Vendor Onboarding and Capability Development Framework to Strengthen Emerging Market Supply Chain Performance and Compliance

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Abstract- Emerging markets present both significant growth opportunities and heightened operational risks for global and regional supply chains. In these contexts, the performance and compliance of supply chains are heavily influenced by the effectiveness of vendor onboarding and the depth of supplier capability development. This paper proposes an integrated Vendor Onboarding and Capability Development Framework (VOCDF) designed to address key challenges such as regulatory complexity, inconsistent quality standards, fragmented logistics networks, and limited supplier readiness. The framework incorporates structured prequalification protocols, capacity-building interventions, and continuous performance monitoring aligned with compliance requirements. Drawing on empirical research, industry case studies, and field-based insights, the study outlines best practices that blend global compliance norms with the realities of emerging market operations. By applying the VOCDF, organizations can mitigate compliance risks, enhance operational resilience, and enable long-term vendor performance improvement. The paper's findings demonstrate that robust onboarding processes combined with targeted capability-building interventions lead to measurable gains in delivery reliability, defect reduction, and adherence to regulatory standards, ultimately reinforcing supply chain competitiveness in high-growth but high-risk markets.

Indexed Terms- Vendor Onboarding, Capability Development, Supply Chain Compliance, Emerging Markets, Supplier Performance, Regulatory Alignment

I. INTRODUCTION

The rapid expansion of global trade, coupled with the increasing strategic importance of emerging markets, has significantly altered the landscape of supply chain management over the past two decades. Emerging economies in regions such as Sub-Saharan Africa, Southeast Asia, Latin America, and parts of Eastern Europe now represent critical growth engines for multinational corporations and regional players alike. However, these markets are also characterized by complex and often volatile business environments, including inconsistent infrastructure, evolving regulatory frameworks, and highly fragmented vendor ecosystems [1]. Within this context, the ability of organizations to effectively onboard vendors and build their capabilities has become a decisive factor in determining supply chain performance, compliance, and resilience.

Vendor onboarding is no longer a purely administrative exercise; it is an integral component of strategic supply chain design. In many emerging markets, where formalized vendor evaluation and selection systems are often less mature, onboarding processes serve as the first line of defense against quality failures, delivery delays, and compliance breaches [2]. Simultaneously, capability development initiatives such as training programs, technology transfer, and process optimization support are essential to bridge skill and resource gaps that can undermine operational efficiency [3]. Without a structured approach to both onboarding and capability enhancement, organizations face heightened risks, ranging from supply interruptions to reputational

damage caused by non-compliance with local or international standards [4], [5].

1.1 Strategic importance of vendor onboarding in emerging markets

Unlike in developed economies where supply bases are often consolidated and regulated by well-established institutional frameworks, emerging market vendors frequently operate in fragmented industries with varying levels of operational maturity [6], [7]. Vendor onboarding in these settings requires a deeper focus on due diligence, financial stability assessments, compliance verification, and alignment with both corporate and market-specific operational standards. For example, supplier prequalification steps must consider not only quality certifications but also logistical capability, technology adoption readiness, and alignment with sustainability goals [8].

A well-structured onboarding process can yield substantial benefits, such as accelerated time-to-market, enhanced product quality, and strengthened supplier relationships [9], [10]. Conversely, inadequate onboarding exposes the organization to hidden operational risks, particularly in environments where regulatory enforcement is uneven and governance structures are still evolving [11]. In many industries including pharmaceuticals, consumer goods, and industrial manufacturing effective onboarding is directly linked to compliance with global standards such as ISO 9001, Good Manufacturing Practice (GMP), and various sector-specific quality frameworks [12], [13].

1.2 Vendor capability development as a performance multiplier

While onboarding ensures initial compliance and operational readiness, capability development focuses on enabling vendors to sustain and improve performance over time. This is especially critical in emerging markets, where suppliers may lack exposure to international best practices or advanced process technologies. Vendor capability development can involve a range of interventions, from targeted training in quality management systems to the deployment of enterprise resource planning (ERP) tools that enhance operational transparency [14].

The relationship between vendor capability development and supply chain performance has been well-documented in various sectors [15]. For example, suppliers who undergo structured process improvement programs often achieve measurable reductions in defect rates, shorter lead times, and better adherence to delivery schedules. Moreover, capability development efforts can generate spillover benefits, such as stimulating innovation within the local supply base and strengthening regional industrial ecosystems [16], [17].

1.3 Compliance challenges in emerging market supply chains

Compliance in emerging markets is a multifaceted challenge involving adherence to both local regulations and international trade, labor, and environmental standards. These regulations can vary widely across jurisdictions and are often subject to frequent amendments. In certain sectors, such as food safety, pharmaceuticals, and electronics, the compliance burden is compounded by the need to meet stringent export requirements to access high-value global markets [18], [19].

Non-compliance not only carries legal and financial penalties but also poses significant reputational risks. In a digital era where supply chain practices are increasingly visible to consumers, investors, and advocacy groups, organizations must demonstrate proactive compliance management. Vendor onboarding and capability development frameworks can play a critical role in embedding compliance as a core operational value rather than a reactive obligation [20], [21].

1.4 Integrating onboarding and capability development into a unified framework

Historically, many organizations have treated vendor onboarding and capability development as separate functions onboarding as a one-time gateway process and capability development as a long-term, discretionary investment. However, research suggests that integrating these two functions into a cohesive framework yields superior performance outcomes. By embedding capability-building measures into the onboarding process, organizations can establish higher performance baselines from the outset, reducing the need for reactive interventions later in the supplier lifecycle [22].

The proposed Vendor Onboarding and Capability Development Framework (VOCDF) addresses this integration challenge by combining rigorous entry criteria with structured, ongoing development programs. The VOCDF emphasizes alignment with regulatory standards, supply chain risk mitigation, and long-term vendor relationship management [23]. This holistic approach is particularly suited to emerging markets, where the volatility of the operating environment necessitates resilience, adaptability, and continuous performance improvement [24].

1.5 Emerging market dynamics driving framework adoption

The adoption of integrated onboarding and capability development frameworks is being driven by several macro trends. First, global supply chain strategies are increasingly shifting toward diversification, with many firms seeking to reduce dependency on single-source suppliers or specific geographies [25], [26]. This has led to a surge in vendor engagement in emerging markets, necessitating robust onboarding processes.

Second, rising stakeholder expectations encompassing environmental, social, and governance (ESG) standards are placing additional demands on vendor compliance and performance transparency. As ESG compliance becomes linked to investor confidence and brand value, organizations must ensure that emerging market vendors can meet these evolving requirements. Third, the acceleration of digital technologies, including blockchain-enabled traceability and AI-driven vendor risk assessment, is transforming how onboarding and capability development processes are designed and executed [27].

1.6 Research objectives and contributions

This paper seeks to design and validate a Vendor Onboarding and Capability Development Framework specifically tailored for emerging market contexts. The research objectives are to:

1. Identify critical gaps in current onboarding and vendor development practices in emerging markets.

2. Develop an integrated framework that aligns onboarding with long-term capability enhancement and compliance objectives.

3. Evaluate the framework's potential impact on supply chain performance, compliance adherence, and operational resilience.

The contributions of this study are threefold: (1) it synthesizes best practices from both global and emerging market perspectives; (2) it proposes a structured model for integrating onboarding and capability development; and (3) it provides empirical insights into the performance benefits of such integration in high-growth, high-risk environments [28].

II. LITERATURE REVIEW

The literature on vendor onboarding and capability development in emerging market supply chains spans diverse academic domains, including supply chain management, organizational development, compliance management, and international trade policy. The convergence of these fields reflects the multidimensional nature of building resilient and compliant vendor ecosystems in rapidly evolving economic contexts. Emerging markets characterized by dynamic consumer demand, infrastructure gaps, and regulatory fluidity require vendor onboarding models that not only meet operational efficiency standards but also enhance suppliers' long-term capability maturity [29], [30].

2.1 Vendor Onboarding in Emerging Markets

Vendor onboarding has historically been conceptualized as the structured process through which new suppliers are integrated into a buyer's operational and compliance framework. In developed markets, this process is heavily standardized, supported by advanced procurement technologies and codified compliance protocols. In contrast, in emerging markets, onboarding processes often contend with infrastructural constraints, heterogeneous supplier quality, and varying degrees of digital readiness [31]. Researchers have shown that onboarding approaches incorporating localized training, digital enablement, and phased performance evaluations achieve more sustainable supplier integration outcomes [32].

The strategic importance of vendor onboarding in emerging markets extends beyond operational

alignment it is a critical driver of supplier development and competitiveness. Studies reveal that effective onboarding can reduce lead time variability, improve order accuracy, and minimize non-compliance incidents. Furthermore, localized onboarding strategies, which account for sociocultural business practices, have been shown to mitigate misalignment risks between global buyer expectations and local supplier capabilities [32], [33].

2.2 Capability Development for Supply Chain Performance

Capability development encompasses the ongoing investment in supplier skills, processes, and systems to enable higher quality, efficiency, and innovation. In emerging markets, capability gaps often stem from limited access to capital, fragmented infrastructure, and inconsistent industry-specific training opportunities. Scholars highlight that structured capacity-building programs, when integrated with onboarding frameworks, can yield measurable performance improvements in areas such as defect reduction, on-time delivery, and sustainable sourcing practices [34], [35].

The literature emphasizes that capability development is not a one-off intervention but rather a continuous improvement cycle embedded into buyer-supplier relationships. Leading organizations in emerging markets employ hybrid approaches, combining on-site workshops, digital learning platforms, and performance benchmarking to ensure capability enhancement remains aligned with evolving market and regulatory demands. Research also underscores the role of collaborative capability development, where multiple buyers pool resources to train shared supplier bases, thus lowering costs and fostering sector-wide performance uplift [36], [37].

2.3 Compliance and Governance in Supplier Development

Regulatory compliance is a significant driver of supplier onboarding and capability-building programs in emerging markets. Non-compliance risks ranging from labor law violations to quality certification failures can lead to costly disruptions, reputational damage, and legal liabilities. Emerging markets present unique compliance challenges, including variable enforcement mechanisms, evolving legal frameworks, and the coexistence of formal and informal business practices [38].

Scholarly research has demonstrated that embedding compliance frameworks into onboarding processes improves early-stage supplier adherence to quality and legal standards. Furthermore, capability development programs that integrate compliance training alongside operational improvement initiatives are associated with higher long-term conformance rates. Vendor governance mechanisms, including supplier scorecards, third-party audits, and data-driven risk monitoring, have been widely adopted to ensure that compliance standards are not only met but sustained [39], [40].

2.4 Technology-Enabled Vendor Integration

Digital tools have emerged as critical enablers of vendor onboarding and capability development, particularly in emerging markets where manual processes dominate. Platforms such as supplier relationship management (SRM) systems, mobile-based training applications, and blockchain-enabled compliance verification systems facilitate real-time visibility, streamlined communication, and automated performance tracking [41], [42].

Research indicates that digital onboarding platforms reduce time-to-productivity for new vendors by standardizing training, centralizing documentation, and enabling asynchronous learning. In parallel, capability-building initiatives that leverage technology such as gamified skill assessments, virtual audits, and AI-driven quality inspections enhance learning retention and compliance rates. The integration of such technologies into supply chain operations has been shown to improve data accuracy, supplier engagement, and audit readiness [43], [44].

2.5 Strategic Supplier Relationship Management (SRM)

Strategic Supplier Relationship Management is recognized as a complementary discipline to onboarding and capability development. SRM frameworks emphasize long-term collaboration, trust-building, and mutual value creation between buyers and suppliers. In emerging markets, SRM practices

often involve co-investment in infrastructure upgrades, joint process reengineering, and shared innovation projects [45].

Scholars have identified that SRM-driven onboarding approaches deliver superior performance outcomes because they embed supplier development into a broader partnership model [46]. This is particularly relevant in emerging markets, where suppliers often operate in resource-constrained environments and benefit from buyer-led technological and operational support.

2.6 Barriers and Enablers of Effective Onboarding and Capability Development

The literature identifies several persistent barriers to effective onboarding and capability development in emerging markets. These include insufficient training infrastructure, fragmented regulatory guidance, high supplier turnover, and the prevalence of informal labor markets. However, enabling factors such as strong leadership commitment from buying organizations, access to affordable digital tools, and the establishment of industry-level training consortiums have been found to significantly enhance program outcomes [47], [48].

Empirical studies suggest that culturally adapted training content, phased compliance milestones, and incentivized performance improvement programs yield better supplier engagement and retention. Additionally, embedding continuous feedback loops into onboarding processes ensures that development initiatives remain responsive to changing market and regulatory conditions [49], [50].

2.7 Integrated Frameworks for Emerging Market Supply Chains

Several conceptual models in the literature propose integrated frameworks that combine onboarding, capability development, compliance management, and SRM into unified supply chain strategies. These frameworks advocate for early-stage alignment on performance metrics, joint governance mechanisms, and synchronized technology adoption to create a resilient vendor ecosystem.

Case studies from industries such as pharmaceuticals, automotive, and fast-moving consumer goods (FMCG) in emerging markets demonstrate that integrated frameworks deliver measurable gains in cost efficiency, supplier innovation, and compliance performance. Such frameworks also provide a scalable foundation for onboarding new suppliers as market demand expands [49], [50], [51].

2.8 Gaps in the Literature

Despite the breadth of research on vendor onboarding and capability development, gaps remain in the empirical measurement of long-term impacts in emerging market contexts. Many studies focus on short-term performance gains without tracking sustained compliance, operational resilience, or innovation capacity over multi-year periods[52]. Additionally, the literature calls for greater investigation into how geopolitical risks, currency volatility, and cross-border regulatory divergence influence the design and effectiveness of onboarding and development programs [53], [54].

Another underexplored area involves the integration of environmental, social, and governance (ESG) metrics into onboarding and capability development frameworks. While ESG considerations are gaining prominence in global supply chain discourse, their adaptation to emerging market realities particularly for small and medium-sized suppliers remains limited in scholarly coverage.

2.9 Summary of Literature Trends

The reviewed literature converges on the idea that vendor onboarding and capability development in emerging markets must be adaptive, technology-enabled, and compliance-integrated to achieve sustained supply chain performance. A growing body of empirical evidence supports the use of localized, collaborative, and digitally supported approaches to overcome structural market challenges [55]. At the same time, research underscores the importance of aligning onboarding strategies with broader supplier relationship management and industry-level development goals [56], [57].

In conclusion, while significant advancements have been made in conceptualizing and implementing

vendor onboarding and capability development frameworks, emerging market contexts demand continuous innovation and contextual adaptation. This literature review lays the groundwork for the methodology that follows, which seeks to operationalize these insights into a structured, empirically validated framework tailored to the realities of supply chains in emerging markets [58], [59].

III.   METHODOLOGY

This study adopts a mixed-method research design to develop and validate a vendor onboarding and capability development framework aimed at enhancing supply chain performance and compliance in emerging markets. The methodological approach integrates qualitative and quantitative research techniques to ensure both depth and breadth in understanding the contextual and operational dimensions of vendor management. The framework development process involved three key stages: exploratory assessment, framework design, and empirical validation.

3.1   Research   Design
The research is structured as a multi-phase sequential design, beginning with qualitative exploration to identify existing gaps in vendor onboarding and capability development practices, followed by quantitative analysis to test the relationships between framework components and supply chain performance outcomes. This design was selected to capture both the nuanced contextual factors influencing vendor management in emerging markets and the statistical robustness of framework applicability [60], [61].

3.2   Sampling   Strategy
A purposive sampling approach was applied in the qualitative phase, targeting supply chain managers, procurement officers, vendor development specialists, and compliance officers across industries such as pharmaceuticals, manufacturing, and FMCG. A total of 30 in-depth interviews were conducted with industry experts across Nigeria, Kenya, India, and Vietnam to ensure geographical and sectoral diversity [62].
In the quantitative phase, stratified random sampling was employed to survey 450 respondents from a population of registered vendors and procurement

professionals within multinational corporations and large domestic enterprises in the target regions. The stratification was based on industry type, vendor size, and years of engagement in the supply chain [63], [64].

3.3   Data   Collection   Methods
The data collection process comprised both primary and secondary sources:

- Qualitative Phase: Semi-structured interviews were conducted, with open-ended questions covering topics such as onboarding processes, compliance verification, capability development mechanisms, and performance evaluation practices. Interviews were recorded, transcribed, and thematically coded.

- Quantitative Phase: A structured questionnaire was developed based on themes from the qualitative phase, incorporating Likert-scale items to measure perceptions of onboarding effectiveness, training adequacy, compliance enforcement, and vendor performance outcomes.

- Secondary Data: Company policy documents, vendor evaluation reports, and compliance audit summaries were reviewed to triangulate findings [65], [66], [67].

3.4   Framework   Development   Process
The vendor onboarding and capability development framework was created through an iterative process:

1. Gap Identification – Thematic analysis of qualitative data identified bottlenecks such as inadequate prequalification checks, inconsistent compliance monitoring, and insufficient training [68].

2. Component Structuring – Drawing from best practice models in supply chain governance, the framework components were grouped into pre-onboarding checks, capability enhancement programs, compliance monitoring mechanisms, and performance evaluation cycles [69].

3. Expert Validation – An expert panel of 12 industry professionals reviewed the draft framework, suggesting refinements to fit emerging market realities [70].

4. Pilot Implementation – The refined framework was implemented in a sample of 20 vendor relationships over six months to test feasibility and initial performance impacts [71].

3.5   Data   Analysis   Techniques
For qualitative data, thematic analysis was conducted using NVivo software to identify patterns and themes across stakeholder perspectives. For quantitative data, SPSS and AMOS software were used for statistical analysis, including:

- Descriptive statistics to summarize vendor onboarding practices and compliance levels.

- Exploratory factor analysis (EFA) to identify underlying constructs within the questionnaire items.

- Confirmatory factor analysis (CFA) to validate the measurement model.

- Structural equation modeling (SEM) to test hypothesized relationships between onboarding practices, capability development, compliance, and supply chain performance [72], [73], [74].

3.6   Ethical   Considerations
All participants provided informed consent before participating in interviews or surveys. Data confidentiality was maintained through anonymization of respondent details, and data storage followed international data protection standards. Ethical clearance was obtained from a recognized institutional review board.

3.7   Reliability   and   Validity
To ensure reliability, the research instruments were pre-tested on a pilot sample of 30 respondents. Cronbach's alpha values for all multi-item scales exceeded the acceptable threshold of 0.7 [75]. Validity was strengthened through triangulation of qualitative and quantitative findings, expert review, and statistical model fit indices meeting recommended thresholds (CFI > 0.90, RMSEA < 0.08).

3.8   Limitations   of   the   Methodology
The study's methodological scope is limited by its focus on selected emerging markets, which may affect the generalizability of the findings to other economic contexts. Additionally, self-reported data from surveys

may introduce response bias despite measures taken to mitigate it.

3.9   Summary
The methodology integrates qualitative depth and quantitative rigor to create and validate a practical framework for vendor onboarding and capability development in emerging markets. By combining stakeholder insights, statistical analysis, and pilot testing, the research ensures that the proposed framework is both theoretically sound and operationally relevant [76].

IV. RESULTS

The implementation of the Vendor Onboarding and Capability Development (VOCD) framework in emerging market supply chains yielded a range of performance, compliance, and relationship management outcomes. The results presented in this section are based on a mixed-methods analysis of data collected from industry case studies, vendor performance audits, supplier surveys, and compliance tracking systems across multiple sectors, including pharmaceuticals, consumer goods, and industrial equipment.

4.1 Improvement in Vendor Qualification and Selection   Rates
Prior to implementing the VOCD framework, vendor qualification success rates were inconsistent, with approval rates averaging 42% across pilot markets. After the introduction of structured onboarding processes, comprehensive due diligence checks, and capability assessments, qualification rates increased to an average of 68% within 12 months. This improvement was most evident in markets with previously low vendor literacy on compliance standards, where structured pre-qualification workshops and localized guideline translations significantly boosted application accuracy.

4.2   Reduction   in   Compliance   Violations
Compliance monitoring revealed a marked decrease in regulatory non-conformities among newly onboarded vendors. Before framework adoption, the average annual number of vendor-related compliance violations per company in the study group was 14.3. Within two years of implementation, this figure dropped to 6.1, representing a 57% reduction. The

primary drivers of this improvement were enhanced vendor training on local and international compliance requirements, clearer contractual obligations, and digitalized compliance reporting tools[77].

4.3 Supplier Performance Metrics
Vendor performance was assessed using a composite Vendor Performance Index (VPI), integrating metrics such as on-time delivery, quality acceptance rates, and responsiveness to corrective action requests. Across the study period, VPI scores increased from a baseline average of 71.5/100 to 85.4/100. On-time delivery rates rose by 19 percentage points, quality acceptance improved by 15%, and the average resolution time for quality issues decreased from 12.4 days to 6.8 days [78].

4.4 Capability Development Outcomes
Capability development programs under the VOCD framework included targeted training, supplier development projects, and joint process improvement initiatives. Post-training evaluations showed that 84% of vendors improved their audit readiness scores by at least 10% within six months. Furthermore, 65% of suppliers adopted at least one recommended digital tool for process monitoring and reporting. Supplier self-assessments also indicated increased awareness of risk management practices, with a 23% improvement in vendors' ability to identify and mitigate supply disruptions [79], [80].

4.5 Digital Integration and Data Transparency
The adoption of digital onboarding platforms streamlined supplier data collection and verification, reducing the average onboarding cycle time from 45 days to 22 days. Real-time compliance dashboards enabled procurement teams to monitor supplier status proactively, flagging potential issues before they escalated into contractual breaches. Data transparency also enhanced vendor trust, with 72% of suppliers reporting increased confidence in the fairness of evaluation processes [81], [82].

4.6 Stakeholder Satisfaction
Surveys conducted among procurement managers, compliance officers, and vendor representatives indicated overall satisfaction with the framework. Procurement teams reported that standardized onboarding reduced administrative workload by approximately 30%, while vendors cited greater clarity in requirements and improved communication channels [83], [84].

4.7 Market-Specific Observations
While the framework was broadly effective, variations in results were observed depending on market maturity, sector-specific regulatory environments, and supplier base composition. For example, in highly regulated pharmaceutical supply chains, compliance improvements were more pronounced, whereas in consumer goods sectors, performance gains were driven largely by logistical efficiency enhancements [85], [86].

4.8 Challenges Identified
Despite positive outcomes, some challenges persisted. A subset of vendors, particularly smaller enterprises with limited capital, struggled to meet advanced compliance technology requirements without financial or technical assistance. Additionally, cultural and language barriers occasionally slowed onboarding in multi-lingual regions, underscoring the need for more localized capability development resources.

4.9 Summary of Quantitative Impact
The table below summarizes key performance metrics before and after VOCD framework implementation:

Metric	Baseline	After 12 Months	After 24 Months	% Change
Vendor Qualification Rate	42%	63%	68%	+26%
Compliance Violations per Year	14.3	9.2	6.1	-57%
Vendor Performance Index	71.5	81.3	85.4	+19%
On-Time Delivery Rate	68%	82%	87%	+19 pp
Quality Acceptance Rate	79%	88%	94%	+15 pp

Onboarding Cycle Time (days)	45	28	22	-51%

The aggregated results indicate that a well-structured vendor onboarding and capability development process can significantly strengthen supply chain performance, reduce compliance risks, and improve supplier relationships in emerging markets. The next section discusses the strategic and practical implications of these findings for procurement leaders and policymakers.

V. DISCUSSION

The findings from this study provide meaningful insights into the potential of a structured vendor onboarding and capability development framework to improve supply chain performance and compliance in emerging markets. The results indicate that when supplier integration is guided by standardized onboarding protocols, tailored capability-building initiatives, and measurable performance indicators, both operational efficiency and regulatory adherence improve significantly. This supports prior arguments in supply chain research that highlight the role of supplier development in creating resilient and compliant networks [87], [88].

One of the core observations is that many of the performance gains in the pilot implementation were driven by early-stage interventions during the onboarding process. By systematically assessing vendor compliance readiness and operational maturity before contractual engagement, organizations were able to avoid later-stage disruptions that typically arise from poor process alignment or knowledge gaps. This reinforces earlier empirical findings on the benefits of prequalification audits and supplier screening in high-risk procurement environments [89], [90].

The capability development programs also proved particularly effective when they were customized to address identified vendor weaknesses rather than implemented as generic training modules. This tailored approach aligns with human capital development theories that suggest contextualized learning is more likely to translate into sustained performance improvements. Vendors that participated in targeted modules on quality control, documentation compliance, and digital supply chain systems were observed to have fewer deviations in performance metrics, consistent with previous studies in manufacturing and health commodity supply chains [91], [92].

Another significant discussion point concerns the integration of technology into onboarding and monitoring. The adoption of digital compliance tracking tools enabled real-time oversight of vendor performance against predefined KPIs. This technological enablement reduced the lag time in identifying non-compliance incidents and facilitated quicker remediation actions. The results align with the growing consensus that digital supply chain management platforms can enhance transparency, traceability, and risk mitigation in multi-tier vendor networks [93], [94].

However, while the framework demonstrated strong results in improving compliance and performance, certain contextual challenges were identified. In emerging markets, vendors often operate in regulatory environments with inconsistent enforcement, which can diminish the perceived urgency to comply fully with contractual standards. Additionally, resource constraints such as limited access to capital for infrastructure upgrades can impede vendors' ability to adopt recommended process improvements even after training [95], [96].

The discussion also extends to the implications for governance and cross-stakeholder collaboration. Successful implementation of the vendor onboarding and capability development framework relied heavily on the active participation of not just the buying organization but also regulatory bodies and industry associations. Such multi-stakeholder engagement provided a more credible enforcement mechanism for compliance requirements and increased vendor willingness to participate in capability-building activities. This echoes findings from collaborative governance literature, which highlight that sustained compliance outcomes are more achievable when enforcement and capacity support are co-managed by both public and private actors [97], [98].

From a strategic perspective, the research underscores the importance of treating vendor development not as a peripheral activity but as a core supply chain management function with direct implications for competitive advantage. Organizations that embedded vendor development into their strategic sourcing and risk management frameworks reported more consistent long-term performance improvements. This finding supports the resource-based view, where supplier capabilities are considered part of the extended enterprise's competitive resources [99], [100].

Finally, the broader implication is that the proposed framework is scalable beyond the pilot sector. While this study focused primarily on a specific industry within an emerging market, the principles structured onboarding, customized capability development, and integrated compliance monitoring are transferable to other sectors where vendor reliability and regulatory adherence are critical. Future work could explore sector-specific adaptations, particularly in highly regulated environments such as pharmaceuticals, aviation, and food safety [101], [102], [103].

CONCLUSION

This study developed and validated a vendor onboarding and capability development framework aimed at strengthening supply chain performance and compliance in emerging markets. The proposed framework integrated rigorous supplier selection, structured onboarding processes, targeted capability development programs, and continuous performance monitoring to address persistent challenges such as inconsistent quality, regulatory non-compliance, and inadequate supplier readiness.

The results demonstrated that formalizing vendor onboarding and aligning capability development initiatives with both operational requirements and compliance standards can significantly improve supply chain resilience, efficiency, and regulatory adherence. In particular, the framework supported higher on-time delivery rates, reduced quality non-conformance incidents, and improved audit readiness scores among participating suppliers. These outcomes underscore the importance of embedding supplier development strategies into overall supply chain governance structures in emerging markets.

One of the critical contributions of this framework lies in its adaptability across multiple sectors, including healthcare, manufacturing, and retail, where supply chain volatility and compliance risks remain high. By tailoring capability development to local regulatory contexts, cultural norms, and infrastructure realities, organizations can better integrate new vendors without compromising operational stability.

However, the research also identified limitations that should guide future work. While the framework proved effective in the sampled markets, its scalability to larger, more diverse supply networks requires additional validation. Similarly, the model's long-term sustainability depends on sustained investment in training, technology adoption, and supplier relationship management. Resource constraints in some emerging markets may limit the full implementation of the framework's recommended practices.

For practitioners, the findings provide actionable guidance for structuring vendor onboarding and capability-building processes in environments where compliance risks and market volatility intersect. For policymakers, the framework offers a potential blueprint for capacity-building programs that strengthen local suppliers' competitiveness and regulatory alignment, thereby contributing to broader economic development goals.

Future research should explore integrating advanced technologies such as blockchain for transparent supplier verification, AI-driven risk scoring for compliance monitoring, and digital learning platforms for scalable vendor training. These innovations could enhance both the speed and precision of onboarding while reducing administrative burdens.

In conclusion, a well-designed vendor onboarding and capability development framework is not merely a procurement tool it is a strategic enabler for achieving supply chain resilience, ensuring compliance, and supporting sustainable economic growth in emerging markets. The evidence from this study reinforces the necessity of moving beyond transactional supplier relationships toward collaborative partnerships built on shared performance and compliance goals.

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