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Enhancing Tourist Experience and Cultural Intelligence: The Mediating Role of Mobile Applications in Intercultural Interactions

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Abstract

This study investigates the mediating role of mobile application satisfaction in the relationship between positive intercultural encounters, cultural intelligence, and tourist experience. It addresses a critical gap in understanding how digital tools facilitate meaningful cross-cultural engagement within tourism contexts. This applied, descriptive-analytical research was conducted among 371 tourists visiting Yazd Province, selected through simple random sampling. Validity was confirmed through convergent and discriminant validity assessments, and reliability was established via Cronbach's alpha and composite reliability. Multivariate normality was confirmed. Subsequently, the hypothesized relationships were examined using SEM in Amos24, employing the robust Maximum Likelihood (MLR) estimation method to ensure robust parameter estimates. Results indicate that while the direct effects between intercultural encounters and cultural intelligence and tourist experience were nonsignificant, significant indirect effects emerged through mobile app satisfaction. Intercultural encounters positively predicted app satisfaction, which in turn enhanced cultural intelligence and tourist experience. Bootstrapping confirmed significant mediation for cultural intelligence and tourist experience. Mobile applications serve as pivotal conduits for transforming intercultural interactions into enhanced cultural competence and enriched travel experiences. These findings underscore the importance of digital infrastructure in modern tourism management and offer practical implications for experience design.

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Introduction

Tourism is recognized as one of the most significant economic sectors globally, playing a pivotal role in national development (Khan et al., 2020). In the contemporary world, tourism transcends mere economic activity; it represents a complex social and global phenomenon (Vossoughi & Khoshnamak, 2015). A key motivator for travel is the desire to engage with people and experience foreign cultures, an objective fundamentally achieved through interaction between hosts and tourists (Abdoli et al., 2021).

Within constantly shifting cultural landscapes, locating familiar signs or symbols to facilitate connection can be challenging. In such instances, individuals must establish a shared cognitive framework based on available information to initiate communication and exchange within this new cultural context. Most hotels, restaurants, and other tourism service providers interact directly with consumers from diverse global regions, creating significant challenges when their cultural backgrounds are vastly different (Pleyer et al., 2024).

To address this challenge—safeguarding a society's cultural fabric while promoting intercultural tourism—cultural intelligence (CQ) emerges as a fundamental competency. CQ enables individuals to understand cultural differences and adapt their behavior accordingly. It reflects a person's capability to function and manage effectively within diverse cultural settings. The dimensions of CQ have been identified as predictors of sound cultural judgment, decision-making, cultural adaptation, and enhanced job performance (Kai Liao et al., 2021).

With the rapid advancement of information and communication technology (ICT) and smartphones, smart technologies and mobile applications have become integral to daily life. These applications are specifically designed for download and use on smartphones or similar mobile platforms (Chatti & Majeed, 2020). Technology and ICT have contributed substantially to the development, growth, and expansion of the tourism industry, introducing transformative changes to various tourism activities (Li et al., 2023). Savvy travelers increasingly utilize mobile devices and applications to enhance their travel experiences while optimizing time and cost efficiency (Garcia et al., 2019).

Given the ubiquity of mobile phones, applications can be offered to tourists as value-added services at destinations. They hold significant potential for positively affecting cultural awareness and fostering richer experiences for tourists. Considering Iran's substantial potential and the critical importance of tourism to its economy, identifying strategies to develop and revitalize the tourism industry through mobile applications is imperative. The overarching objective of such applications is to positively influence cultural intelligence and catalyze novel tourism experiences.

The innovative contribution of this study lies in its explicit examination of mobile application satisfaction as the central mediating mechanism that translates positive intercultural encounters into tangible enhancements in cultural intelligence and the overall tourist experience. While prior research has often examined these variables in isolation or through pairwise relationships, this study proposes a novel, integrated model that empirically tests and confirms the pivotal bridging role of digital tools. This approach addresses a critical gap in understanding how technology facilitates meaningful cross-cultural engagement in tourism, moving beyond merely establishing that such a relationship exists. The findings provide new insights for developing targeted digital strategies in tourism management and experience design.

Consequently, this study aims to examine the mediating effect of mobile applications on tourists' cultural intelligence and experiences, thereby promoting positive intercultural encounters.

Literature Review

Technological advancements have transformed mobile applications into powerful tools for enhancing tourists' intercultural interactions (Bhuiyan et al., 2022; Georgescu Paquin & Carballido Risco, 2021). These applications provide valuable insights into local customs, traditions, and practices, enabling tourists to navigate unfamiliar cultural landscapes with greater sensitivity and awareness (Chan et al., 2024; Bashir et al., 2024). Furthermore, mobile apps facilitate real-time language translation and communication, allowing tourists to engage in more meaningful conversations with local residents, thereby reducing cultural barriers (Carvalho et al., 2023; Viñals et al., 2021). By fostering a deeper understanding of diverse cultures, these applications contribute to richer and more positive intercultural experiences for tourists (Fan et al., 2022; Jin, 2023).

The theoretical underpinning of this facilitation can be linked to ICT-mediated contact theory (Hu et al., 2017), which suggests that technology can create a space for positive intergroup interaction. Mobile apps act as this mediating platform, preparing tourists for encounters and providing support during them.

Additionally, mobile applications offer curated insights into local events, festivals, and attractions, empowering tourists to actively participate in and appreciate the cultural richness of a destination (Leong et al., 2024; Ma et al., 2024). This active engagement can lead to a more authentic and holistic travel experience while simultaneously promoting intercultural understanding and appreciation (Defang & Lin, 2014; Pine & Gilmore, 1998). Crucially, integrating principles of cultural intelligence (CQ) (Earley & Ang, 2003) into the design and functionality of mobile applications can significantly enhance their effectiveness in fostering intercultural interactions among tourists. This involves designing for all four facets of CQ: providing cultural knowledge (Cognitive), encouraging reflection

on cultural assumptions (Metacognitive), stimulating interest (Motivational), and offering behavioral tips (Behavioral). This fosters respect, empathy, and mutual understanding within diverse global communities (Klimova & Chen, 2024; Drigas et al, 2023).

Examining the research and existing literature constitutes a fundamental element of any scholarly inquiry. Key studies investigating the intersection of mobile technology, cultural intelligence, and intercultural encounters include:

Mohammadi et al. (2022) investigated the impact of mobile marketing, drawing on UTAUT2 to explain tourist behavior. Their findings revealed that mobile marketing exerts a significant positive influence on tourists' behavioral intentions, positioning it as a novel and effective marketing tool for promoting tourism destinations and shaping tourist behavior. Zhang et al. (2022) examined the impact of smart technology dimensions and features on the tourism experience, focusing on visitor attraction and post-consumption outcomes (satisfaction and behavioral intentions). Their work aligns with TAM and Experience Economy principles. Results indicate that accessibility and interactivity influence the perceived value of advanced smart technology experiences. This perceived value significantly determines tourist satisfaction. Smart technology positively affects word-of-mouth promotion, revisit intentions, and willingness to pay a premium. Consequently, tourism attractions can enhance the visitor experience and improve competitiveness by designing superior infrastructure and services that integrate key aspects of smart technology.

Abdoli et al. (2021) explored cultural intelligence as a barrier to cultural conflicts and clashes, using the CQ framework. Their study concluded that cognitive, metacognitive, motivational, and behavioral facets of CQ directly and significantly impact functional, epistemic, and affective values. Notably, the influence of perceived values on affective aspects was found to be greater than on functional or cognitive ones. Xia et al (2021), in a study on AI-powered smart tourism applications, posits that mobile applications play a pivotal role in mediating the relationship between cultural intelligence and tourists' overall travel experience, a concept supported by ICT-mediated contact theory. These applications facilitate positive intercultural exchange and provide the economic support necessary for meaningful cultural engagement. Such exchanges, mediated through introspective, comparative, and holistic experiences, shape international travelers' attitudes towards local residents and their culture. This research offers a novel approach to intercultural interaction, overcoming limitations in existing contact models by developing a grounded theory derived from intercultural engagement within the tourism sector.

Recent studies continue to support this trajectory. For instance, Cheng (2023) demonstrated that AR-based cultural guides significantly improved tourists' cognitive and metacognitive CQ.

Theoretical Framework and Hypotheses Development

This study is grounded in an integrated theoretical framework combining Intergroup Contact Theory (Allport, 1954), Cultural Intelligence (CQ) Theory (Earley & Ang, 2003), and the Technology Acceptance Model (TAM) (Davis, 1989). Furthermore, it draws upon the concept of ICT-mediated contact (Hu et al., 2017) and Tourism Experience frameworks (Pine & Gilmore, 1998) to contextualize the role of mobile applications within the tourism domain.

Intergroup Contact Theory posits that under appropriate conditions, direct interaction between members of different groups can reduce prejudice and foster mutual understanding. In the digital age, this interaction is often facilitated by technology. The concept of ICT-mediated contact extends this theory, suggesting that technology can serve as an effective medium for enabling positive intercultural encounters, even before or in lieu of face-to-face contact. Mobile applications, as a prevalent form of ICT, can thus be theorized to create a platform for such mediated intercultural contact.

Cultural Intelligence Theory provides a comprehensive framework for understanding an individual's capability to function effectively in culturally diverse settings. Its four dimensions—metacognitive, cognitive, motivational, and behavioral—offer a lens through which to measure how technology might enhance these capabilities. We posit that mobile applications can serve as tools for developing CQ by providing accessible information (enhancing cognitive CQ), offering strategies for cultural learning (metacognitive CQ), stimulating interest in other cultures (motivational CQ), and providing behavioral scripts for interaction (behavioral CQ).

The Technology Acceptance Model (TAM), and by extension the Unified Theory of Acceptance and Use of Technology (UTAUT), helps explain the user adoption of these technological tools. According to TAM, the perceived usefulness and perceived ease of use of a technology are primary determinants of its usage intention and satisfaction. In the context of this study, a tourist's satisfaction with a mobile application is therefore influenced by its perceived utility in facilitating intercultural interactions and enhancing the travel experience.

Finally, the Experience Economy framework (Pine & Gilmore, 1998) views experiences as a distinct economic offering. In tourism, this translates to designing memorable, engaging, personal, and authentic experiences for the tourist. Mobile applications can be powerful tools in crafting such experiences by offering customization, interaction, immersion, and storytelling capabilities.

Based on this integrated theoretical foundation, the following hypotheses are proposed:

- **H1:** Positive intercultural encounters will have a significant positive effect on cultural intelligence.
- **H2:** Positive intercultural encounters will have a significant positive effect on the tourist experience.

- **H3:** Positive intercultural encounters will have a significant positive effect on mobile application satisfaction.
- **H4:** Mobile application satisfaction will have a significant positive effect on cultural intelligence.
- **H5:** Mobile application satisfaction will have a significant positive effect on the tourist experience.

Furthermore, this study posits that mobile application satisfaction acts not merely as an outcome but as a critical mediating mechanism. Therefore, the following indirect hypotheses are also proposed:

- **H6:** Mobile application satisfaction significantly mediates the positive relationship between positive intercultural encounters and cultural intelligence.
- **H7:** Mobile application satisfaction significantly mediates the positive relationship between positive intercultural encounters and tourist experience.

The conceptual model of the research, illustrating both direct and indirect relationships, is presented in Figure 1.

Methodology

This study employs a descriptive-analytical methodology and is applied in nature. The study employed a simple random sampling technique to recruit participants from the population of inbound tourists visiting key historical sites in Yazd Province, Iran, during March-April 2024. Researchers approached potential participants at various locations (e.g., Amir Chakhmaq Complex, Yazd Jameh Mosque, Dowlat Abad Garden) and invited them to participate voluntarily. Inclusion criteria required participants to be: 1) international or domestic tourists aged 18 or older, 2) visiting Yazd for leisure or cultural purposes, and 3) active users of at least one mobile application (e.g., for navigation, translation, or cultural information) during their trip. Participants who did not complete the survey or provided inconsistent responses were excluded. Out of 500 questionnaires distributed, 408 were returned. After screening for completeness and consistency, 371 usable questionnaires were retained for analysis, yielding a response rate of 74.2%. This rate is considered adequate for statistical analysis and helps mitigate non-response bias.

As part of the desk research phase, a comprehensive review of Persian and international literature, including reputable field studies, was conducted. This review focused on examining the role of cultural intelligence (CQ) and positive intercultural encounters on tourist experience, mediated by mobile applications. Sources included peer-reviewed journal articles, books, and conference proceedings accessed through major international databases (e.g., Emerald, ScienceDirect) and

national repositories (e.g., Jihad Daneshgahi Database, Noor Specialized Journals Database, Magiran), ensuring the relevance and currency of the information synthesized.

The data collection instrument was a structured questionnaire composed of two main sections: demographic information and the main constructs measured using multi-item scales adapted from established prior studies. All items were measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Positive Intercultural Encounters (4 items): This scale was adapted from Fan et al. (2022), measuring the quality and positivity of interactions between tourists and locals.

- **Cultural Intelligence (CQ) (12 items):** The four-dimensional scale (Metacognitive, Cognitive, Motivational, Behavioral) developed by Ang et al. (2007) was used.
- **Mobile Application Satisfaction (4 items):** This scale was adapted from Coves-Martínez et al. (2022) to assess tourists' satisfaction with the functionality and usefulness of mobile apps during their travels.
- **Tourist Experience (4 items):** This scale was adapted from Oh et al. (2007) and Pine & Gilmore (1998) to capture the memorability, authenticity, and engagement of the tourist experience.

Validity was established through content and construct validity assessments. To ensure content validity, questionnaire items were derived from multiple components identified in the extant literature. The instrument underwent several rounds of revision based on feedback from academic and industry experts. Construct validity was confirmed using Factor Analysis techniques; specifically, Confirmatory Factor Analysis (CFA) was employed to validate the measurement model.

Reliability was evaluated using Cronbach's alpha coefficient. The overall Cronbach's alpha, calculated using SPSS software was 0.94. As coefficients exceeding the recommended minimum threshold of 0.70 indicate high reliability, the internal consistency of the questionnaire was deemed excellent.

Table 1. Measurement Model Assessment (Assessments of Convergent Validity and Reliability)

Construct	Items	Factor Loadings (Range)	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Positive Intercultural Encounters	4	0.72 - 0.85	0.78	0.86	0.61
Mobile Application Satisfaction	4	0.75 - 0.88	0.81	0.88	0.65
Cultural Intelligence (CQ)	12	0.68 - 0.91	0.93	0.94	0.58

Tourist Experience	4	0.79 - 0.90	0.91	0.94	0.80
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All factor loadings were significant at $p < 0.001$. CR and AVE values exceed the recommended thresholds of 0.7 and 0.5, respectively, demonstrating good convergent validity and internal consistency reliability.

Table 2. Descriptive Statistics and Correlation Matrix of Latent Constructs

Construct	Mean	Std. Deviation	1	2	3	4
Positive Intercultural Encounters	3.92	0.78	0.78			
Mobile Application Satisfaction	4.15	0.82	0.53**	0.81		
Cultural Intelligence (CQ)	3.87	0.74	0.25*	0.83**	0.93	
Tourist Experience	4.21	0.85	0.19*	0.76**	0.71**	0.91

Note: $p < 0.01$, $p < 0.05$ (Two-tailed). The square root of the AVE for each construct is shown on the diagonal (in bold) to demonstrate discriminant validity.

Following data collection and coding, preliminary analyses, including tests for univariate and multivariate normality, were performed using SPSS and Amos. Mardia's multivariate kurtosis coefficient was calculated to assess multivariate normality. The value was below the recommended threshold, indicating no severe violation of multivariate normality and supporting the use of Maximum Likelihood estimation. Factor Analysis was also conducted. Subsequently, the data were analyzed using structural equation modeling (SEM) with the Amos software package. Given the confirmed normality and to obtain robust estimates, the Robust Maximum Likelihood (MLR) estimator was employed for model estimation. This involved testing the hypothesized relationships among variables and the overall path model. The SEM results were used to confirm or reject the study hypotheses, and the analytical findings are presented accordingly.

Findings

Table 3 presents the demographic characteristics of the study sample. Of the 371 participants, 54.72% were female and 45.28% were male. The largest age group was 31-40 years (41.51%), while the smallest group comprised individuals over 50 years (8.63%). Regarding education, 33.42% held bachelor's degrees, 50.67% held master's degrees, and 8.09% held doctoral degrees.

Digital Literacy was self-assessed based on familiarity and frequency of using various smartphone applications.

Prior to testing the model, the data were screened for univariate and multivariate normality, as the assumption of normality is a critical prerequisite for the Maximum Likelihood (ML) estimation method used in Structural Equation Modeling (SEM). First, univariate normality for each of the four

latent constructs was assessed using the Kolmogorov-Smirnov test. The results, presented in Table 4, indicate that the significance values for all variables are greater than the 0.05 threshold, confirming that the data for each variable individually followed a normal distribution.

Table 3. Detailed Demographic Profile of the Study Sample (N=371)

Characteristic	Category	Frequency	Percentage (%)
Gender	Female	203	54.72
	Male	168	45.28
Age	< 20 years	16	4.31
	20 - 30 years	107	28.84
	31 - 40 years	154	41.51
	41 - 50 years	62	16.71
	> 50 years	32	8.63
Education	Associate's Degree or Lower	29	7.82
	Bachelor's Degree	124	33.42
	Master's Degree	188	50.67
	Doctoral Degree	30	8.09
Nationality	Domestic (Iranian)	192	51.75
	International	179	48.25
Digital Literacy	Beginner	41	11.05
	Intermediate	157	42.32
	Advanced	173	46.63
Travel Frequency	First-time visitor to Yazd	148	39.89
	Repeat visitor (2-5 times)	187	50.40
	Frequent visitor (>5 times)	36	9.70

Table 4. Normality Test Results (Kolmogorov-Smirnov)

Variable	Statistic	Sig.	Conclusion
Positive Intercultural Encounters	0.92	0.36	Normal
Mobile Application Satisfaction	0.87	0.42	Normal
Cultural Intelligence (CQ)	0.89	0.39	Normal
Tourist Experience	0.85	0.47	Normal

However, since SEM involves multiple variables simultaneously, establishing univariate normality alone is not sufficient. Therefore, multivariate normality was assessed using Mardia's coefficient based on skewness and kurtosis. As shown in Table 5, the normalized estimate for multivariate kurtosis was

within the recommended range of ± 1.96 , and the associated p-value was non-significant ($p > 0.05$). This confirms that the assumption of multivariate normality was tenable for the data set.

Table 5. Assessment of Multivariate Normality (Mardia's Test)

Test	Coefficient	p-value	Conclusion
Mardia's Kurtosis	-2.15	> 0.05	Multivariate Normal Distribution

The confirmation of both univariate and multivariate normality justified the use of the Maximum Likelihood (ML) estimation method. To further enhance the robustness of the parameter estimates and protect against any potential minor violations of distributional assumptions, the Robust Maximum Likelihood (MLR) estimator was employed for the final model estimation. The MLR estimator provides standard errors and a chi-square test statistic that are robust to non-normality.

The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity were then examined to assess the suitability of the data for factor analysis. As shown in Table 6, the KMO values for all constructs were above the recommended threshold of 0.60, and Bartlett's Test was significant ($p < 0.001$), indicating that the sample size was adequate and the correlations between variables were sufficiently strong for proceeding with factor analysis.

Table 6. KMO and Bartlett's Test Results

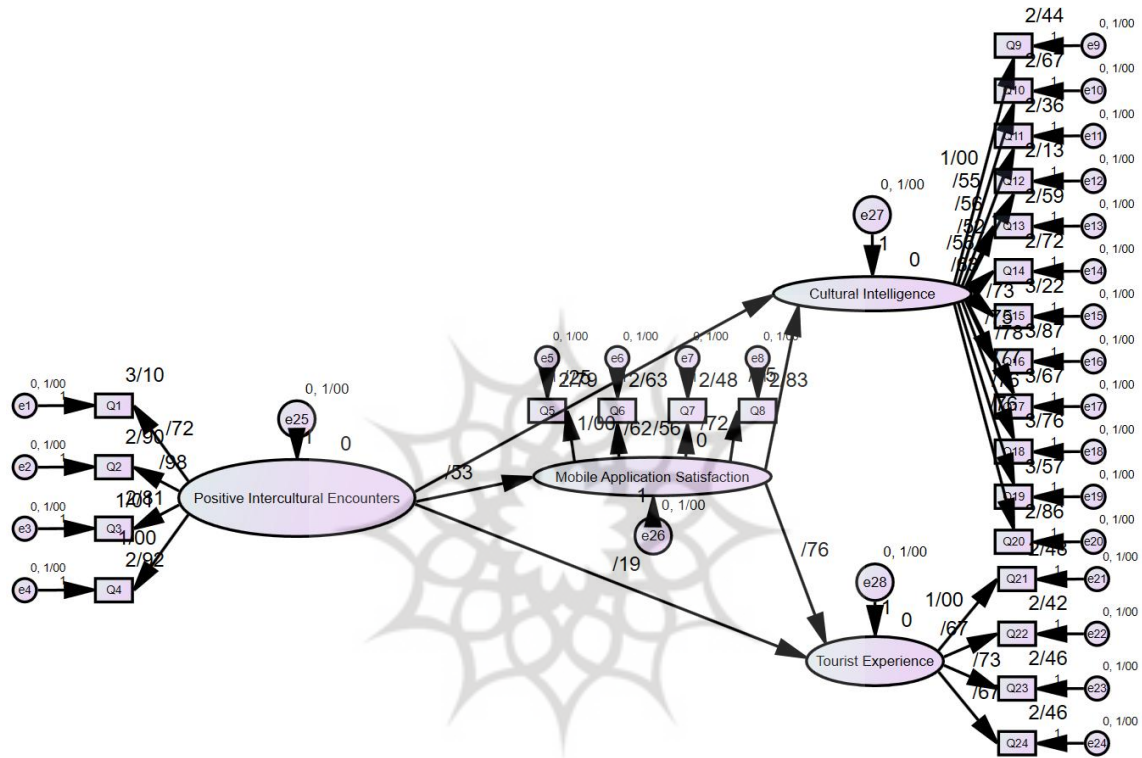
Variable	KMO	Bartlett's Test (Sig.)
Positive Intercultural Encounters	0.746	0.000
Mobile Application Satisfaction	0.710	0.000
Cultural Intelligence (CQ)	0.934	0.000
Tourist Experience	0.829	0.000

Table 7. Overall Measurement Model Fit Indices

Index	Value Obtained	Recommended Threshold	Interpretation
χ^2/df	1.9	< 3.0	Excellent
p-value	< 0.001	> 0.05	Significant
GFI	0.86	> 0.90 (Acceptable > 0.85)	Acceptable
RMR	0.07	< 0.08	Good
CFI	0.92	> 0.90	Good
TLI	0.90	> 0.90	Acceptable
SRMR	0.05	< 0.08	Good
RMSEA (90% CI)	0.04 (0.03 - 0.05)	< 0.08	Excellent

Confirmatory Factor Analysis (CFA) was performed on each measurement model. The overall fit indices (Table 7) indicate an acceptable measurement model fit.

Note: CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; CI = Confidence Interval.



These results confirm the structural acceptability of the models for analyzing variable relationships.

Figure 1. Structural Model of the Research

The results of Structural Model Path Analysis are summarized in Table 9.

Table 8. Hypothesis Testing Summary

Hyp	Path	Path Coeff.	p-value	Result	Supported
H1	Positive Intercultural Encounters → CQ	0.25	>0.05	Insignificant	No
H2	Positive Intercultural Encounters → Tourist Exp.	0.19	>0.05	Insignificant	No
H3	Positive Intercultural Encounters → App Satisfaction	0.53	<0.001	Significant	Yes
H4	App Satisfaction → CQ	0.83	<0.001	Significant	Yes

H5	App Satisfaction → Tourist Experience	0.76	<0.001	Significant	Yes
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While direct relationships between positive intercultural encounters and both cultural intelligence (H1) and tourist experience (H2) were insignificant, the mediating role of mobile application satisfaction was strongly confirmed. Positive intercultural encounters significantly increased app satisfaction ($\beta = 0.53$, $p < 0.001$), which in turn significantly enhanced both cultural intelligence ($\beta = 0.83$, $p < 0.001$) and tourist experience ($\beta = 0.76$, $p < 0.001$).

To rigorously test the hypothesized mediating role of mobile application satisfaction, a bootstrapping analysis with 5000 resamples was conducted using Robust Maximum Likelihood (MLR) estimation. This method provides bias-corrected confidence intervals for the indirect effects, offering a powerful test of mediation that does not rely on assumptions of normality. The results confirm the significance of the indirect pathways.

Table 9. Bootstrapping Results for Indirect Effects

Indirect Path	Point Estimate	Boot SE	Bias-Corrected 95% CI	p-value	Result
H6: Positive Intercultural Encounters → Mobile App Satisfaction → Cultural Intelligence (CQ)	0.44	0.064	[0.32, 0.57]	< 0.001	Significant
H7: Positive Intercultural Encounters → Mobile App Satisfaction → Tourist Experience	0.40	0.061	[0.29, 0.53]	< 0.001	Significant

The results for Hypothesis 6 (H6) demonstrate a statistically significant indirect effect of positive intercultural encounters on cultural intelligence via mobile app satisfaction, with a beta coefficient of 0.44 and a 95% confidence interval (CI) of [0.32, 0.57]. The absence of zero within the confidence interval confirms that satisfaction with mobile applications acts as a significant mediator in this relationship, indicating that the positive effect of intercultural encounters on cultural intelligence is effectively enhanced by the tourists' satisfaction gain from these apps. Similarly, Hypothesis 7 (H7) reveals a statistically significant indirect effect of positive intercultural encounters on the overall tourist experience through mobile app satisfaction, with a beta coefficient of 0.40 and a 95% CI of [0.29, 0.53]. Again, the confidence interval's exclusion of zero reinforces that mobile app satisfaction serves as an important mediator, reflecting that the enriching impact of cultural encounters on travel experiences is largely mediated by tourists' use and satisfaction with mobile applications. Together, these findings, along with the nonsignificant direct effects from Hypotheses 1 and 2, suggest a model of full mediation, emphasizing that mobile applications are not just supplementary tools but essential

mechanisms that convert intercultural interactions into tangible enhancements in both cultural intelligence and the overall tourist experience.

Discussion & Conclusion

This study set out to decipher the complex interplay between intercultural encounters, cultural intelligence (CQ), and the overall tourist experience in the digital age, with a specific focus on the mediating role of mobile application satisfaction. Conducted among tourists in Yazd, Iran, our findings paint a nuanced picture that challenges simplistic direct-effect models and fundamentally underscores the transformative, albeit indirect, power of digital tools as essential conduits for meaningful cross-cultural engagement.

The most striking finding of this research is the absence of significant direct paths from positive intercultural encounters to both cultural intelligence (H1) and tourist experience (H2). This suggests that in today's complex travel landscape, mere exposure to a different culture, even when positive, is not sufficient on its own to automatically foster deeper cultural understanding or significantly elevate the holistic travel experience. This result seemingly contrasts with earlier studies (e.g., Kong et al., 2020; Yu & Lee, 2014), a divergence that may be attributed to the evolving nature of tourism where encounters are increasingly mediated by technology. A tourist without the contextual framework, communicative support, and interpretive lens provided by mobile apps may find even positive interactions challenging to fully process, internalize, and translate into lasting competence or memorable experience.

The core theoretical and practical contribution of this study lies in its robust identification and validation of a more sophisticated indirect mechanism. Our results construct a clear and compelling narrative: positive intercultural encounters significantly boost satisfaction with mobile applications (H3). This alignment with Liu et al. (2023) indicates that rewarding real-world interactions enhance the perceived value of the digital tools that facilitate them. This satisfaction, in turn, acts as a critical catalyst, directly fueling substantial gains in cultural intelligence (H4) and powerfully enhancing the overall tourist experience (H5), resonating strongly with the work of Coves-Martínez et al. (2022) and Pai et al. (2020).

Crucially, the bootstrapping analysis (H6, H7) confirms that mobile app satisfaction is not merely a pleasant outcome but the pivotal mediating conduit through which intercultural encounters ultimately exert their influence. The significant indirect effects demonstrate that these applications serve as an essential interpretive and enabling layer. They bridge the critical gap between a positive interaction and its meaningful integration into the tourist's knowledge base (CQ) and memory (Experience). This empirical evidence provides strong support for ICT-mediated contact theory (Hu et

al., 2017), illustrating how technology creates a preparatory and supportive space that maximizes the positive outcomes of intergroup interaction. Furthermore, it extends Cultural Intelligence Theory (Earley & Ang, 2003) by showcasing how technology can be strategically engineered to develop all four CQ facets: providing accessible knowledge (Cognitive), offering strategies for cultural learning (Metacognitive), stimulating interest and curiosity (Motivational), and suggesting appropriate behaviors (Behavioral).

The implications of these findings are profound for tourism management and marketing. They compellingly argue that high-quality, culturally intelligent mobile applications should be considered not as optional amenities, but as core infrastructure, as vital as physical signage or visitor centers. Destination Marketing Organizations (DMOs) and tourism service providers must prioritize investment in developing and promoting applications designed to actively facilitate and deepen cultural engagement. This involves moving beyond basic functionality to incorporate features such as: CQ-boosting content (e.g., guides on local etiquette, historical context, and self-reflection prompts); tools that facilitate genuine connection with locals (e.g., secure platforms for Q&A with cultural experts); and immersive technologies like Augmented Reality (AR) to overlay cultural narratives onto physical sites. Promotion is equally key; tourists should be actively encouraged to download and use these apps from the very earliest stages of trip planning, through partnerships with airlines, hotels, and travel agencies.

In conclusion, this research demonstrates that the journey from intercultural contact to personal growth and memorable experiences is powerfully mediated by digital technology. While positive face-to-face encounters provide the essential spark, their potential to build cultural intelligence and define the tourist experience is substantially unlocked and amplified through satisfaction with mobile applications. Therefore, the future of competitive, sustainable, and enriching tourism development lies in the strategic and thoughtful integration of mobile technology to seamlessly bridge cultural gaps, transforming simple interactions into profound learning and unparalleled enjoyment. Future research could build upon this model by investigating the impact of specific application features (e.g., AR, gamification, social connectivity) on individual dimensions of CQ or by examining these relationships across diverse cultural contexts and tourist demographics.

References

- Abdoli, M., Aminbeidokhti, A., & Jafari, S. (2021). The Relationship between Cultural Intelligence and the Perceived Value of Sustainable Tourism, Case Study: City of Yazd. *Urban Tourism*, 8(3), 121-135. <https://doi.org/10.22059/jut.2021.293532.759>
- Allport, F. H. (1954). The structuring of events: outline of a general theory with applications to psychology. *Psychological Review*, 61(5), 281. <https://doi.org/10.1037/h0062678>
- Ang, S., Van Dyne, L., Koh, C., Ng, K. Y., Templer, K. J., Tay, C., & Chandrasekar, N. A. (2007). Cultural intelligence: Its measurement and effects on cultural judgment and decision making, cultural adaptation and task performance. *Management and organization review*, 3(3), 335-371. <https://doi.org/10.1111/j.1740-8784.2007.00082.x>
- Bashir, M., Asghar, S., Ashfaq, M., Raza, S. S., & Zahoor, S. (2024). Digitalizing tourism and interactive navigation: A case study of Pakistan. *Journal of Asian Development Studies*, 13(1), 547-566. <https://doi.org/10.62345/jads.2024.13.1.46>
- Bhuiyan, K. H., Jahan, I., Zayed, N. M., Islam, K. M. A., Suyaiya, S., Tkachenko, O., & Nitsenko, V. (2022). Smart tourism ecosystem: a new dimension toward sustainable value co-creation. *Sustainability*, 14(22), 15043. <https://doi.org/10.3390/su142215043>
- Pine, B. J., & Gilmore, J. H. (1998). Welcome to the experience economy. *Harvard Business Review*, 76(4), 97-106. <https://hbr.org/1998/07/welcome-to-the-experience-economy>
- Carvalho, I., Ramires, A., & Iglesias, M. (2023). Attitudes towards machine translation and languages among travelers. *Information Technology & Tourism*, 25(2), 175-204. <https://doi.org/10.1007/s40558-023-00253-0>
- Chan, G., Banire, B., Ataguba, G., Frempong, G., & Orji, R. (2024). A Panoramic View of Socio-Cultural Sensitivity in Digital Technologies: A Comprehensive Review and Future Directions. *International Journal of Human-Computer Interaction*, 41(4), 1917-1945. <https://doi.org/10.1080/10447318.2024.2372135>
- Chatti, W., & Majeed, M. T. (2022). Information communication technology (ICT), smart urbanization, and environmental quality: Evidence from a panel of developing and developed economies. *Journal of Cleaner Production*, 366, 132925. <https://doi.org/10.1016/j.jclepro.2022.132925>
- Cheng, C. I. (2023). A study on learning analytics of using mobile augmented reality application to enhance cultural competence for design cultural creation in higher education. *Journal of Computer Assisted Learning*, 39(6), 1939-1952. <https://doi.org/10.1111/jcal.12855>

- Coves-Martínez, Á. L., Sabiote-Ortiz, C. M., & Frías-Jamilena, D. M. (2022). Cultural intelligence as an antecedent of satisfaction with the travel app and with the tourism experience. *Computers in Human Behavior*, 127, 107049. <https://doi.org/10.1016/j.chb.2021.107049>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 13(3), 319-340. <https://doi.org/10.2307/249008>
- De-fang, Z., & Lin, I Y. (2014, July 29). Understanding tourists' perception and evaluation of inter-cultural service encounters: a holistic mental model process. *International Journal of Culture, Tourism and Hospitality Research*, 8(3), 290-309. <https://doi.org/10.1108/IJCTHR-09-2013-0070>
- Drigas, A., Papoutsis, C., & Skianis, C. (2023). Being an emotionally intelligent leader through the nine-layer model of emotional intelligence—The supporting role of new technologies. *Sustainability*, 15(10), 8103. <https://doi.org/10.3390/su15108103>
- Earley, P. C., & Ang, S. (2003). *Cultural intelligence: Individual interactions across cultures*. Stanford University Press.
- Fan, D. X., Tsaur, S. H., Lin, J. H., Chang, T. Y., & Tsa, Y. R. T. (2022). Tourist intercultural competence: A multidimensional measurement and its impact on tourist active participation and memorable cultural experiences. *Journal of Travel Research*, 61(2), 414-429. <https://doi.org/10.1177/0047287520982372>
- Garcia, A., Linaza, M. T., Gutierrez, A., & Garcia, E. (2019). Gamified mobile experiences: smart technologies for tourism destinations. *Tourism Review*, 74(1), 30-49. <https://doi.org/10.1108/TR-08-2017-0131>
- Georgescu Paquin, A., & Carballido Risco, A. (2021). Contributions of information and communication technologies to cultural tourism experiences: Toward a smart destination. In C. Cobanoglu, S. Dogan, K. Berezina, & G. Collins (Eds.), *Advances in hospitality and tourism information technology* (pp. 1–34). USF M3 Publishing. <https://digitalcommons.usf.edu/m3publishing/vol18/iss9781732127586/3/>
- Hu, S., Gu, J., Liu, H., & Huang, Q. (2017). The moderating role of social media usage in the relationship among multicultural experiences, cultural intelligence, and individual creativity. *Information Technology & People*, 30(2), 265-281. <https://doi.org/10.1108/ITP-04-2016-0099>
- Jin, S. (2023). Unleashing the potential of social media: Enhancing intercultural communication skills in the hospitality and tourism context. *Sustainability*, 15(14), 10840. <https://doi.org/10.3390/su151410840>
- Kai Liao, Y., Wu, W. Y., Dao, T. C., & Ngoc Luu, T. M. (2021). The influence of emotional intelligence and cultural adaptability on cross-cultural adjustment and performance with the

- mediating effect of cross-cultural competence: A study of expatriates in Taiwan. *Sustainability*, 13(6), 3374. <https://doi.org/10.3390/su13063374>
- Khan, A., Bibi, S., Lorenzo, A., Lyu, J., & Babar, Z. U. (2020). Tourism and development in developing economies: A policy implication perspective. *Sustainability*, 12(4), 1618. <https://doi.org/10.3390/su12041618>
- Kong, L. L., MA, Z. Q., JI, S. H., & LI, J. (2020). The mediating effect of empathy on the relationship between cultural intelligence and intercultural adaptation in intercultural service encounters. *The Journal of Asian Finance, Economics and Business*, 7(2), 169-180. <https://doi.org/10.13106/jafeb.2020.vol7.no2.169>
- Klimova, B., & Chen, J. H. (2024). The Impact of AI on Enhancing Students' Intercultural Communication Competence at the University Level: A Review Study. *Language Teaching Research*, 43, 102-120. <https://doi.org/10.32038/ltrq.2024.43.06>
- Leong, W. Y., Leong, Y. Z., & San Leong, W. (2024). Smart Tourism in ASEAN: Leveraging Technology for Sustainable Development and Enhanced Visitor Experiences. *International Journal of Social Sciences and Artistic Innovations*. <https://doi.org/10.35745/ijssai2024.v04.03.0003>
- Li, P., Zhou, Y., & Huang, S. (2023). Role of information technology in the development of e-tourism marketing: A contextual suggestion. *Economic Analysis and Policy*, 78, 307-318. <https://doi.org/10.1016/j.eap.2023.03.010>
- Liu, S., Gao, S., & Ji, X. (2023). Beyond borders: exploring the impact of augmented reality on intercultural competence and L2 learning motivation in EFL learners. *Frontiers in Psychology*, 14, 1234905. <https://doi.org/10.3389/fpsyg.2023.1234905>
- Ma, C., Somrak, T., Manajit, S., & Gao, C. (2024). Exploring the Potential Synergy between Disruptive Technology and Historical/Cultural Heritage in Thailand's Tourism Industry for Achieving Sustainable Development in the Future. *International Journal of Tourism Research*, 26(5), e2759. <https://doi.org/10.1002/jtr.2759>
- Mohammadi, S., Darzian Azizi, A., & Hadianfar, N. (2022). Impact of Mobile Marketing on Tourists' Behavioral Intentions: Explanation the Role of Tourism Destination Brand Equity. *Journal of Tourism and Development*, 11(2), 231-247. https://www.itsairanj.ir/article_158193.html?lang=en
- Oh, H., Fiore, A. M., & Jeoung, M. (2007). Measuring experience economy concepts: Tourism applications. *Journal of travel research*, 46(2), 119-132. <https://doi.org/10.1177/0047287507304039>

- Pai, C. K., Liu, Y., Kang, S., & Dai, A. (2020). The role of perceived smart tourism technology experience for tourist satisfaction, happiness and revisit intention. *Sustainability*, 12(16), 6592. <https://doi.org/10.3390/su12166592>
- Pleyer, M., Delliponti, A., Kuleshova, S., Placinski, M., Raia, R., Sanguedolce, G., & Sibierska, M. (2024). *4 The role of communication channel in the emergence of novel communication systems in experimental semiotics. Introducing evolutionary pragmatics: How language emerges from use*. London: Routledge.
- Viñals, M. J., Gilabert-Sansalvador, L., Sanasaryan, A., Teruel-Serrano, M. D., & Darés, M. (2021). Online synchronous model of interpretive sustainable guiding in heritage sites: The avatar tourist visit. *Sustainability*, 13(13), 7179. <https://doi.org/10.3390/su13137179>
- Vossoughi, L., & Khoshnamak, S. (2015). Explanation of Cross-Cultural Differences in Tourism Based on the Perception of Local Community (Case Study: Ghara dagh (Arasbaran) Area). *Journal of Iranian Cultural Research*, 8(2), 95-129. <https://doi.org/10.7508/ijcr.2015.30.004>
- Xia, D., Jiang, S., Yang, N., Hu, Y., Li, Y., Li, H., & Wang, L. (2021). Discovering spatiotemporal characteristics of passenger travel with mobile trajectory big data. *Physica A: Statistical Mechanics and Its Applications*, 578, 126056. <https://doi.org/10.1016/j.physa.2021.126056>
- Yu, J., & Lee, T. J. (2014). Impact of tourists' intercultural interactions. *Journal of Travel Research*, 53(2), 225-238. <https://doi.org/10.1177/0047287513496467>
- Zhang, Y., Sotiriadis, M., & Shen, S. (2022). Investigating the impact of smart tourism technologies on tourists' experiences. *Sustainability*, 14(5), 3048. <https://doi.org/10.3390/su14053048>

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