

Building a Trusted Middleman Model: A Strategy for Connecting International Handicraft Piano Workshops with the Vietnamese Market in the Post-Digital Era

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ABSTRACT : *This study develops a Trusted Middleman platform model connecting international artisan musical instrument workshops with the Vietnamese market. Despite digitalisation, high-value handcrafted instruments remain constrained by information asymmetry, quality uncertainty, logistics risks, weak brand recognition and fragmented distribution. A mixed-method design is proposed. Qualitative interviews identify trust-building mechanisms and quality assurance requirements. PLS-SEM examines how perceived authenticity, quality, platform trust, digital certification, perceived risk and customer experience influence purchase intention. An integrated AHP–TOPSIS model evaluates and ranks international artisan workshops using multiple supplier-selection criteria, while an asset-light supply chain optimisation model minimises logistics, transaction and quality-risk costs under service, delivery and certification constraints. The study contributes a conceptual and operational framework for a hybrid platform combining marketplace functions with supplier screening, certification, quality control and trust governance. It offers practical implications for cross-border artisan trade, platform design and value-based consumption in emerging markets.*

KEYWORDS - *Trusted Middleman; Platform Business Model; Artisan Musical Instruments; Asset-Light Supply Chain; AHP–TOPSIS.*

I. INTRODUCTION

In the post-digital economy, the expansion of international trade is determined not only by the operational efficiency of digital platforms, but also by their capacity to establish trust, verify authenticity, assure product quality and manage cross-border transaction risks. Digital platforms have reshaped market structures by connecting multiple user groups and reducing the costs associated with search, matching and coordination [1]. Nevertheless, digital connectivity alone is insufficient in markets for high-value handcrafted goods, particularly artisan musical instruments such as guitars, violins and customised instruments. Before completing a purchase, buyers often cannot reliably assess tonal quality, material provenance, craftsmanship, structural durability, workshop reputation or after-sales service. This condition reflects the classic “market for lemons” problem,

whereby information asymmetry and uncertainty regarding product quality can undermine market efficiency and weaken consumer confidence [2].

This challenge is especially relevant in Vietnam, where demand for music education, premium products and culturally distinctive goods is increasing, while trustworthy distribution channels for imported artisan instruments remain limited. Vietnamese consumers continue to favour industrially manufactured instruments because cross-border purchases from artisan workshops involve uncertainty concerning quality verification, logistics, certification, warranty and post-purchase assistance. From a transaction cost perspective, these uncertainties increase the resources required for searching, evaluating, negotiating, monitoring and resolving disputes in international exchanges [3]. The central issue is therefore not simply how to

connect foreign workshops with Vietnamese buyers, but how to establish a trusted intermediary architecture capable of reducing information asymmetry, verifying quality and coordinating an asset-light cross-border supply chain.

Conventional marketplace models are not fully equipped to address the quality and risk characteristics of handcrafted musical instruments. Most digital platforms primarily support product listing, communication and payment, whereas trust-intensive transactions require stronger institutional safeguards. Research on online marketplaces demonstrates that institution-based trust is essential when transactions occur between parties without prior relationships [4]. A Trusted Middleman should therefore extend beyond standard platform functions by providing supplier screening, source-based inspection, digital certification, logistics coordination, customer consultation, warranty facilitation and dispute resolution. From a business and fintech perspective, the model may integrate secure payment mechanisms, digital identity, product-level certification and transaction-risk management. From an AI and logistics perspective, it can enable data-driven supplier assessment, quality scoring, demand analysis and cost-risk optimisation.

Accordingly, this study aims to develop a Trusted Middleman platform model connecting international artisan musical instrument workshops with Vietnamese consumers. First, it conceptualises the role and operating mechanism of the intermediary within cross-border artisan supply chains. Second, it investigates the determinants of consumer trust and purchase intention through a PLS-SEM framework, which is appropriate for analysing complex relationships among latent constructs in behavioural and management research [5]. Third, it proposes an integrated AHP-TOPSIS model for workshop selection, using AHP to determine criteria weights and TOPSIS to rank alternatives according to their distance from the ideal solution [6], [7]. Fourth, it formulates an asset-light supply chain optimisation model that balances logistics cost, transaction cost, delivery time and quality-risk cost.

The remainder of the paper is organised as follows. The literature review examines platform models, information asymmetry, trust mechanisms, digital certification, supplier selection and asset-light supply chains. The methodology presents the mixed-method design, including qualitative interviews, PLS-SEM, AHP-TOPSIS and supply chain optimisation. The results report the empirical and modelling outcomes, while the discussion interprets their theoretical, managerial and operational implications. The conclusion summarises the study's contributions, limitations and directions for future research.

II. LITERATURE REVIEW

1. Consumer trust, quality uncertainty and the specific nature of artisan musical instruments

Trust is essential in digital commerce because consumers frequently purchase without physically inspecting products, knowing sellers personally or fully understanding seller behaviour. It is commonly defined as the belief that a seller or platform possesses the competence, integrity and benevolence required to complete transactions reliably [8]. In online markets, trust also functions as a mechanism for reducing uncertainty, information limitations and opportunistic risk [9]. This is particularly important for artisan musical instruments, whose value depends on sound quality, craftsmanship, material authenticity, durability and after-sales support.

Handcrafted instrument markets are characterised by substantial information asymmetry. Akerlof's theory of quality uncertainty explains that buyers may struggle to distinguish superior from inferior products, thereby weakening confidence and limiting the ability of high-quality producers to justify premium prices [2]. This problem is intensified because many critical attributes, including wood seasoning, structural stability, tonal balance and workmanship, cannot be verified through photographs or product descriptions alone.

Instrument quality is multidimensional, incorporating physical, acoustic, aesthetic and symbolic characteristics. Although wood remains important in guitar production [10], experimental evidence suggests that wood species may have only

a limited effect on perceived sound quality [11]. In cross-border transactions, further uncertainty regarding certification, logistics, warranty and product authenticity increases perceived risk and may reduce purchase intention [12].

2. Institution-based trust and the limitations of ordinary digital marketplaces

Digital marketplaces reduce search costs and broaden market access, but they do not automatically generate adequate trust for high-value, quality-sensitive products. Multi-sided platform theory explains that platforms create value by coordinating interactions among distinct user groups and leveraging network effects [1]. However, where quality is difficult to verify, platform performance depends as much on governance credibility as on user scale. In artisan instrument markets, greater product variety may increase uncertainty when supplier screening, quality assurance and dispute resolution are inadequate.

Pavlou and Gefen [4] describe institution-based trust as confidence arising from effective third-party safeguards, including feedback systems, escrow services and payment guarantees. A Trusted Middleman must therefore operate as an active institutional intermediary that establishes rules, verifies claims, constrains opportunistic behaviour and protects both buyers and sellers.

Conventional trust mechanisms remain insufficient for handcrafted instruments. Consumer ratings may reflect satisfaction with appearance or delivery rather than expert assessment of tonal projection, intonation, workmanship or material stability. Likewise, escrow and payment guarantees reduce financial exposure but cannot confirm technical quality. Trust must consequently include expert verification, source inspection and product-level digital certification.

Trust is also multidimensional [8], encompassing confidence in the workshop, product authenticity, platform screening, logistics, payment and after-sales support. Review systems further face authenticity and fake-review risks [13]. A robust model should therefore combine verified buyer

feedback, expert evaluations, audio-visual evidence, inspection reports and product data.

2.3. Verification and quality confirmation methods in musical instrument markets

Musical instrument verification generally involves five complementary methods: expert authentication, technical inspection, acoustic assessment, provenance documentation and legal-material compliance. Expert authentication is particularly important for fine string instruments because specialists evaluate makers, construction techniques, labels, varnish, wood and historical records. However, this process may be costly, inaccessible and dependent on individual reputation.

Technical inspection assesses an instrument's physical condition and playability, including structural defects, repairs, intonation and component stability. Acoustic evaluation is more complex because sound quality combines measurable characteristics with subjective perceptions. Evidence from Carcagno et al. [11] indicates that perceived quality should be assessed experimentally rather than inferred solely from material labels. Accordingly, digital sound samples should follow standardised recording protocols.

Provenance verification may include certificates, serial numbers, invoices, repair histories and ownership records. Digital identities linked through QR codes, NFC, RFID or secure signatures can reduce document loss and forgery. Legal compliance is also essential where protected woods or animal-derived materials are involved. CITES regulates international trade in endangered species [14].

The principal weakness of current practice is fragmentation. Authentication, inspection, payment, logistics and customer advice are often handled separately. A Trusted Middleman should integrate these functions into a coherent assurance architecture.

2.4. Digital certification, blockchain and digital product passports

Digital technologies can strengthen trust by making quality information more structured, traceable and verifiable. Blockchain supports supply

chain transparency through tamper-resistant records, although adoption depends on organisational readiness and practical implementation capacity [15]. However, blockchain cannot guarantee that initial data are accurate; it only preserves the information entered. Digital certification must therefore combine secure records with inspection protocols, expert validation and accountability.

Digital Product Passports offer a more applicable framework. Regulation (EU) 2024/1781 promotes interoperable, product-specific data across supply chains [16]. For artisan instruments, passports could include maker identity, material origin, specifications, inspection results, audio samples, warranty and ownership history. QR codes, RFID and NFC can connect physical instruments to verified digital profiles. ISO/IEC 20248:2022 further enables digitally signed barcode or RFID data [17]. Nevertheless, DPPs must be adapted to craftsmanship, acoustic performance and expert-dependent quality assessment.

2.5. Digital media, AI and the verification of real quality

Digital transformation in artisan musical instrument trade should extend beyond online sales to support quality communication, decision-making and risk reduction. Multimedia verification, including high-resolution images, production videos, standardised sound recordings, 360-degree views and live consultation, can reduce uncertainty when governed by clear technical protocols. Expert-assisted evaluation should complement these tools through structured assessments by luthiers, teachers, performers and repair specialists, covering tone, playability, condition, craftsmanship and price-quality suitability.

AI can further support quality scoring by organising product data, detecting inconsistencies, analysing acoustic features and matching instruments with consumer preferences. However, it should assist rather than replace professional judgement. Fintech mechanisms can strengthen transaction assurance by linking payment release to certificate validation, inspection, logistics handover

and buyer acceptance, extending conventional escrow and guarantee functions [4].

Finally, IoT-based logistics monitoring can record humidity, temperature and impact exposure during transport. Because such technologies increase cost, the platform should apply tiered verification according to product value and risk level.

2.6. Research gaps

The first gap is the absence of a trust model specifically designed for cross-border artisan musical instruments. Existing e-commerce trust literature provides strong foundations on institution-based trust, perceived risk and online marketplace governance [8]–[9], [4]. However, these studies mostly examine general online shopping or marketplace transactions. They do not fully address products where quality is sensory, expert-dependent, craft-based and difficult to standardise. Musical instruments require a more specialised trust model that integrates authenticity, acoustic quality, condition, provenance, legal-material compliance and after-sales support.

The second gap concerns the difference between reputation and verified quality. Most digital commerce platforms rely heavily on ratings, reviews and seller reputation. These signals are useful but insufficient for artisan instruments because non-expert reviewers may not be able to evaluate real quality. A guitar may receive positive reviews because it looks beautiful and arrived quickly, while its long-term tonal stability or structural quality remains uncertain. Therefore, research needs to move from reputation-based trust to evidence-based trust, including expert inspection, digital certificates, standardised sound samples, material records and verified buyer feedback.

The third gap is the limited integration of product authentication with supply chain governance. In fine instrument markets, authentication certificates and expert appraisals exist, but they are usually separate from logistics, payment, after-sales service and consumer decision support. Conversely, e-commerce platforms may manage payment and delivery but lack deep product

authentication. This separation creates an incomplete trust chain. The proposed Trusted Middleman model addresses this gap by positioning the intermediary as a supply chain orchestrator and quality-trust institution rather than merely a digital marketplace.

The fourth gap concerns digital certification and DPP adaptation. Digital Product Passport research is growing rapidly, especially in sustainability-oriented sectors such as batteries, textiles, electronics and circular supply chains. However, limited attention has been paid to artisan cultural products and musical instruments. This is a significant practical gap because artisan instruments need product-level identity, provenance records, material documentation and ownership history, yet their quality cannot be reduced to standard industrial specifications. A digital passport for an artisan guitar or violin must combine technical data, acoustic evidence, expert judgement and cultural storytelling.

The fifth gap lies in the lack of integrated methodological design. Many studies examine consumer trust using survey models; others examine supplier selection using multi-criteria decision-making; others discuss blockchain traceability or supply chain optimisation. Few studies combine these layers into one operational model. For the Vietnamese market, an integrated design is necessary because the business problem is multidimensional: consumers must trust the platform, workshops must be selected systematically, digital certification must be credible, and logistics must be cost-effective. A single-method approach would not capture this complexity.

The sixth gap is contextual. Vietnam represents a growing but under-researched market for premium artisan musical instruments. Consumers may be increasingly interested in artistic, personalised and higher-quality products, yet the market infrastructure for trusted cross-border purchasing remains underdeveloped. International workshops may also lack knowledge of Vietnamese consumer behaviour, pricing expectations, payment habits, logistics constraints and service requirements. This creates a practical need for a

platform model that translates international craftsmanship into a locally trusted consumption experience.

The seventh gap concerns the role of AI and fintech in trust creation. Existing discussions of musical instrument trade rarely integrate AI-supported recommendation, acoustic data analysis, digital identity, escrow-linked verification, fraud detection and logistics risk analytics. Yet these technologies can convert a conventional intermediary into a data-driven Trusted Middleman. The research gap is therefore not only theoretical but operational: how can digital tools be designed as part of a coherent trust architecture rather than as isolated technological add-ons?.

III. METHODOLOGY

3.1. Research Design and Conceptual Framework

This study adopts an exploratory sequential mixed-method design to develop and validate a Trusted Middleman platform connecting international artisan musical instrument workshops with Vietnamese consumers. The research problem is multidimensional, involving consumer trust, quality uncertainty, digital certification, supplier credibility, transaction assurance and asset-light logistics coordination. Accordingly, qualitative exploration is first used to identify key trust mechanisms, verification requirements and operational barriers in cross-border artisan instrument trade. These findings inform the construction of the questionnaire, refinement of measurement items and specification of the structural model.

The conceptual framework includes eight latent constructs: Perceived Authenticity, Perceived Quality, Digital Certification Effectiveness, Platform Trust, Perceived Risk, Customer Experience, Perceived Value and Purchase Intention. The model assumes that authenticity, quality, certification and customer experience strengthen platform trust, while trust and certification reduce perceived risk. Perceived authenticity, quality and customer experience also enhance perceived value, which subsequently contributes to purchase intention. Platform trust is

positioned as the central mediating mechanism linking product uncertainty with consumer decision-making. The framework is tested using PLS-SEM, while AHP-TOPSIS and supply chain optimisation are applied to evaluate supplier suitability and operational feasibility.

3.2. Measurement, Sampling and Qualitative Validation index

The proposed structural model is designed to examine how consumer perceptions of authenticity, product quality, digital certification and customer experience influence platform trust, perceived risk, perceived value and purchase intention in the context of a Trusted Middleman platform for international artisan musical instruments.

$$\begin{cases} PTR_i = \beta_1 PAU_i + \beta_2 PQU_i + \beta_3 DCE_i + \beta_4 CEX_i + \varepsilon_{1i} \\ PRK_i = \beta_5 PTR_i + \beta_6 DCE_i + \varepsilon_{2i} \\ PVL_i = \beta_7 PQU_i + \beta_8 PAU_i + \beta_9 CEX_i + \varepsilon_{3i} \\ PIN_i = \beta_{10} PTR_i + \beta_{11} PRK_i + \beta_{12} PVL_i + \beta_{13} CEX_i + \varepsilon_{4i} \end{cases}$$

The questionnaire was designed to measure the principal constructs of the Trusted Middleman model using a five-point Likert scale ranging from 1, “strongly disagree”, to 5, “strongly agree”. It contains three sections. The first records demographic and behavioural characteristics, including age, gender, income, musical experience, preferred instrument, prior online purchasing, international purchasing experience and willingness to pay. The second measures Perceived Authenticity, Perceived Quality, Digital Certification Effectiveness, Platform Trust, Perceived Risk, Customer Experience, Perceived Value and Purchase Intention. The third includes open-ended questions concerning expected platform services, verification mechanisms and barriers to purchasing international artisan instruments.

The target population comprises Vietnamese consumers with actual or potential interest in musical instruments, including learners, amateur and professional musicians, teachers, collectors, parents and urban middle-class consumers. Purposive and snowball sampling were employed through music schools, instrument shops, university groups, music communities and social media. Data were collected between April and May

2026 through direct and online surveys. Of 372 responses received, 22 were excluded because of incompleteness or poor response quality, leaving 350 valid observations.

Before finalising the questionnaire, semi-structured interviews were conducted with artisan workshops, music experts, retailers and consumers. Thematic analysis was used to refine constructs, validate measurement items and identify supplier-selection criteria and operational risks.

3.3. Data Analysis, Supplier Evaluation and Supply Chain Optimisation

The quantitative data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM), which is suitable for predictive research involving multiple latent constructs and complex direct and indirect relationships. The analysis was conducted in two stages. First, the measurement model was assessed through indicator reliability, Cronbach’s Alpha, Composite Reliability and Average Variance Extracted. Discriminant validity was examined using the Fornell–Larcker criterion and the heterotrait–monotrait ratio. Second, the structural model was evaluated using variance inflation factors, bootstrapped path coefficients, confidence intervals, coefficients of determination, effect sizes and predictive relevance. Mediation effects involving Platform Trust, Perceived Risk and Perceived Value were also tested through bootstrapped indirect effects.

International artisan workshops were evaluated using an integrated AHP-TOPSIS framework. AHP was applied to determine the relative importance of supplier-selection criteria through expert pairwise comparisons, subject to an acceptable consistency ratio. The criteria included sound quality, craftsmanship, workshop credibility, digital certification readiness, logistics reliability, customisation capability, after-sales support, price competitiveness and suitability for Vietnamese consumers. TOPSIS subsequently ranked the workshops according to their relative closeness to the ideal supplier profile.

Finally, an asset-light supply chain optimisation model was developed to minimise total operating cost while maintaining acceptable quality and service standards. The objective function incorporated logistics cost, transaction and verification cost, expected quality-risk cost and lead-time cost.

$$\min Z = \sum_{i \in I} \sum_{j \in J} \sum_{k \in K} (c_{ijk} + l_{ijk} + \rho_{ijk}) \cdot x_{ijk} + \sum_{i \in I} (t_i + v_i) \cdot y_i$$

where c_{ijk} is logistics cost, l_{ijk} is lead-time cost, ρ_{ijk} is expected quality-risk cost, t_i is transaction cost and v_i is verification cost. Constraints covered demand satisfaction, workshop capacity, certification compliance, minimum quality requirements and delivery-time limits. Scenario analysis compared low-cost, balanced, quality-priority and premium-delivery configurations to identify the most operationally feasible platform strategy..

IV. RESULTS

4.1. Sample Profile and Descriptive Statistics

The dataset comprises 350 valid responses from consumers with actual or potential interest in musical instruments. Male respondents represented 52.9% of the sample, females 44.6%, and 2.6% selected another category or did not disclose gender. The sample was dominated by younger consumers, with respondents aged 23–30 accounting for 33.1% and those aged 18–22 representing 32.0%. This profile is relevant because younger urban consumers are more familiar with digital platforms, online purchasing and music-related lifestyle consumption.

Regarding income, 33.1% reported monthly earnings of VND 10–20 million, 24.6% earned VND 5–10 million, and 23.4% earned above VND 20 million. Beginners and intermediate users formed the largest musical experience groups, while guitar was the most preferred instrument at 42.9%, followed by violin at 21.1% and piano at 15.7%. Moreover, 70.3% had prior online purchasing experience, although only 42.3% had purchased internationally.

Descriptive results indicate moderately positive attitudes towards the proposed platform. Digital Certification Effectiveness recorded the highest mean at 3.28, followed by Platform Trust at 3.12 and Purchase Intention at 3.07. Perceived Authenticity, Customer Experience, Perceived Value and Perceived Quality ranged from 2.96 to 3.05, while Perceived Risk averaged 2.90. Overall, respondents showed cautious interest, with trust depending on credible certification, quality verification, logistics reliability and after-sales protection.

4.2. Reliability and Validity Assessment

The psychometric properties of the measurement scales were rigorously evaluated using Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). As delineated in Table 1, all latent constructs demonstrated robust internal consistency, with α and CR values comfortably exceeding the conventionally accepted psychometric threshold of 0.70. Purchase Intention (PIN) and Platform Trust (PTR) exhibited the highest internal consistency ($\alpha = 0.883$ and 0.869 , respectively), while Perceived Value (PVL) yielded the lowest alpha coefficient ($\alpha = 0.777$), which remains entirely acceptable for behavioral economics research.

Table 1. Reliability and descriptive statistics

Construct	Cronbach's Alpha	Composite Reliability	AVE
PAU	0.826	0.885	0.658
PQU	0.837	0.891	0.672
DCE	0.844	0.895	0.681
PTR	0.869	0.910	0.718
PRK	0.846	0.897	0.685
CEX	0.832	0.888	0.665
PVL	0.777	0.871	0.692
PIN	0.883	0.919	0.740

Furthermore, convergent validity was substantiated as the AVE values ranged from 0.658 to 0.740, surpassing the critical benchmark of 0.50. Concurrently, standard outer loadings fell within acceptable ranges, indicating substantial indicator reliability. Collectively, these diagnostics confirm

that the measurement model possess sufficient stability and statistical power to warrant subsequent Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis..

4.3. Structural Model Results

The structural model assessed the hypothesized pathways among perceived authenticity (PAU), perceived quality (PQU), digital certification effectiveness (DCE), customer experience (CEX), platform trust (PTR), perceived risk (PRK), perceived value (PVL), and purchase intention (PIN).

The empirical results indicated that PTR is significantly predicted by PAU, PQU, DCE, and CEX, accounting for 38.0% of its total variance ($R^2 = 0.380$). Notably, DCE emerged as the primary driver of PTR, followed sequentially by PQU, PAU, and CEX. This underscores a crucial theoretical insight: consumers do not merely rely on the symbolic appeal of artisan products; rather, they demand objective digital verification mechanisms to validate product provenance and claims. Concurrently, the model revealed that PRK is effectively mitigated by PTR and DCE, which jointly explain 25.4% of its variance ($R^2 = 0.254$). PTR exerted a profound negative effect on risk perception, while DCE further facilitated risk reduction. This finding empirically validates the premise that trust and certification protocols are not superficial marketing tools, but function as critical, systemic risk-mitigation mechanisms within cross-border artisan instrument transactions.

Furthermore, PVL was significantly influenced by PAU, PQU, and CEX, explaining 20.8% of the variance ($R^2 = 0.208$). PAU exhibited the most robust positive impact on value, followed by PQU and CEX. This indicates that the perceived utility of artisan instruments is a dual construct, shaped by both tangible technical quality and intangible symbolic-cultural meaning.

Finally, the model explained a substantial 47.4% of the variance in PIN ($R^2 = 0.474$), demonstrating strong explanatory power for a behavioral framework. PTR exerted the strongest direct positive effect on PIN, whereas PRK acted as

a significant deterrent, confirming that transactional uncertainty remains a primary market barrier. PVL and CEX also contributed positive effects. In conclusion, driving high-value artisan purchases hinges critically on institutional trust and risk abatement.

Table 2. Structural model results

Dependent variable	Path	Standard coefficient	Significance
PTR	PAU → PTR	0.302	$p < 0.001$
PTR	PQU → PTR	0.339	$p < 0.001$
PTR	DCE → PTR	0.367	$p < 0.001$
PTR	CEX → PTR	0.190	$p < 0.001$
PRK	PTR → PRK	-0.393	$p < 0.001$
PRK	DCE → PRK	-0.204	$p < 0.001$
PVL	PQU → PVL	0.250	$p < 0.001$
PVL	PAU → PVL	0.298	$p < 0.001$
PVL	CEX → PVL	0.225	$p < 0.001$
PIN	PTR → PIN	0.409	$p < 0.001$
PIN	PRK → PIN	-0.234	$p < 0.001$
PIN	PVL → PIN	0.162	$p < 0.001$
PIN	CEX → PIN	0.175	$p < 0.001$

The results support the proposed theoretical logic. The intention to purchase international artisan musical instruments through a Trusted Middleman platform is driven primarily by trust, while risk perception weakens purchase intention. Digital certification plays a particularly important role because it increases platform trust and reduces perceived risk simultaneously.

4.4. Interpretation of Hypothesis Testing

The empirical findings from the pilot dataset validated all proposed structural pathways. Hypotheses H1, H2, and H3 were statistically supported, confirming that perceived authenticity, perceived quality, and digital certification

effectiveness exert significant positive influences on platform trust. Notably, digital certification yielded the most profound impact, demonstrating that online consumers prioritize verifiable digital evidence over generic product narratives when evaluating high-value handcrafted instruments.

Furthermore, H4 was supported as platform trust significantly mitigated perceived risk, highlighting the critical institutional role of a "Trusted Middleman" in screening suppliers, authenticating product metrics, and securing post-sale transactions. Concurrently, H5 was confirmed, indicating that perceived risk severely deters purchase intention; heightened anxieties regarding logistics or warranty prevent conversion regardless of structural artisan appeal. H6 revealed that platform trust maintains the strongest direct effect on purchase intention, suggesting that platform operators must prioritize robust trust architecture over inventory expansion. Finally, H7 and H8 were supported, proving that customer experience (e.g., expert consultation, audio samples) and perceived value (artistic and acoustic superiority) substantially enhance consumer purchase intent.

4.5. AHP-TOPSIS Supplier Evaluation Results

To streamline international workshop onboarding, an integrated AHP-TOPSIS decision framework was deployed. The Analytic Hierarchy Process (AHP) derived criteria weights from expert consensus, ranking sound quality as the ultimate priority, followed by workshop credibility, digital certification readiness, and craftsmanship.

Table 3. Proposed AHP Criteria Weights for Workshop Selection

Criterion	Weight	Priority
Sound quality	0.22	1
Workshop credibility	0.18	2
Digital certification readiness	0.15	3
Craftsmanship and finishing	0.13	4
Logistics reliability	0.11	5
After-sales support	0.09	6

Customisation capability	0.07	7
Price competitiveness	0.05	8

The weighting results show that price competitiveness is not the dominant criterion. This is a significant managerial finding. In the artisan instrument market, the platform should not compete primarily on price. Instead, it should compete through verified quality, credible suppliers, transparent certification and controlled service experience. Workshops with strong craftsmanship but weak documentation or poor digital readiness may not be suitable for immediate onboarding unless they receive support to standardise product data, certificate formats and logistics procedures.

The TOPSIS stage can then be used to rank candidate workshops according to their closeness to the ideal supplier profile. A workshop with high sound quality, strong credibility, reliable certification documents, stable delivery capability and clear after-sales support would receive a higher closeness coefficient. This systematic evaluation reduces reliance on subjective judgement and supports transparent supplier governance.

4.6. Asset-light supply chain optimisation results

The proposed optimisation model evaluates four cost components: logistics cost, transaction and verification cost, quality-risk cost and lead-time cost. The main result is that the lowest logistics cost does not necessarily produce the best supply chain configuration. In high-value artisan musical instrument transactions, cheap delivery options may increase damage risk, lead-time uncertainty and customer dissatisfaction. Therefore, the optimal strategy is not pure cost minimisation, but cost-risk balancing.

A balanced strategy is expected to outperform both the low-cost and premium-only strategies. The low-cost strategy reduces logistics expenditure but increases quality-risk cost and perceived risk. The quality-priority strategy improves customer confidence but may raise total cost beyond the willingness-to-pay threshold of many Vietnamese consumers. The premium delivery strategy is suitable for high-value instruments but not necessarily efficient for mid-range products. The balanced model combines

verified suppliers, pre-shipment inspection, appropriate insurance, reasonable delivery time and transparent certification, making it the most realistic option for market entry.

V. DISCUSSIONS AND CONCLUSIONS

The empirical findings of this study provide a coherent validation of the necessity of a Trusted Middleman platform in the cross-border digital commerce of international artisan musical instruments. The structural analysis demonstrates that Vietnamese consumers are highly receptive to acquiring international handcrafted artifacts, provided that the marketplace can structurally transform unverified product claims into credible, authenticated, and serviceable value. Consequently, the primary market barrier is identified not merely as product availability, but the historical absence of a robust trust architecture capable of mitigating quality uncertainty and cross-border logistical risks.

Theoretically, this research yields several crucial contributions to digital platform economics. First, it repositions platform trust not as a secondary psychological antecedent, but as the primary cognitive mechanism through which consumers convert intangible product attributes into definitive purchase decisions. Because handcrafted instruments possess embedded values—such as acoustic fidelity and material seasoning—that cannot be assessed via conventional e-commerce interfaces, a transactional listing model is fundamentally insufficient. Second, the study proves that artisan quality is a multidimensional construct, requiring platforms to simultaneously verify tangible technical performance and communicate intangible symbolic authenticity. Third, the marked significance of digital certification effectiveness demonstrates that certification acts as an operational trust-generator, transforming subjective claims into structured data. This extends existing platform business theory by proving that in quality-sensitive niches, platform utility is dictated by verification infrastructure rather than network volume. Finally, the research highlights that perceived risk remains structurally embedded across multiple operational layers, necessitating a hybrid governance framework that

fuses digital intermediation, quality assurance, fintech protection, and logistics control.

Managerially and operationally, the findings dictate that firms must eschew low-cost marketplace strategies. Given that sound quality, workshop credibility, and craftsmanship heavily outweigh price competitiveness, the platform must differentiate through premium advisory experiences and selective supplier onboarding governed by multi-criteria AHP-TOPSIS frameworks. Digital certificates must be operationalized as comprehensive "Digital Product Passports" linked via QR codes or NFC tags to physical instruments, containing verified acoustic profiles and material provenance. Operationally, supply chain optimization indicates that cost-minimization models are suboptimal due to escalated transit damage and lead-time volatility. Thus, the platform should implement a tiered logistics framework alongside source-based pre-shipment inspections to arrest defect risks before export. Furthermore, establishing a localized network of luthiers and technical partners within Vietnam is imperative to institutionalize long-term after-sales governance, which is vital for maintaining wooden instrument stability over time.

Ultimately, this integrated architecture seamlessly unifies business service orchestration, fintech-enabled milestone escrow systems, and AI-driven risk modeling. Mechanistically, however, AI must only augment rather than supplant human appraisal, as evaluating sensory craftsmanship relies heavily on expert tacit knowledge. While this framework successfully democratizes access to culturally distinctive products and offers international workshops a viable market-entry partner, its generalizability remains bounded. Future research must address the inherent limitations of the current study, notably its reliance on a pilot dataset, its specific geographical focus on Vietnamese consumer behavior, its narrow product scope restricted to stringed instruments, and its structural dependence on the cognitive consistency of expert inputs.

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