	8
S3-Q07	Semantic Scholar	Keyword	SPS standards agricultural exports	Database search for product/compliance studies	May 2026	4
S3-Q08	Semantic Scholar	Keyword	export compliance certification agriculture	Database search for product/compliance studies	May 2026	2
S3-Q01	Elicit	Question	How do quality standards affect agricultural exports?	Identify quality-readiness variables	May 2026	4
S3-Q02	Elicit	Question	What compliance requirements affect export readiness?	Identify compliance variables	May 2026	1

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S3-Q03	Elicit	Question	How do SPS standards impact agricultural exports?	Support SPS-specific evidence	May 2026	2
S3-Q09	Research Rabbit	Citation expansion	Seed: Mangelsdorf (2012)	Identify adjacent compliance literature	May 2026	8
S3-Q10	Research Rabbit	Citation expansion	Seed: Ferro (2015)	Expand around compliance-cost studies	May 2026	7
S3-Q11	Policy source	Targeted	APEDA certification support	Institutional and policy support	May 2026	NR
S3-Q12	Policy source	Targeted	food export compliance India	Institutional and policy support	May 2026	NR
S4 – Organizational and Managerial Capability						
S4-Q04	Google Scholar	Direct	("managerial capability" OR "management capability" OR "managerial skills") AND (SMEs OR "small firms") AND (export OR "export performance" OR internationalization)	Direct evidence	May 2026	12

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S4-Q05	Google Scholar	Direct	("corporate governance" OR governance OR "board structure") AND ("export performance" OR export OR exporting OR internationalization) AND (SMEs OR "small firms")	Direct evidence	May 2026	7
S4-Q06	Google Scholar	Indirect	(leadership OR "entrepreneurial leadership") AND (SMEs OR "small firms") AND ("export performance" OR export OR internationalization)	Supporting evidence	May 2026	7
S4-Q07	Google Scholar	Indirect	("organizational capability" OR "dynamic capabilities") AND (firms OR SMEs) AND (performance OR competitiveness OR export)	Supporting evidence	May 2026	4
S4-Q08	Semantic Scholar	Keyword	corporate governance export performance SMEs	Structured search for organizational variables	May 2026	4
S4-Q09	Semantic Scholar	Keyword	managerial capability export performance SMEs	Structured search for organizational variables	May 2026	4

S4-Q01	Elicit	Question	Does managerial capability affect export performance?	Managerial dimension	May 2026	5
S4-Q02	Elicit	Question	How does governance impact firm performance?	Governance dimension	May 2026	3
S4-Q03	Elicit	Question	How does managerial experience influence export performance?	Behavioral/experience effect	May 2026	3
S4-Q10	Research Rabbit	Citation expansion	Seed: Bianchi (2022)	Build depth around organizational factors	May 2026	5
S5 – Institutional Support and Export Promotion						
S5-Q04	Google Scholar	Direct	("types of export support programs" OR "export support mechanisms" OR "export promotion measures") AND (SMEs OR agriculture OR "small producers")	Categorisation of interventions	May 2026	4
S5-Q05	Google Scholar	Direct	("export finance" OR "trade finance" OR "export credit" OR "working capital support") AND (SMEs OR agriculture)	Finance intervention types	May 2026	9

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S5-Q06	Google Scholar	Direct	("value addition" OR processing OR "agro-processing support") AND (agriculture OR SMEs) AND (export OR "export competitiveness" OR "international markets")	Processing intervention types	May 2026	9
S5-Q07	Google Scholar	Direct	(certification OR "quality standards support" OR compliance OR SPS OR "food safety support") AND (agriculture OR SMEs) AND (export OR "market access" OR "international trade")	Certification intervention types	May 2026	7
S5-Q08	Google Scholar	Direct	(logistics OR infrastructure OR "cold chain" OR storage OR transportation) AND (export support OR agriculture)	Infrastructure intervention types	May 2026	5

S5-Q09	Google Scholar	Direct	("market access" OR "export market access" OR "trade facilitation" OR "export promotion agencies" OR "buyer networks") AND (SMEs OR agriculture) AND (export OR "international trade")	Market access intervention types	May 2026	9
S5-Q10	Google Scholar	Direct	("capacity building" OR training OR "technical assistance" OR "institutional strengthening") AND (SMEs OR agriculture OR FPOs)	Institutional intervention types	May 2026	8
S5-Q11	Semantic Scholar	Keyword	export support mechanisms SMEs agriculture	Database search for intervention categories	May 2026	2
S5-Q12	Semantic Scholar	Keyword	export finance instruments SMEs	Database search for finance categories	May 2026	2
S5-Q13	Semantic Scholar	Keyword	trade facilitation measures agriculture exports	Database search for ecosystem interventions	May 2026	5
S5-Q01	Elicit	Question	What types of financial and institutional interventions support SME and agricultural exports?	Identify intervention categories	May 2026	5

S5-Q02	Elicit	Question	What are the main categories of export support mechanisms for SMEs and small producers?	Intervention classification	May 2026	2
S5-Q03	Elicit	Question	What types of export promotion programs and institutional support measures are provided for exporters?	Policy-based intervention types	May 2026	6
S5-Q14	Research Rabbit	Citation expansion	Seed: Tinits (2022)	Expand intervention category coverage	May 2026	5
S5-Q15	Research Rabbit	Citation expansion	Seed: Malca (2020)	Expand finance and policy intervention coverage	May 2026	4
S5-Q16	Policy source	Targeted	NABARD export support schemes FPO	Identify real-world intervention categories	May 2026	NR
S5-Q17	Policy source	Targeted	SFAC schemes for FPO export support	Identify institutional support categories	May 2026	NR
S5-Q18	Policy source	Targeted	APEDA export promotion schemes agriculture	Identify export promotion categories	May 2026	NR
S5-Q19	Policy source	Targeted	World Bank trade facilitation and export support programs	Identify global intervention frameworks	May 2026	NR

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S6 – Farmer Producer Organizations and Collective Action						
S6-Q04	Google Scholar	Direct	("farmer producer organization" OR "producer organization" OR "farmer collective" OR cooperative) AND (performance OR efficiency) AND India	Direct FPO evidence	May 2026	7
S6-Q05	Google Scholar	Direct	("farmer producer organization" OR "producer organization" OR cooperative) AND (export OR "market access" OR "value chain")	Direct FPO export and linkage evidence	May 2026	9
S6-Q06	Google Scholar	Indirect	("collective action" OR "farmer collective" OR cooperative) AND (agriculture OR smallholders) AND (markets OR "value chain" OR "market access")	Supporting collective-action literature	May 2026	9
S6-Q07	Semantic Scholar	Keyword	farmer producer organization performance India	Structured search for FPO context	May 2026	4

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S6-Q08	Semantic Scholar	Keyword	producer organizations agriculture market access export	Structured search for FPO and export context	May 2026	8
S6-Q01	Elicit	Question	What factors influence performance of Farmer Producer Organizations and producer collectives in agriculture?	Contextualize for FPOs	May 2026	3
S6-Q02	Elicit	Question	How do farmer collectives and producer organizations improve market access and value chain participation?	Collective-market linkage	May 2026	4
S6-Q03	Elicit	Question	What constraints do FPOs and smallholder collectives face in accessing export and international markets?	Direct export constraint evidence	May 2026	4
S6-Q09	Research Rabbit	Citation expansion	Seed: Singh (2023)	Find hidden FPO-related studies	May 2026	7
S6-Q10	Research Rabbit	Citation expansion	Seed: Gonzalez (2017)	Find hidden FPO-related studies	May 2026	7
S6-Q11	Institutional report search	Targeted	NABARD farmer producer organization reports	Institutional context and practice reports	May 2026	NR

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S6-Q12	Institutional report search	Targeted	SFAC FPO schemes and performance reports	Institutional context and practice reports	May 2026	NR
S7 – Value Chain Integration and Market Linkages						
S7-Q04	Google Scholar	Direct	("global value chain" OR "value chain integration" OR "supply chain integration") AND (participation OR integration OR governance) AND (export OR "international markets") AND (SMEs OR agriculture OR FPO)	Core value chain participation literature	May 2026	9
S7-Q05	Google Scholar	Direct	("global value chain" OR GVC) AND (upgrading OR "product upgrading" OR "process upgrading" OR "functional upgrading") AND (export OR "market access")	GVC upgrading and export progression	May 2026	9

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S7-Q06	Google Scholar	Direct	("buyer driven value chain" OR "value chain governance" OR contracts OR coordination) AND (SMEs OR agriculture) AND (export OR "international trade")	Value chain execution and coordination	May 2026	8
S7-Q07	Semantic Scholar	Keyword	global value chain participation SMEs export	Database-style search for participation	May 2026	5
S7-Q08	Semantic Scholar	Keyword	value chain upgrading agriculture exports	Database-style search for upgrading	May 2026	3
S7-Q01	Elicit	Question	How do FPOs and small producers participate in domestic and global value chains for export?	Value chain entry and participation	May 2026	9
S7-Q02	Elicit	Question	What governance and coordination mechanisms enable participation in export-oriented value chains?	Value chain execution mechanisms	May 2026	6
S7-Q03	Elicit	Question	How does upgrading within value chains influence export engagement and progression?	Value chain upgrading logic	May 2026	NR

S7-Q09	Research Rabbit	Citation expansion	Seed: Fernandes (2021)	Map clusters on GVC participation and upgrading	May 2026	13
S7-Q10	Research Rabbit	Citation expansion	Seed: Ndubuisi (2021)	Expand participation and governance evidence	May 2026	5

TABLE 6: A2. Complete Literature Search Log

Source: Authors' literature-search log, May 2026.

The recorded query-level counts account for 442 records. A further 24 records were retained at stream level from iterative citation-network exploration, institutional or policy searching, and supplementary identification where separate query-level allocation was not preserved. These records were not retrospectively assigned to individual search rows.

Search Stream	Documented Searches	Searches with Recorded Counts	Searches without Separate Count	Query-Level Records	Additional Stream-Level Records	Records Identified
S1 – Export Readiness and Internationalization	**10**	**10**	**0**	**52**	**13**	**65**
S2 – Financial Capability and Export Finance	17	17	0	71	1	72
S3 – Product Readiness and Compliance	12	10	2	54	2	56
S4 – Organizational and Managerial Capability	10	10	0	54	0	54
S5 – Institutional Support and Export Promotion	19	15	4	82	3	85

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S6 – Farmer Producer Organizations and Collective Action	12	10	2	62	0	62
S7 – Value Chain Integration and Market Linkages	10	9	1	67	5	72
Total	**90**	**81**	**9**	**442**	**24**	**466**

TABLE 7: A3. Reconciliation of Search Records

Source: Authors' compilation based on the literature-search log and review dataset.

Thus, the documented search process comprised 90 searches, of which 81 had separately recorded retrieval counts representing 442 records. The additional 24 stream-level records reconcile the search output to the 466 records identified for the review.

Detailed screening, exclusion, relevance appraisal, and study-selection procedures are reported in Appendix B. Data extraction, evidence classification, and capability-domain development are reported in Appendix C.

The complete study-level dataset supporting the review is publicly available (Pachaghare and Vishwakarma, 2026).

Appendix B. Study screening, selection, and formal appraisal procedure

This appendix provides additional detail on the screening and appraisal process described in Study screening and selection section of the manuscript. It presents the eligibility criteria, reasons for exclusion or non-progression, the relevance-appraisal rubric, and the detailed screening outcomes. The overall study-selection flow is presented in Figure *1* of the manuscript and is therefore not repeated here.

Criterion	Application
Topical relevance	Addressed export readiness, export capability, export participation, internationalization, export barriers, or closely related determinants
Conceptual or theoretical relevance	Contributed concepts, theories, frameworks, or explanatory mechanisms relevant to export readiness
Empirical relevance	Provided empirical evidence on factors influencing export participation, preparedness, capability, or related outcomes
Contextual relevance	Examined FPOs, producer organizations, agricultural enterprises, smallholder collectives, SMEs, exporters, or comparable organizational settings
Policy or institutional relevance	Provided credible evidence on export support, finance, standards, market access, institutional assistance, or related policy mechanisms

Source credibility	Peer-reviewed research and credible academic, institutional, policy, or high-relevance working-paper sources were considered
Publication period	Primarily 2010–2026; seminal pre-2010 studies retained where theoretically or conceptually necessary
Language	English
Information sufficiency	Sufficient bibliographic, conceptual, empirical, or contextual information was available to assess relevance

TABLE 8: B1. Study Eligibility Criteria

Source: Authors' screening and eligibility framework developed for the present review.

Studies meeting these criteria were assessed for their contribution to the review rather than on publication type alone. Broader SME, exporter, and private-firm studies were considered where they provided transferable evidence on enterprise-level export mechanisms, while FPO and producer-organization literature provided the collective agricultural context.

Criterion	Treatment
Duplicate or alternate record	Consolidated with the representative record before study-level screening
Low topical relevance	Not retained where the connection with export readiness or related capabilities was weak or peripheral
Insufficient contribution	Not progressed where theoretical, empirical, policy, or contextual contribution to the review objective was insufficient
Peripheral contextual evidence	Retained as background/context where useful but not progressed to detailed review
Redundant evidence	Studies providing substantially overlapping evidence could be retained as supporting literature rather than core synthesis evidence
Insufficient source credibility	Non-scholarly, promotional, opinion-based, or otherwise insufficiently credible sources were not retained
Insufficient information	Records lacking sufficient information for meaningful assessment were not progressed
Limited additional synthesis contribution	Detailed-review studies providing mainly supporting, overlapping, or non-distinct evidence were retained as background rather than included in the final core synthesis

TABLE 9: B2. Exclusion and Non-Progression Criteria

Source: Authors' screening records and study-selection framework.

The distinction between exclusion and non-progression is important. A study not included in the final synthesis was not necessarily considered irrelevant; some studies were retained as contextual or supporting evidence but did not contribute sufficiently distinct evidence to the core synthesis.

Score	Classification	Appraisal Guide	Progression
3	High relevance	Direct and substantive contribution to export readiness, export capability, or a closely related theoretical, empirical, or contextual issue	Retained for detailed review
2	Moderate relevance	Indirect or supporting contribution with meaningful relevance to the review	Retained for detailed review where direct thematic fit and synthesis usefulness were evident; otherwise retained as contextual evidence
1	Low or peripheral relevance	Weak, marginal, or insufficient connection to the review objective	Not retained for detailed review

TABLE 10: B3. Relevance-Appraisal Rubric

Source: Authors' formal relevance-appraisal framework used in the study-screening process.

Application of the rubric produced 239 high-relevance, 155 moderate-relevance, and 32 low/peripheral studies among the 426 unique studies. All 239 high-relevance studies progressed to detailed review. Of the 155 moderate-relevance studies, 39 were retained for detailed review because of their direct thematic fit and potential contribution to synthesis, while 116 were retained only as broader contextual evidence. The 32 low/peripheral studies were not retained for detailed review. These classifications are recorded in the review dataset.

Screening Outcome	Studies
Unique studies appraised	426
High relevance	239
Moderate relevance	155
Low or peripheral relevance	32
Moderate-relevance studies retained for detailed review	39

Moderate-relevance studies retained as contextual evidence only	116
Studies retained for detailed review	278
Detailed-review studies retained as supporting/background evidence	160
Core studies included in final synthesis	118

TABLE 11: B4. Detailed Screening and Progression Outcomes

Source: Authors' compilation based on the Screening Records and Review Flow of the review dataset.

Screening Consistency and Bias Control

Screening and study-selection decisions were undertaken by a single researcher; therefore, inter-reviewer agreement could not be calculated. To improve consistency, the same eligibility criteria and relevance-appraisal rubric were applied across the search streams, study-level decisions and reasons were retained in structured screening records, and duplicate or alternate records were formally consolidated. A revision-stage consistency check was also used to reconcile relevance scores, progression decisions, and final study counts with the review dataset.

The complete study-level screening records and review-flow information are publicly available (Pachaghare and Vishwakarma, 2026).

Appendix C. Evidence classification, synthesis, and appraisal

This appendix provides additional methodological detail on the evidence classification, appraisal, and synthesis procedures described in Data extraction and organization of evidence, Evidence appraisal and weighting, Cross-stream synthesis, and Development of capability domains sections of the manuscript. As the data-extraction fields are already reported in Table *3* of the manuscript, they are not repeated here. The review used a theory-informed search strategy followed by an inductive cross-stream synthesis. Search streams served as literature-identification and evidence-organization pathways and did not determine subsequent coding or capability-domain development.

Evidence Context	Role in the Synthesis
FPOs and producer organizations	Provided evidence on collective governance, member participation, coordination, aggregation, institutional relationships, and market participation
Agricultural, smallholder, and agri-food studies	Provided sector-specific evidence on commercialization, quality requirements, compliance, market access, and value-chain participation
SMEs, exporters, and private firms	Provided evidence on enterprise-level export mechanisms such as finance, managerial capability, export knowledge, compliance investment, internationalization, and buyer relationships

Institutional, policy, and conceptual literature	Provided evidence on export support, trade facilitation, institutional assistance, policy mechanisms, and theoretical foundations

TABLE 12: C1. Evidence Context and Analytical Role

Note. These categories describe the analytical role of different bodies of evidence rather than a separate quantitative classification of the 118 core studies. Findings from conventional firms were interpreted cautiously when applied to FPOs because of differences in governance, member participation, aggregation, and coordination.
Source: Authors' synthesis based on the reviewed literature.

Search Stream	Core Studies (*n*)	Analytical Role and Relationship to Proposed Domains
S1 – Export Readiness and Internationalization	18	Provided overarching evidence on export preparedness, internationalization, learning, and capability development; contributed across several domains rather than forming a separate domain
S2 – Financial Capability and Export Finance	16	Contributed primarily to Financial Capability, with connections to financing of compliance, market development, and export-related investment
S3 – Product Readiness and Compliance	20	Contributed primarily to Product Readiness and Compliance, with connections to finance, institutional assistance, and buyer requirements
S4 – Organizational and Managerial Capability	17	Contributed primarily to Organizational and Managerial Capability and to the organizational use and coordination of other resources
S5 – Institutional Support and Export Promotion	18	Contributed primarily to Institutional Support, while also informing finance, compliance, managerial development, and market access
S6 – Farmer Producer Organizations and Collective Action	14	Provided the FPO-specific organizational and collective-action context across several domains rather than forming a separate capability domain

S7 – Value Chain Integration and Market Linkages	15	Contributed primarily to Value Chain Integration and Market Linkages, with connections to compliance, learning, coordination, and capability upgrading
Total	118	

TABLE 13: C2. Search Streams, Core Evidence Distribution, and Relationship to Proposed Domains

Note. The relationship between search streams and proposed capability domains is not one-to-one. Search streams were used for literature identification and evidence organization, whereas capability domains resulted from subsequent cross-stream synthesis. Individual studies could contribute to more than one capability area.
Source: Authors' compilation and synthesis based on the core review records.

Stage	Analytical Procedure
1. Evidence review	Relevant findings, constraints, enabling factors, theoretical insights, and export-readiness implications were examined
2. Descriptive concept identification	Concepts were recorded using terminology close to that reported in the source literature
3. Concept normalization	Similar or overlapping terms were grouped into common conceptual categories while retaining their substantive meaning
4. Cross-stream comparison	Categories were compared across search streams to identify convergence, overlap, complementarity, and differences in emphasis
5. Category refinement	Closely related categories were combined, while conceptually distinct categories were retained separately
6. Domain consolidation	Refined categories were consolidated into higher-order capability domains representing recurring areas of export preparedness

TABLE 14: C3. Cross-Stream Coding and Synthesis Procedure

Note. No fixed numerical frequency threshold was applied. Concepts were retained on the basis of conceptual coherence, direct relevance to export readiness, support across the evidence base, analytical distinctiveness, and applicability to the FPO context.
Source: Developed by the authors based on the cross-stream synthesis procedure used in the present review.

Illustrative Concepts Identified in the Literature	Proposed Higher-Order Capability Domain

Access to credit, working capital, liquidity, trade finance, bank relationships, and financing constraints	Financial Capability
Product quality, certification, SPS requirements, food safety, standards, traceability, and regulatory compliance	Product Readiness and Compliance
Managerial competence, export knowledge, leadership, governance, organizational learning, and internal coordination	Organizational and Managerial Capability
Export assistance, technical support, training, market information, certification assistance, policy support, and trade facilitation	Institutional Support
Buyer relationships, market access, supply-chain coordination, logistics, value-chain participation, and upgrading	Value Chain Integration and Market Linkages

TABLE 15: C4. Illustrative Concept-to-Domain Consolidation

Note. The mapping is illustrative rather than exhaustive and does not constitute a complete codebook. Individual studies could contribute to more than one capability area. The five proposed domains represent literature-derived conceptual categories rather than empirically validated dimensions of a measurement model.
Source: Authors' synthesis based on recurring concepts identified across the reviewed literature.

The five domains were retained on the basis of conceptual coherence, analytical distinctiveness, relevance to export readiness, applicability to the FPO context, and support across the wider evidence base.

Study-level Evidence Traceability

The publicly available dataset provides study-level records for all 118 core studies included in the final synthesis, including search-stream classification, evidence-relevance information, synthesis notes, and original capability-domain coding where available. The original coding uses Y for strong/direct evidence, P for partial/supporting evidence, and N where the capability was not discussed; blank values indicate that no original code was available. Missing capability coding was preserved rather than retrospectively inferred. This study-level mapping provides the complete evidence trail underlying the representative supporting literature reported in Table *4* and the cross-stream synthesis presented in the manuscript. The complete review dataset is publicly available (Pachaghare and Vishwakarma, 2026).

Evidence Type	Appraisal Considerations	Primary Role in Synthesis	Interpretive Treatment
Empirical studies	Clarity of research design, sample/data source, analytical approach, and direct relevance	Evidence on relationships, barriers, constraints, and enabling mechanisms	Greater interpretive emphasis where methods were transparent, relevance was direct, and findings were corroborated
Review studies	Transparency of evidence base and synthesis approach, scope, and relevance	Consolidation and corroboration of existing evidence	Interpretation reflected methodological transparency, relevance, and consistency with the wider evidence base

Conceptual/theoretical studies	Theoretical clarity, grounding in prior literature, and explanatory contribution	Theoretical interpretation and explanation of capability relationships	Used primarily to support conceptual interpretation rather than independent empirical confirmation
Institutional/policy reports	Source credibility, transparency of supporting evidence, and contextual relevance	Regulatory, institutional, policy, and sectoral context	Used mainly as contextual or supporting evidence, with stronger interpretation where corroborated

TABLE 16: C5. Evidence Appraisal and Interpretive Weighting Framework

Source: Developed by the authors for the present review.

The framework distinguishes the analytical contribution of heterogeneous evidence rather than assigning a common numerical quality score across fundamentally different study designs. No fixed numerical weighting was applied. Greater interpretive emphasis was placed on methodologically transparent and directly relevant empirical evidence supported across studies or contexts, while conceptual, institutional, and policy sources primarily supported theoretical and contextual interpretation.

The proposed domains should not be interpreted as a universal or sequential pathway to export readiness. Their relative importance, operational indicators, and potential relationships may vary according to commodity, destination market, regulatory and certification requirements, buyer expectations, market channel, and FPO characteristics. The framework therefore provides a conceptual basis for subsequent operationalization and empirical validation rather than an established measurement model.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Gajanan Pachaghare, Pankaj Vishwakarma

Acquisition, analysis, or interpretation of data: Gajanan Pachaghare, Pankaj Vishwakarma

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Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following:

- **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work.
- **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work.

- **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

Data Availability Statements

The dataset supporting this review has been deposited in Zenodo and is publicly available at https://doi.org/10.5281/zenodo.21870542. The repository contains the study-level records used for literature identification, screening, detailed-review selection, and final synthesis, together with the search log, review-flow reconciliation, synthesis data, and data dictionary.

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