Beyond Usefulness: Credibility as the Driver of Consumer Trust and Satisfaction in AI Chatbot Interactions—Evidence from Moroccan E-Commerce

Mohamed Ichou*, Wang Mengmeng

School of Business, Nanjing University of Information Science and Technology, Nanjing, China.

***Corresponding Author**

DOI: https://doi.org/10.51584/IJRIAS.2026.110400121

Received: 15 April 2026; Accepted: 20 April 2026; Published: 13 May 2026

ABSTRACT

AI chatbots have become central to e-commerce customer service globally, yet the trust mechanisms driving their adoption in emerging markets remain poorly understood. Existing research, grounded largely in the Technology Acceptance Model, emphasizes perceived usefulness and personalization as primary adoption drivers — constructs whose predictive validity in low AI-exposure, high uncertainty-avoidance markets cannot be taken for granted. This study proposes and tests a credibility-first framework among Moroccan e-commerce users, arguing that in high uncertainty-avoidance cultures, credibility — defined as the perceived honesty, reliability, and transparency of the chatbot — will be the primary feature activating consumer trust, while perceived usefulness, interactivity, and personalization are expected to have weak or non-significant effects. Survey data from 150 respondents were analyzed using Covariance-Based Structural Equation Modeling (CB-SEM) via the lavaan package in R, with mediation tested through 5,000 bootstrap resamples. Model fit was excellent (CFI = 0.978, RMSEA = 0.076). Results confirm that credibility is the primary significant predictor of trust ($\beta = 0.486$, $p < .001$), while usefulness, interactivity, and personalization are non-significant. Trust strongly predicts satisfaction ($\beta = 0.532$, $p < .001$), and full mediation is confirmed exclusively for the credibility–trust–satisfaction pathway (indirect $\beta = 0.259$, $p < .001$). These findings establish the credibility highway as the primary verified route to consumer satisfaction in this market, with direct implications for chatbot design priorities, personalization strategy, and AI governance policy in comparable emerging markets.

Keywords: AI chatbots; consumer trust; credibility; emerging markets; Morocco; e-commerce; structural equation modeling; uncertainty avoidance

INTRODUCTION

The way businesses communicate with their customers is changing faster than most consumers are prepared for. Across global markets, AI-powered chatbots have moved from experimental novelty to frontline customer service infrastructure, no longer simply routing queries, but resolving complaints, processing returns, and sustaining multi-turn conversations with a degree of fluency that was, until recently, the exclusive domain of human agents. Mantouzia et al. (2025) describe this latest evolution as agentic AI: systems that do not wait to be asked, but anticipate, initiate, and act.

Morocco presents a particularly instructive case for examining these implications, and not merely because of its scale or growth trajectory. The country's Digital Morocco 2030 strategy reflects a genuine institutional bet on technology as an engine of economic development, and the imminent co-hosting of the 2030 FIFA World Cup will subject its digital service infrastructure to unprecedented international scrutiny. Yet beneath this institutional momentum, consumer-facing AI adoption remains early-stage, constrained by gaps in digital literacy, organizational readiness, and consumer trust (Allioui & Mourdi, 2024). Morocco is not simply an emerging market for AI chatbots; it is a culturally and institutionally distinct context that may produce fundamentally different patterns of trust formation than those documented in Western or East Asian markets.

Existing research on chatbot adoption has leaned heavily on the Technology Acceptance Model (TAM), treating perceived usefulness and ease of use as the primary levers of consumer acceptance (Davis, 1989; Venkatesh et al., 2003). This was a reasonable starting point in markets where consumers have extensive prior experience with digital technology. It is, however, no longer a sufficient framework when applied to emerging markets where the conditions that make TAM work do not fully hold. It remains unclear whether the same drivers, such as perceived usefulness and personalization, operate similarly where AI exposure is low and cultural trust relies heavily on predictability and reliability (Hofstede, 2001). In high uncertainty-avoidance societies like Morocco, consumers may prioritize a chatbot's credibility, that is its honesty, reliability, and transparency, over its ability to be useful or personalized, because credibility reduces perceived risk in an unfamiliar technology encounter.

To address this gap, this study proposes a contextualized model of consumer trust in AI chatbot services tested among Moroccan e-commerce users. We argue that credibility will be the primary feature that significantly activates the trust-satisfaction pathway, "while perceived usefulness, interactivity, and personalization are expected to have weak or non-significant effects. This prediction follows from three considerations: first, low prior AI exposure limits consumers' ability to evaluate usefulness; second, personalization heightens privacy concerns in a low-trust environment; and third, in high uncertainty-avoidance cultures, consumers anchor trust on integrity signals rather than functional or tailored features (Hofstede, 2001). By making these predictions explicit from the outset, the study provides theoretically grounded explanations for the non-significant results rather than treating them as unexpected failures.

The paper examines four chatbot dimensions, perceived usefulness, interactivity, personalization, and credibility, as predictors of consumer trust, and tests trust as the mediating mechanism between these features and overall satisfaction. The findings, drawn from CB-SEM analysis of survey data collected across Moroccan e-commerce users, confirm that credibility is the primary feature that successfully activates the trust-satisfaction pathway, pointing to reliability and honesty as the non-negotiable foundations of AI-mediated service in emerging market contexts.

LITERATURE REVIEW

Theoretical Foundations: Beyond TAM

Davis (1989) introduced the Technology Acceptance Model (TAM), proposing that technology adoption is shaped by perceived usefulness and ease of use. Venkatesh et al. (2003) later extended this into the Unified Theory of Acceptance and Use of Technology (UTAUT), adding social influence and environmental conditions as further drivers. Together, these frameworks have guided decades of research and remain important reference points in the information systems literature.

Their explanatory power has clear limits, however, particularly in AI-driven customer service in emerging markets. Both TAM and UTAUT were developed predominantly in Western and East Asian contexts where consumers have substantial prior experience with digital technology. In markets where AI exposure is low and cultural orientations differ substantially, the predictive validity of TAM-derived constructs cannot be taken for granted. As Castillo and Caruana (2025) show through a systematic review of 91 chatbot interaction studies, functional utility is now a basic requirement rather than a differentiator. In Morocco specifically, Allioui and Mourdi (2024) find that AI adoption is held back not only by infrastructure gaps but by a business culture built around personal relationships, in which automated interactions are met with instinctive caution. Morocco scores high on uncertainty avoidance (Hofstede, 2001), meaning consumers prefer predictable, reliable signals over novel or unfamiliar features, and trust must be earned through consistent demonstrations of integrity.

The Four Chatbot Feature Dimensions

This study examines four chatbot feature dimensions as predictors of consumer trust. The theoretical framing of each is informed by Morocco's high uncertainty-avoidance orientation (Hofstede, 2001), which generates specific directional predictions stated explicitly rather than deferred to the empirical results.

Perceived Usefulness: A Hygiene Factor in an Emerging Market

Perceived usefulness, defined by Davis (1989) as the degree to which a user believes a system will improve their performance, is reconceptualized here as what Castillo and Caruana (2025) call a hygiene factor, a threshold condition whose absence causes damage but whose presence alone generates no positive advantage. In Morocco, where consumers have limited prior exposure to AI chatbots, usefulness perceptions are likely underdeveloped and unreliable as trust predictors. Crolic et al. (2022) confirm that when functional competence is expected, it does not actively generate trust. Nevertheless, consistent with TAM's foundational predictions, this study hypothesizes that perceived usefulness will positively influence consumer trust, while acknowledging that its effect may be weaker in this context than in more digitally mature markets.

H1: In the context of Morocco, perceived usefulness has a significant positive effect on consumer trust in AI chatbots.

Interactivity: A Relational Signal Insufficient for Trust

Interactivity represents a chatbot's capacity to sustain natural, two-way conversation, maintaining context across exchanges and creating a sense of social presence. Prakash et al. (2023) demonstrate that conversational cues significantly shape trust perceptions among chatbot users. In a commercial culture like Morocco's, where interpersonal communication has historically been central to business relationships, conversational fluency could plausibly serve as a relational signal. However, in high uncertainty-avoidance cultures, conversational fluency alone may be insufficient if it is not accompanied by a deeper perception of honesty and dependability (Hofstede, 2001). Despite these cultural constraints, interactivity is hypothesized to have a positive effect on trust, as conversational fluency represents a meaningful quality signal even in high uncertainty-avoidance contexts, though its magnitude may be limited without a supporting credibility foundation.

H2: In the context of Morocco, interactivity has a significant positive effect on consumer trust in AI chatbots.

Personalization: The Privacy Paradox in a Low-Trust Environment

Soni (2024) documents the personalization-privacy paradox: consumers want the convenience of customized experiences but worry about the data collection that makes them possible. Privacy concerns do not simply coexist with appreciation for personalization, they actively suppress it. In the Moroccan context, this tension is compounded by limited familiarity with data protection practices and a low-trust technology environment where sharing personal data heightens rather than reduces perceived risk. While these tensions present real barriers, personalization is nonetheless hypothesized to have a positive effect on trust, as the potential benefits of feeling understood may still outweigh privacy concerns for some consumers, even if the net effect is expected to be modest in this context.

H3: In the context of Morocco, personalization has a significant positive effect on consumer trust in AI chatbots.

Credibility: The Primary Trust Driver in High Uncertainty-Avoidance Cultures

Credibility describes the consumer's overall assessment of the trustworthiness and competence of the entity behind the chatbot, a judgment shaped by reputation, honesty, and reliability. Morocco scores high on uncertainty avoidance (Hofstede, 2001), meaning consumers seek to reduce perceived risk by anchoring trust on attributes that signal predictability and integrity. In high uncertainty-avoidance cultures, trust in technology is built through consistent demonstrations of honesty and transparency, precisely the dimensions that define credibility (Minkov & Hofstede, 2012). Matosas-Lopez (2024) provides empirical support: in a study of 651 AI voice assistant users, brand credibility, measured through trustworthiness and expertise, had a significant positive effect on customer satisfaction ($b = 0.289$, $p < .001$) and continued use intention ($b = 0.304$, $p < .001$), while technical performance features did not independently drive credibility. In the Moroccan context, credibility is theorized to be the singular gateway through which consumer trust is activated.

H4: Credibility has a significant positive effect on consumer trust in AI chatbots.

Trust and Satisfaction: The Gatekeeper Mechanism

The model positions trust as the central mediating construct through which chatbot features either translate, or fail to translate, into consumer satisfaction. Mayer et al. (1995) define trust as a willingness to be vulnerable to another party based on positive expectations of their ability, benevolence, and integrity, identifying integrity as particularly powerful in situations of uncertainty. This maps directly onto credibility as operationalized in this study. Gefen (2000) shows that in online commercial settings, trust functions as a condition for engagement, something that must exist before the consumer enters into a transaction at all, which is especially relevant in Morocco's relationship-based commercial culture. Yang et al. (2024) extend this into the chatbot context, finding trust to be the strongest individual predictor of engagement behavior ($b = 0.253$, $p < .001$). Together these frameworks support the gatekeeper mechanism: trust does not simply correlate with satisfaction, it comes before it and makes it possible.

H5: Consumer trust has a significant positive effect on customer satisfaction.

Building on this direct relationship, and given that credibility has been established as the primary feature capable of activating consumer trust in the Moroccan context, the model proposes that trust acts as the specific pathway connecting credibility to satisfaction, such that credibility influences satisfaction not directly, but only insofar as it first succeeds in generating trust.

H6: Trust mediates the relationship between credibility and customer satisfaction.

METHODOLOGY

Research Design

This study adopts a quantitative, deductive research design to test a theoretically derived mediation model in which specific chatbot features predict consumer trust, and trust predicts customer satisfaction. This design is consistent with established practice in consumer behavior and information systems research, where structured survey instruments and covariance-based structural modeling are used to test theoretically specified relationships between latent constructs (Venkatesh et al., 2003).

Scale Development and Validation

The measurement instrument was developed by adapting established scales from the AI, trust, and e-commerce literature. All items were measured on a 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree), selected to increase response sensitivity and capture finer variation in consumer perceptions. Prior to main data collection, a scale validation phase was conducted with an initial sample of 320 respondents. Psychometric analysis revealed Cronbach's Alpha values exceeding 0.98 across all constructs, signaling item redundancy and raising content validity concerns (Hair et al., 2014; Sarstedt et al., 2019). The measurement scales were subsequently refined through exploratory factor analysis, retaining the three items per construct with the highest factor loadings. This produced a refined 18-item model that maintained strong internal consistency while ensuring cleaner discriminant separation between constructs.

A critical methodological decision was the implementation of procedural debiasing through conceptual definitions, a formal strategy for reducing Common Method Bias (CMB) in self-report instruments (Podsakoff et al., 2003). The specific technique was cognitive priming, whereby each construct was preceded by a plain-language definition to ensure respondents distinguished clearly between features before responding. This directly addressed the AI halo effect identified in the pilot data, where respondents applied generalized positive evaluations across all chatbot-related items regardless of which feature was being assessed, a well-documented form of feature blurring that artificially inflates inter-construct correlations. As a further safeguard, the low inter-construct correlations observed in the data provide additional reassurance that common method bias did not critically threaten the validity of the findings.

Sample and Data Collection

The main survey was administered via Google Forms, selected for its automatic language adaptation functionality allowing the interface to display in Arabic, French, or English based on each respondent's device settings. This maximizes the ecological validity of the sample by accommodating all three dominant languages of Moroccan commercial life, ensuring findings reflect the real Moroccan e-commerce consumer rather than a linguistically self-selected subset. Respondents were recruited through university networks, professional contacts, and social media, targeting Moroccan adults with prior chatbot experience in an e-commerce context. The final dataset comprised 150 valid responses, consistent with CB-SEM guidelines recommending a minimum of 100 to 150 observations for models of moderate complexity (Hair et al., 2014). While the sample size meets minimum CB-SEM thresholds, the authors acknowledge that a larger and more demographically diverse sample would strengthen generalizability, and future research should seek broader representation across age, gender, and income groups.

Discriminant Validity

Discriminant validity was confirmed through inter-construct correlations. Most pairs showed low to moderate correlations, with several strikingly low: the correlation between Trust and Usefulness was 0.018, effectively zero, confirming that respondents treated these as entirely separate dimensions. Full psychometric properties are reported in Table 1.

Table 1. Measurement Model: Factor Loadings, Reliability, and Validity Indicators (N = 150)

Usefulness	Use1-3	0.959 - 0.987	0.972	0.954	0.984
Interactivity	Int1-3	0.981 - 0.988	0.984	0.968	0.989
Personalization	Pers1-3	0.958 - 0.989	0.978	0.956	0.985
Credibility	Cred1-3	0.973 - 0.987	0.982	0.963	0.987
Trust	Trust1-3	0.938 - 0.978	0.961	0.922	0.973
Satisfaction	Sat1-3	0.948 - 0.976	0.964	0.930	0.975

Note. AVE = Average Variance Extracted; CR = Composite Reliability. All factor loadings significant at $p < .001$.

The measurement model demonstrates exceptional psychometric properties. All factor loadings exceed 0.93, AVE values range from 0.922 to 0.968, far exceeding the 0.50 threshold (Hair et al., 2014), and CR scores exceed 0.97 across all constructs. The uniformly high reliability values are a direct consequence of the cognitive priming intervention, which narrowed respondents' conceptual focus, naturally producing high within-construct agreement. The decisive test of genuine construct distinction lies in the discriminant validity evidence: the near-zero Trust-Usefulness correlation ($r = 0.018$) confirms that feature blurring was successfully resolved.

Analytical Framework

Data analysis was conducted in two stages. First, data cleaning and reliability checks were performed using Python. Second, hypothesis testing and mediation analysis were conducted using Covariance-Based Structural Equation Modeling (CB-SEM) via the lavaan package in R (Rosseel, 2012). The six constructs are treated as latent variables, each measured through multiple observable indicators. CB-SEM simultaneously estimates the measurement model and the structural relationships between latent constructs, making it the methodologically appropriate choice over standard regression, which treats all variables as directly observed and ignores measurement error. The measurement model follows standard CFA specification: $y_i = \lambda_i\eta + \varepsilon_i$, where y_i is the observed item response, λ_i the factor loading, η the latent construct, and ε_i the measurement error. The structural equation for Trust is: $\eta Trust = \gamma 1 \xi Use + \gamma 2 \xi Int + \gamma 3 \xi Pers + \gamma 4 \xi Cred + \zeta 1$, and satisfaction is specified as: $\eta Sat = \beta 1 \eta Trust + \zeta 2$. The central mediation hypothesis H6 is tested by estimating the indirect effect using 5,000 bootstrap resamples following Hayes (2013), where Indirect Effect = a x b. An indirect effect is significant when

its 95% confidence interval excludes zero. Model fit is evaluated using CFI and TLI (threshold > 0.95) and RMSEA (threshold < 0.08) (Hair et al., 2014).

RESULTS

Global Model Fit

The CB-SEM model demonstrated excellent fit: CFI = 0.978, TLI = 0.973, and RMSEA = 0.076, 90% CI [0.061, 0.091], all meeting or exceeding publication thresholds (Hair et al., 2014). The SRMR = 0.104 marginally exceeded the 0.10 conventional threshold, a pattern consistent with models of moderate complexity at this sample size, and one that does not compromise overall model integrity given the strong performance across the three primary indices.

Measurement Model Confirmation

All 18 items loaded significantly onto their respective latent constructs ($p < .001$), with standardized factor loadings ranging from 0.938 to 0.989 and item-level R^2 values from 0.879 to 0.978. Full psychometric details are in Table 1. Discriminant validity was further confirmed by low off-diagonal covariances, most notably near-zero covariances between Credibility and Usefulness (r = -0.088) and Credibility and Interactivity (r = -0.092).

Structural Path Results

The structural model examined the simultaneous effects of four chatbot feature dimensions on consumer trust and the subsequent effect of trust on customer satisfaction. Results are reported in Table 2 and visualized in Figure 1.

Table 2. Structural Path Coefficients and Hypothesis Testing Results

H1	Usefulness → Trust	0.143	1.138	0.255	Not Supported
H2	Interactivity → Trust	-0.067	-0.506	0.613	Not Supported
H3	Personalization → Trust	-0.087	-0.939	0.348	Not Supported
H4	Credibility → Trust	0.486	5.951	< .001	Supported
H5	Trust → Satisfaction	0.532	6.688	< .001	Supported

Note. Standardized coefficients (Std.all) reported. Standard errors via bootstrap, 5,000 resamples. N = 150.

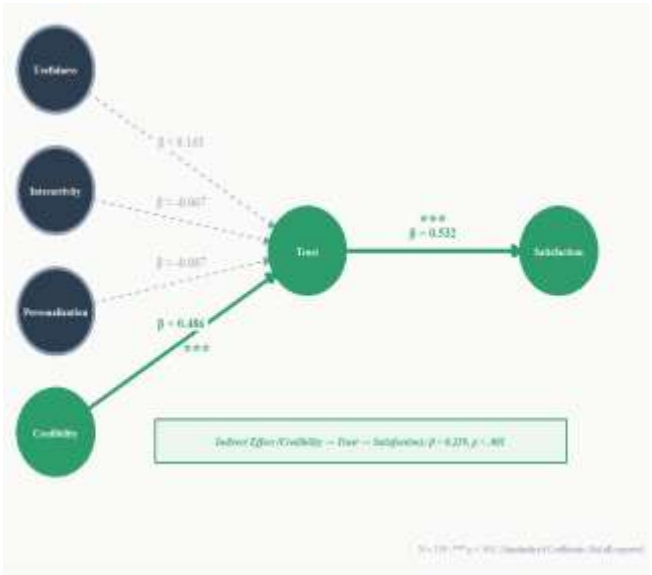

Figure 1. Structural model results. Standardized path coefficients shown. Solid green lines indicate significant paths ($p < .001$). Dashed lines indicate non-significant paths ($p > .05$). N = 150.

Perceived usefulness (b = 0.143, p = 0.255), interactivity (b = -0.067, p = 0.613), and personalization (b = -0.087, p = 0.348) all failed to reach statistical significance; H1, H2, and H3 are therefore not supported, a pattern consistent with the culturally grounded theoretical expectations developed in Chapter 2. The negative point estimates for interactivity and personalization are noteworthy and discussed in detail in Chapter 5. Together, the four features explain 23.0% of variance in trust (R^2 = 0.230), with credibility accounting for the substantial majority.

Credibility emerged as a strong and significant predictor of trust (b = 0.486, z = 5.951, p < .001), supporting H4. Trust in turn demonstrated a strong positive effect on satisfaction (b = 0.532, z = 6.688, p < .001), supporting H5, with trust alone explaining 28.3% of variance in satisfaction (R^2 = 0.283), confirming its role as a powerful behavioral gateway.

Mediation Analysis

To test H6, the indirect effect of each feature on satisfaction through trust was estimated using 5,000 bootstrap resamples (Hayes, 2013). Results are reported in Table 3.

Table 3. Bootstrap Mediation Analysis: Indirect Effects on Customer Satisfaction Through Trust

Usefulness → Trust → Satisfaction	0.076	1.125	0.260	Includes zero	Not Significant
Interactivity → Trust → Satisfaction	-0.035	-0.513	0.608	Includes zero	Not Significant
Personalization → Trust → Satisfaction	-0.046	-0.922	0.357	Includes zero	Not Significant
Credibility → Trust → Satisfaction	0.259	3.925	< .001	Excludes zero	Significant

Note. Indirect effects via 5,000 bootstrap resamples (Hayes, 2013). Significance when 95% CI excludes zero. N = 150.

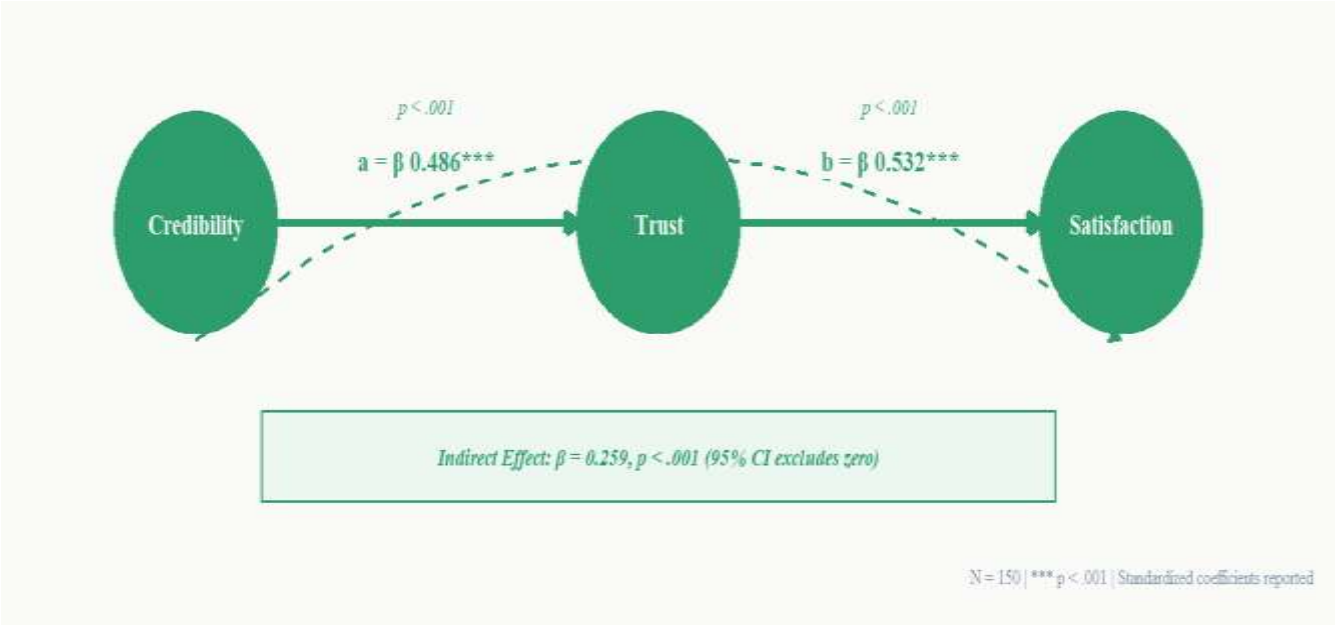

Figure 2. Mediation analysis results. Credibility → Trust → Satisfaction chain with path coefficients (a = 0.486, b = 0.532) and indirect effect (b = 0.259, p < .001). Estimated using 5,000 bootstrap resamples.

The indirect effects of usefulness (0.076, p = 0.260), interactivity (-0.035, p = 0.608), and personalization (-0.046, p = 0.357) are all non-significant. The indirect effect of credibility on satisfaction through trust is significant and substantively meaningful: indirect b = 0.259, z = 3.925, p < .001, 95% CI excludes zero. This confirms H6, trust fully mediates the credibility-satisfaction relationship. The constituent paths are both strong: credibility predicts trust at b = 0.486, and trust predicts satisfaction at b = 0.532. Together these form what this

study terms the credibility highway, the primar verified route from chatbot feature perception to consumer satisfaction in the Moroccan e-commerce market.

DISCUSSION

Overview of Findings

This study set out to identify which chatbot feature dimensions drive consumer trust in the Moroccan e-commerce context and to test whether trust mediates the features-satisfaction relationship. The results present a clear pattern: only credibility emerged as a significant predictor of trust, consistent with the culturally grounded predictions advanced in Chapter 2. Usefulness, interactivity, and personalization each produced non-significant results, a finding explained by the uncertainty avoidance framework developed from Hofstede (2001) and discussed in detail in Section 5.3. Trust proved a strong predictor of satisfaction, and mediation was confirmed exclusively for credibility. In an emerging market characterized by high uncertainty avoidance and early-stage AI adoption, consumers anchor trust not on functional performance, conversational quality, or personalized experience, but on whether the chatbot and the brand behind it are perceived as honest, reliable, and transparent.

The Credibility-First Finding: Theoretical Implications

The strong and significant effect of credibility on trust ($b = 0.486$, $p < .001$) is both statistically and theoretically meaningful. Mayer et al. (1995) identify integrity, the perception that another party adheres to acceptable principles of honesty, as particularly powerful in situations of uncertainty, where the trustor cannot evaluate competence directly. This is precisely the situation facing Moroccan consumers in early encounters with AI chatbots: lacking prior experience, they anchor trust on the integrity signals available to them, the honesty, reliability, and transparency of what the chatbot communicates. Morocco's high uncertainty-avoidance orientation reinforces this: in such cultures, trust in unfamiliar technology is built through consistent demonstrations of honesty rather than impressive features (Hofstede, 2001; Minkov & Hofstede, 2012). Matosas-Lopez (2024) confirms the mechanism empirically, showing that information quality drives brand credibility while technical features do not. The present study extends this chain: information quality builds credibility, credibility builds trust. Theoretically, this positions credibility as the missing cultural moderator that TAM-derived frameworks fail to account for, and its inclusion in future models of AI service adoption in comparable emerging markets is strongly warranted.

Non-Significant Findings: Theoretical Contributions, Not Failures

The non-significant results for H1, H2, and H3 each contribute a specific theoretical insight to the AI chatbot adoption literature, and are best understood through the cultural framework developed in Chapter 2 rather than as unexplained failures.

The non-significant effect of usefulness ($b = 0.143$, $p = 0.255$) confirms the hygiene factor repositioning advanced in Chapter 2. In Morocco, limited prior AI exposure constrains consumers' ability to evaluate functional usefulness meaningfully (Allioui & Mourdi, 2024), leaving usefulness perceptions underdeveloped and perceptually inert as trust predictors. This challenges TAM's cross-contextual validity and calls for greater attention to the conditions under which its core constructs retain predictive power. It should also be noted that measurement limitations or sample-specific characteristics may have partially contributed to these non-significant results, and future studies with larger and more diverse samples should retest these relationships before drawing definitive conclusions

The non-significant and negative effect of interactivity ($b = -0.067$, $p = 0.613$) challenges the widely held assumption that conversational fluency reliably builds trust. Prakash et al. (2023) document this relationship in Western and East Asian contexts, but the present study establishes a cultural boundary condition: in high uncertainty-avoidance markets, a chatbot must first be perceived as credible before its interactivity can activate trust. Relational signals require a credibility foundation that may not yet exist in early-stage AI adoption markets.

The non-significant and negative coefficient for personalization (b = -0.087, p = 0.348) is perhaps the most noteworthy non-significant result in this study. A negative direction suggests personalization may actively undermine trust formation rather than simply failing to build it. This is consistent with Soni's (2024) privacy paradox: in a low data-literacy, low regulatory-confidence environment, personalization activates surveillance anxiety more reliably than it creates a sense of being understood. Personalization strategies that perform well in data-literate markets may be actively counterproductive in contexts like Morocco.

Trust as the Gatekeeper: Mediation Confirmed

The strong effect of trust on satisfaction (b = 0.532, p < .001) confirms trust as a behavioral gateway, consistent with Yang et al. (2024). The full mediation result (indirect b = 0.259, p < .001, 95% CI excludes zero) establishes that credibility reaches satisfaction exclusively through trust. The practical value of credibility is entirely dependent on its ability to first generate trust. No other feature activates this pathway. The credibility highway is confirmed as the primary verified route to consumer satisfaction in this market, with no alternative routes available.

Table 4. Summary of Theoretical Contributions

H1: Usefulness → Trust	Not Supported (b=0.143)	Usefulness is hygiene factor in early-stage AI markets; challenges TAM validity	Davis (1989); Castillo & Caruana (2025)
H2: Interactivity → Trust	Not Supported (b=-0.067)	Cultural boundary condition for interactivity-trust; relational signals need credibility foundation	Prakash et al. (2023); Hofstede (2001)
H3: Personalization → Trust	Not Supported (b=-0.087)	Extends privacy paradox to emerging market chatbots; personalization may suppress trust	Soni (2024); Allioui & Mourdi (2024)
H4: Credibility → Trust	Supported (b=0.486***)	Credibility as primary trust driver in high uncertainty-avoidance cultures; missing TAM moderator	Matosas-Lopez (2024); Mayer et al. (1995); Hofstede (2001)
H5: Trust → Satisfaction	Supported (b=0.532***)	Trust confirmed as behavioral gatekeeper to satisfaction in AI chatbot context	Gefen (2000); Yang et al. (2024)
H6: Trust mediates Cred → Sat	Supported (ind. b=0.259***)	Full mediation confirms credibility highway as primary verified route to satisfaction	Mayer et al. (1995); Minkov & Hofstede (2012)

Note. *** p < .001.

Practical Implications

For chatbot designers and AI developers, the credibility-first finding is unambiguous: prioritize information accuracy, source transparency, and response reliability over conversational sophistication. A chatbot that speaks naturally but provides inaccurate or opaque information will not generate consumer trust in Morocco. Investment in natural language processing and personalization engines represents a misallocation of resources until the credibility foundation is established. As Morocco co-hosts the 2030 FIFA World Cup, this distinction between what is technically impressive and what actually builds trust becomes a matter of national reputational consequence.

For e-commerce managers, the study highlights the importance of making brand credibility visible at the chatbot interface level through transparent data usage disclosures, clear indicators of chatbot identity, and consistent information quality. The negative personalization coefficient further suggests that aggressive data-driven personalization may be actively undermining trust, and a measured opt-in approach is warranted until consumer familiarity with data protection matures.

For policymakers, investment in consumer data protection education and enforceable AI data governance frameworks is not merely a compliance requirement but a precondition for unlocking the economic value of personalized AI service. Morocco's Digital Morocco 2030 strategy provides the institutional framework; the present findings provide the empirical justification for prioritizing consumer trust infrastructure alongside technical deployment.

Limitations and Future Research

Several limitations should be acknowledged. First, convenience sampling limits generalizability to the broader Moroccan consumer population; future research should employ probability-based sampling. Second, the cross-sectional design cannot confirm causal direction with certainty; longitudinal designs would strengthen causal inference. Third, single-country scope means findings may not transfer to markets with different cultural profiles; cross-cultural comparisons between high and low uncertainty-avoidance markets would enrich the credibility-first framework. Fourth, despite procedural debiasing, self-report measures cannot entirely eliminate social desirability bias. Finally, other potentially relevant constructs, including perceived risk, response speed, and chatbot anthropomorphism, were not examined; future research should explore whether these interact with credibility to produce trust outcomes and whether the credibility highway is moderated by individual-level variables such as prior AI experience or digital literacy.

CONCLUSION

Summary of Contributions

This study set out to examine which chatbot feature dimensions drive consumer trust in an emerging market context and to test whether trust mediates the pathway from those features to customer satisfaction. Drawing on survey data from 150 Moroccan e-commerce users and analyzed through Covariance-Based Structural Equation Modeling, the findings produce a parsimonious and theoretically coherent answer: credibility is the primary chatbot feature that successfully activates consumer trust in this market, and trust is the exclusive pathway through which credibility reaches satisfaction. Perceived usefulness, interactivity, and personalization each produced non-significant effects on trust, findings that are not empirical failures but are theoretically explained by Morocco's high uncertainty-avoidance cultural orientation and early-stage AI adoption environment.

The study makes three distinct contributions. First, it establishes credibility as the missing cultural moderator in TAM-derived frameworks applied to AI adoption in emerging markets: where consumers lack prior experience with AI-mediated service, integrity signals outweigh functional or relational cues in determining whether trust is extended. Second, it demonstrates cultural boundary conditions for well-established relationships in the chatbot literature, specifically that neither interactivity nor personalization reliably builds trust when the credibility foundation has not been established, and that personalization may actively suppress trust in low data-literacy environments by activating surveillance anxiety. Third, it introduces and empirically validates the credibility highway concept: the full mediation chain through which credibility reaches satisfaction exclusively via trust, with no alternative routes confirmed in this market context.

Practical Implications

The credibility-first finding carries direct implications for practitioners operating in Morocco and comparable emerging markets. For chatbot designers and AI developers, it reorders investment priorities: response accuracy, source transparency, and information reliability are the capabilities that determine whether trust is extended, not conversational sophistication or personalization depth. A technically impressive chatbot that provides inaccurate

or opaque information will not generate consumer trust in this environment. Resources directed at advanced natural language processing or behavioral recommendation systems represent a misallocation until the credibility foundation is secured.

For e-commerce managers, the negative direction of the personalization coefficient is a practical warning: data-driven personalization strategies that perform well in high data-literacy markets may be actively counterproductive in Morocco. An opt-in approach that makes data usage transparent and gives consumers meaningful control is likely to perform better than algorithmic personalization deployed at scale. For policymakers, the findings provide empirical support for prioritizing consumer-facing AI governance, specifically enforceable data protection standards and public digital literacy initiatives, as preconditions for unlocking the commercial and developmental value of AI-mediated service. Morocco's Digital Morocco 2030 strategy and its role as 2030 FIFA World Cup co-host give these findings particular timeliness.

Closing Statement

As AI chatbots become standard infrastructure in e-commerce globally, the assumption that what builds trust in established markets will transfer automatically to emerging ones carries real commercial and reputational risk. This study demonstrates that in Morocco, the path to consumer satisfaction runs through a single gate: credibility. Not usefulness, not conversation quality, not personalization, but the fundamental perception that the chatbot and the organization behind it are honest, reliable, and transparent. This is not a limitation of Moroccan consumers; it is a rational response to an unfamiliar technology in a high uncertainty-avoidance cultural context with limited prior AI exposure. The credibility highway is not a temporary feature of Morocco's early adoption stage. It is a signal to the industry that in the markets of tomorrow, trust must be earned before it can be leveraged.

REFERENCES

1. Aguirre, E., Mahr, D., Grewal, D., de Ruyter, K., & Wetzels, M. (2015). Unraveling the personalization paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness. Journal of Retailing, 91(1), 34–49. https://doi.org/10.1016/j.jretai.2014.09.005
2. Allioui, H., & Mourdi, Y. (2024). Exploring the full potentials of IoT for better financial growth and stability: A comprehensive survey. Sensors, 23(19), 8015. https://doi.org/10.3390/s23198015
3. Castillo, D., & Farrugia Caruana, L. (2025). Unveiling customer expectations of chatbot interactions: A systematic literature review and research agenda. International Journal of Human–Computer Interaction. Advance online publication. https://doi.org/10.1080/10447318.2025.2588815
4. Crolic, C., Thomaz, F., Hadi, R., & Stephen, A. T. (2022). Blame the bot: Anthropomorphism and anger in customer–chatbot interactions. Journal of Marketing, 86(1), 132–148. https://doi.org/10.1177/00222429211045687
5. 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
6. Gefen, D. (2000). E-commerce: The role of familiarity and trust. Omega, 28(6), 725–737. https://doi.org/10.1016/S0305-0483(00)00021-9
7. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). Multivariate data analysis (7th ed.). Pearson.
8. Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford Press.
9. Hofstede, G. (2001). Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations (2nd ed.). SAGE Publications.
10. Mantouzia, S., Youssef, S., El Mouatassim, A., Ourahou, Y., Jafi, H., Zouhouredine, I., & Hamliri, M. (2025). Leveraging AI for business intelligence: A pathway to improved organizational performance in Morocco's manufacturing sector. *Multi Science Journal, 2025*(412). https://doi.org/10.31893/multiscience.2025412
11. Matosas-López, L. (2024). The influence of brand credibility and brand loyalty on customer satisfaction and continued use intention in new voice assistance services based on AI. Journal of Marketing Analytics, 13(1), 180–201. https://doi.org/10.1057/s41270-023-00278-8

12. Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. Academy of Management Review, 20(3), 709–734. https://doi.org/10.2307/258792
13. Minkov, M., & Hofstede, G. (2012). Hofstede's fifth dimension: New evidence from the World Values Survey. Journal of Cross-Cultural Psychology, 43(1), 3–14. https://doi.org/10.1177/0022022110388567
14. Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879
15. Prakash, A. V., Joshi, A., Nim, S., & Das, S. (2023). Antecedents and consequences of customer satisfaction with AI-based chatbots. International Journal of Information Management Data Insights, 3(2), 100189. https://doi.org/10.1016/j.jjimei.2023.100189
16. Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. Journal of Statistical Software, 48(2), 1–36. https://doi.org/10.18637/jss.v048.i02
17. Sarstedt, M., Ringle, C. M., & Hair, J. F. (2019). Partial least squares structural equation modeling. In C. Homburg, M. Klarmann, & A. E. Vomberg (Eds.), Handbook of market research (pp. 587–632). Springer. https://doi.org/10.1007/978-3-319-57413-4_15
18. Soni, V. D. (2024). Personalization versus privacy: Consumer trust in AI-driven marketing. International Journal of Innovative Research in Technology, 11(1), 183–188.
19. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425–478. https://doi.org/10.2307/30036540
20. Yang, Y., Tavares, J., & Oliveira, T. (2024). A new research model for artificial intelligence–based well-being chatbot engagement: Survey study. JMIR Human Factors, 11, e59908. https://doi.org/10.2196/59908