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Development of a Cross-Cultural Digital Platform Toolkit for Chinese Electronics Online Sellers

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Abstract

This study examined the relationships among Hofstede's cultural dimensions, Sheth's consumption values, and digital platform characteristics among cross-cultural consumers purchasing electronics online in China, and translated the findings into a practical toolkit for Chinese electronics sellers. Using a quantitative descriptive-correlational design, data were collected from 400 valid respondents—non-Chinese nationals residing in Hangzhou and the surrounding Zhejiang province who had purchased electronics online within the past twelve months. Because construct composites violated normality, the Unweighted Least Squares estimator was used for structural equation modeling, while the Mann-Whitney U and Kruskal-Wallis H tests examined demographic differences. Epistemic value was rated highest (M = 6.24) and functional value lowest (M = 5.98), while linguistic adaptation was the most favorably rated platform characteristic (M = 6.11). The final structural model achieved excellent fit (χ^2 = 32.975, df = 52, p = .982; CFI = 1.000; RMSEA = .000) and revealed that digital platform characteristics fully mediated the effect of cultural dimensions on consumption value (β = .969 and β = 1.055, both p < .001). No significant demographic differences in consumption value were found.

Keywords

Cultural Dimensions; Consumption Values; Digital Platform Characteristics; Structural Equation Modeling; Cross-Cultural E-Commerce

1. Introduction

1.1. Research Background and Gap

The digital marketplace has grown exponentially, and online sales of electronics have become a dominant channel for global consumers. In China, e-commerce adoption remains robust, and cities such as Hangzhou—a technological and logistics hub—attract international consumers who purchase electronics through domestic platforms such as Taobao, Tmall, and JD.com, creating cross-cultural buyer–seller linkages. Consumer values—functional, social, emotional, epistemic, and conditional (Sheth, 1991)—play a pivotal role in online purchase decisions, yet these values are

embedded within cultural contexts: consumers from different backgrounds interpret the same online cues differently (Pratesi et al., 2021; Tikhomirova et al., 2021). Interface design, digital trust architecture, and linguistic adaptation further shape how cultural traits translate into perceived value (Yang et al., 2022; Hassna et al., 2023).

However, Chinese platforms were built primarily around the expectations, language, and trust conventions of domestic consumers, and it remains unclear how well they serve the growing population of foreign residents. Direct observational evidence confirms this mismatch: foreign residents in China consistently struggle to identify reliable sellers and express concern over product authenticity, attributed to a lack of language options and internationally familiar payment mechanisms (Fodouop Kouam, 2024).

1.2. Objectives and Contribution

This study sought to (a) profile cross-cultural consumers; (b) determine the extent of their consumption values; (c) describe their cultural orientation; (d) assess their perceptions of digital platform characteristics; (e) develop and validate a structural equation model of these relationships; and (f) translate the findings into an evidence-based toolkit. Its contribution is twofold: theoretically, it extends the Theory of Consumption Values into a cross-cultural, platform-mediated context; practically, it provides Chinese electronics sellers with a prioritized, data-driven decision guide.

2. Literature Review and Research Framework

2.1. Cultural Dimensions and Consumption Values

Hofstede's five dimensions—power distance, uncertainty avoidance, individualism, masculinity, and long-term orientation—capture deep-seated value orientations that shape how consumers evaluate risk and interpret cues in online environments. Sheth's Theory of Consumption Values posits that purchase decisions are driven by functional, social, emotional, epistemic, and conditional value. Prior studies show that national culture significantly influences website usability perceptions, trust, and perceived risk (Pratesi et al., 2021), and that high uncertainty avoidance amplifies reliance on reputation and security assurances when forming purchase intentions (Tikhomirova et al., 2021).

2.2. Digital Platform Characteristics as a Mediating Mechanism

Digital platform characteristics—interface design, digital trust architecture, and linguistic adaptation—are controllable features of e-commerce platforms that condition the relationship between cultural orientation and perceived value. The conceptual model positions cultural dimensions as exogenous latent variables, digital platform characteristics as the mediating construct, and consumption value as the

outcome, with respondent profile as grouping variables. Eleven hypotheses were formulated, positing (H1–H5) direct effects of each cultural dimension on consumption value, (H6–H8) moderating effects of the three platform characteristics, (H9–H10) demographic differences, and (H11) full mediation through platform characteristics.

3. Methodology

3.1. Research Design and Sample

The study adopted a quantitative descriptive-correlational design. The target population comprised non-Chinese nationals residing in China who had purchased electronics through Taobao, Tmall, or JD.com within the twelve months preceding data collection. Using simple random sampling from an iPanel commercial research panel, a minimum of 384 respondents was required (Cochran's formula, 95% confidence, 5% margin of error); data collection yielded 400 valid responses, achieving a 4.90% margin of error. The sample was 62.00% aged 28–43, 51.00% male, 69.20% married, and 37.20% post-secondary educated; the three most represented nationalities were Indian (32.00%), Japanese (28.20%), and Korean (26.00%).

3.2. Instrument and Analysis

A four-section self-administered questionnaire measured respondent profile, consumption values, cultural dimensions, and platform perceptions on a 7-point scale. Content validity was established through expert review and pilot testing (n = 35). All thirteen scales exceeded the 0.70 Cronbach's alpha threshold (range = .775–.925). Because all construct composites violated normality (Shapiro-Wilk, $p < .05$), structural equation modeling used the Unweighted Least Squares estimator across five candidate models; demographic differences were tested with the Mann-Whitney U and Kruskal-Wallis H tests.

4. Results

4.1. Descriptive Findings

All five consumption values were rated highly, with epistemic value highest (M = 6.24) and functional value lowest (M = 5.98). Respondents leaned strongly toward the hierarchical (95.75%), risk-averse (97.25%), individualist (84.00%), masculine (94.75%), and future-focused (92.00%) poles. All three platform characteristics were rated favorably, with linguistic adaptation highest (M = 6.11).

4.2. Model Selection and Structural Paths

Five candidate models were compared (Table 1). Models 1–4, built from composite scores, carried only 1–6 degrees of freedom and fit well almost by construction. Model 5—the full latent-variable specification with 52 degrees of freedom—provided

a genuine test and achieved excellent fit (χ^2 = 32.975, df = 52, p = .982; CFI = 1.000; TLI = 1.000; GFI = .996; RMSEA = .000). As shown in Table 2, digital platform characteristics fully mediated the effect of cultural dimensions on consumption value: the path from cultural dimensions to platform characteristics was β = .969 (p < .001), and from platform characteristics to consumption value was β = 1.055 (p < .001), with no significant direct path remaining. No significant demographic differences in consumption value were found (all p > .05).

Table 1. Goodness-of-Fit Comparison Across Candidate Models

Model	χ^2	p	CFI	GFI	RMSEA
M1: Direct-Effects	0.000	1.000	1.000	1.000	0.000
M2: Full Mediation	2.475	0.290	0.998	0.992	0.024
M3: Partial Mediation	0.000	0.993	1.000	1.000	0.000
M4: Moderation	0.000	1.000	1.000	1.000	0.000
M5: Full Latent (df = 52)	32.975	0.982	1.000	0.996	0.000

Table 2. Summary of Structural Paths in the Selected Model

Path	β	SE	z	p	Decision
Platform Characteristics ← Cultural Dimensions	0.969	0.088	10.961	<.001	Significant
Consumption Value ← Platform Characteristics	1.055	0.088	12.007	<.001	Significant

5. The Cross-Cultural Digital Platform Toolkit

The toolkit translates the structural findings into a three-step decision-support guide. Step 1: sellers self-assess their platform against the study's indicators using a 1–7 scorecard across digital trust architecture, linguistic adaptation, and interface design, identifying the lowest-scoring component. Step 2: a decision flow routes the seller to the corresponding provision. Step 3: sellers apply the prescribed action. Because platform characteristics fully mediate the cultural–value relationship, the guide steers users away from demographic segmentation and toward platform-quality investment, in a fixed priority sequence: digital trust architecture first (review authenticity, verified-purchase badges, payment security, privacy transparency), then linguistic adaptation (interface text clarity, language switching), then interface design (navigation clarity, responsiveness). After each round, sellers re-score the platform and repeat the flow to identify the next priority.

6. Conclusions and Recommendations

The study confirmed that cultural dimensions shape consumption value, but that this influence is channeled entirely through digital platform characteristics rather than occurring independently of the platform experience. Consumption value did not differ across demographic profiles, indicating a broadly shared rather than segmented cross-cultural consumption experience. The findings were translated into a platform-quality-first toolkit for Chinese electronics sellers. Sellers should prioritize

platform-quality investment—trust, then language, then interface—over demographic-segmented value propositions. Platform developers should concentrate on review-authenticity features and language-switching functionality. Future researchers may replicate the integrated model in other cities, markets, or product categories and, through qualitative or mixed-methods designs, explore why platform characteristics so fully channel the effect of cultural orientation on consumption value.

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