WHY DOMAIN-SPECIFIC TRUST IN AI MATTERS? EVIDENCE FROM CROATIA WITH IMPLICATIONS FOR SERVICE INNOVATION

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Abstract

Purpose – This study examines whether trust in artificial intelligence (AI) varies across application domains and explores why such differences may matter for AI adoption in tourism and service industries.
Methodology – The study draws on data from an online survey conducted among internet users in Croatia (N = 411). The survey partially replicates key measures from a recent global study on trust in AI, focusing on trust, acceptance, and reliance across multiple application domains, including healthcare, security, human resources, and recommender systems. Descriptive and comparative analyses were used to identify domain-specific patterns and to situate the findings in relation to existing global research.
Findings – The results indicate that trust in AI is strongly domain-specific. Respondents report higher levels of trust and willingness to rely on AI in assistive applications, particularly recommender systems, while trust is substantially lower in domains where AI is perceived to evaluate or make consequential decisions about individuals, such as human resources. These domain-based differences mirror patterns reported in prior global research, while appearing more pronounced in the Croatian sample.
Originality of the research – By providing empirical insights from a digitally engaged population, this study contributes to ongoing discussions on domain-specific trust in AI and highlights implications for AI adoption in tourism and other service-oriented contexts where personalization and user acceptance are critical.
Keywords Artificial intelligence, Trust in AI, Domain-specific trust, Recommender systems, Tourism services, Public attitudes

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INTRODUCTION

Artificial intelligence (AI) has become a central component of digital transformation across service industries, including tourism and hospitality. AI-enabled applications such as recommender systems, chatbots, virtual assistants, and automated decision-support tools are increasingly used to personalize services, optimize operations, and enhance customer experiences (Buhalis & Leung, 2018; Tussyadiah, 2020). Recent tourism and hospitality research further suggests that AI is reshaping marketing processes, customer engagement, and service design, while also raising new questions about ethics, transparency, and user acceptance (Bulchand-Gidumal et al., 2024). As AI-based systems become more deeply embedded in tourism services, their role is no longer limited to operational efficiency, but increasingly extends to value creation, personalization, and competitive differentiation. At the same time, the growing importance of AI in tourism is matched by a rapidly expanding research agenda. Bibliometric evidence indicates that AI-related interest in tourism and hospitality has grown substantially in recent years, reflecting the increasing strategic relevance of intelligent systems across the sector (Knani et al., 2022). Among the most prominent applications are recommender systems, which have gained particular significance because they influence destination choice, accommodation selection, activity planning, and content exposure in digitally mediated travel journeys (Solano-Barliza et al., 2024). More recently, generative AI has added a further layer of transformation, opening new possibilities for interactive travel support, conversational assistance, and AI-mediated service encounters, while simultaneously increasing uncertainty regarding user trust, transparency, and responsible implementation (Li et al., 2025).

Recent evidence suggests that questions of trust, acceptance, and governance in AI are becoming even more salient as AI use becomes more widespread across personal and professional contexts. The most recent global follow-up study by Gillespie et al. (2025), based on 48,340 respondents across 47 countries, shows that public attitudes toward AI remain mixed: only 46% of respondents reported being willing to trust AI systems, while 70% considered AI regulation necessary. The same study also identifies trust as a central driver of AI acceptance and shows that AI literacy contributes to the formation of trust. In addition, service management research in hospitality and tourism emphasizes that digital transformation requires technological integration, as well as communication, transparency, and customer-centered value creation (Kandampully et al., 2024). This broader context is also increasingly visible in Croatia, where recent evidence points to the growing importance of trust and acceptance in shaping public responses to AI (Bara et al., 2026).

However, technological capability alone does not guarantee successful adoption. A growing body of research highlights trust as a critical prerequisite for the acceptance, use, and continued reliance on AI systems (McKnight et al., 2011; Rousseau et al., 1998). In tourism and other service settings, trust is particularly important because many AI applications rely on personal data, operate in uncertain ways, and directly shape user experiences and decisions. When users perceive AI systems as insufficiently transparent, biased, intrusive, or misaligned with human values, they may resist their use, limit data sharing, or disengage from AI-mediated services. Recent tourism research also indicates that user responses to AI are shaped not only by perceived usefulness, but also by personalization, perceived enjoyment, ethical AI practices, and broader trust dynamics (Huang et al., 2024; Koo et al., 2025). This suggests that trust should be understood not as a peripheral variable, but as a core condition for the successful integration of AI into tourism and service innovation.

Recent empirical research further suggests that trust in AI is not a generalized attitude, but varies substantially across application domains. One of the most comprehensive investigations of this phenomenon is the global study by Gillespie et al. (2023), which examines public trust, acceptance, perceived benefits, and risks of AI across 17 countries. Their findings indicate that people tend to express higher trust in assistive AI systems and lower trust in applications that evaluate individuals or make consequential decisions. An earlier study by Gillespie et al. (2021) similarly showed that trust in AI differs across domains such as healthcare and human resources, reinforcing the idea that "trust in AI" should be conceptualized as domain-specific rather than uniform. These findings are consistent with broader theoretical perspectives on trust, which emphasize that trust judgments are shaped by context, perceived risk, and the nature of human–technology interaction (Mayer et al., 1995; McKnight & Chervany, 2002). They are also highly relevant for tourism, where many AI applications (especially recommender systems) are framed as supportive and assistive, whereas other AI applications may be perceived as more intrusive, evaluative, or difficult to understand.

For tourism and service industries, this distinction is particularly important. Many AI applications in tourism are designed to support rather than replace human judgment, especially in areas such as personalized recommendations, travel planning, and content filtering. This may make them more acceptable to users than AI systems operating in domains associated with monitoring, control, or formal evaluation. At the same time, tourism-related AI systems continue to raise concerns linked to data privacy, transparency, fairness, and the use of personal information, all of which may influence trust and behavioral intentions (Grundner & Neuhofer, 2021). As AI becomes more visible in customer-oriented tourism services, understanding whether users are willing to trust AI outputs, rely on them, and share information with AI systems becomes increasingly important.

Although large-scale international studies provide valuable insights into broad patterns of trust in AI, empirical evidence from specific national contexts remains comparatively limited. Global surveys often rely on nationally representative samples and report aggregated results, which can obscure how trust in AI is shaped within particular social, cultural, and technological environments. This issue is especially relevant in countries where digital adoption, public attitudes toward emerging technologies, and expectations of regulation may differ from broader international averages. Examining such contexts can therefore extend current understanding of how stable domain-specific trust patterns really are outside large cross-national datasets. This study builds directly on the methodological framework developed by Gillespie et al. (2023) by partially replicating selected measures of trust, acceptance, reliance, and information sharing across multiple AI application domains. The study was designed independently of the later global follow-up published in 2025 (Gillespie et al., 2025), which further strengthens the relevance of examining trust in AI as a domain-specific and context-sensitive phenomenon. Focusing on internet users in Croatia, the present study therefore examines whether the patterns identified in earlier global research remain visible within a smaller national context and whether they take a distinct form in a digitally engaged Croatian sample. Accordingly, the study addresses three research questions:

- **RQ1:** How does trust in AI vary across healthcare, security, recommender systems, and human resources among internet users in Croatia?
- **RQ2:** How do respondents' willingness to rely on AI-generated information and willingness to share information with AI differ across application domains?
- **RQ3:** How do the observed Croatian patterns compare descriptively with domain-specific patterns reported in the global study by Gillespie et al. (2023)?

The study makes two main contributions. First, it extends existing research on trust in AI by providing domain-specific evidence from Croatia and examining whether previously identified trust patterns remain visible in a different national setting. Second, by highlighting comparatively stronger trust in assistive AI applications (especially recommender systems), the findings offer insights that are directly relevant for tourism and service innovation. Given the central role of recommender systems in contemporary tourism services, understanding their trust profile is essential for assessing the conditions under which AI-enabled personalization is likely to be accepted by users. By situating its findings within established research on trust in AI and recent tourism scholarship, this paper contributes to the growing discussion on how domain-specific trust shapes AI adoption in service-oriented industries. At the same time, the growing strategic role of AI in service industries makes questions of responsible implementation, transparency, and governance increasingly important, particularly in the European context shaped by the AI Act (European Union, 2024).

1. METHODOLOGY

This study employed a cross-sectional survey design to examine domain-specific trust in AI among internet users in Croatia. The research was designed as a partial replication of the global study on trust in AI conducted by Gillespie et al. (2023), with a focus on selected constructs and application domains that are particularly relevant for service industries. The study adopted a quantitative research approach using an online questionnaire. The primary objective was to explore differences in trust-related perceptions across AI application domains rather than to estimate population parameters. Accordingly, the research design supports analytical and comparative interpretation of patterns in trust, acceptance, and reliance on AI systems.

1.1 Data collection and sample

Data were collected via an online survey administered using the Alchemer survey platform in June of 2025. The questionnaire was distributed through multiple digital communication channels, including email, social media platforms (Facebook, Instagram, and WhatsApp), and personal networks, following a snowball sampling strategy. Respondents who received the survey link were encouraged to share it further within their networks in order to reach a broader pool of potential participants. Participation was voluntary and anonymous. Before starting the questionnaire, participants were informed about the purpose of the study, the voluntary nature of participation, anonymity of responses, and the use of aggregated data for scientific purposes. Proceeding to the questionnaire was treated as informed consent. No directly identifying personal data were collected, and the dataset was analyzed and reported only in aggregated form. Respondents were required to be internet users and to report at least basic awareness of artificial intelligence in order to proceed with the questionnaire.

A total of 761 individuals accessed the online survey. At the screening stage, 36 respondents were excluded because they reported no prior awareness of artificial intelligence, namely, they had never heard, read, or seen anything about the topic. In addition, 314 responses were only partially completed and were not included in the final dataset, as they provided insufficient data for meaningful analysis. Most partial responses were terminated at the first question or within the first three questions. Consequently, the final analytical sample consisted of 411 complete responses. As the survey relied on a non-probability sampling approach, the sample is not nationally representative. In particular, the sample includes a higher proportion of female respondents and individuals with higher levels of digital engagement. The higher proportion of female respondents is likely related to the non-probability snowball sampling procedure and the structure of the digital and personal networks through which the survey was distributed. While this limits statistical generalization to the wider population, it is appropriate for the study's focus on perceptions of AI among digitally active users, who are most likely to encounter and interact with AI-enabled services.

1.2 Measurement instrument

The survey instrument was developed by adapting selected items from Gillespie et al. (2023) and related studies on trust in AI. The questionnaire covered several thematic blocks, including familiarity with AI, trust and acceptance of AI, emotional responses, perceived benefits and risks, and attitudes towards AI regulation. Consistent with the original study, different Likert-type response scales were used across questionnaire sections. Measures of trust and willingness to rely on AI were primarily assessed using 7-point scales (ranging from 1 = completely unwilling to 7 = completely willing). Perceived benefits, risks, and acceptance of AI were measured using 5-point scales (ranging from 1 = not at all to 5 = to a very great extent). Items related to trust in institutions responsible for AI governance were assessed using a 0–5 scale, where higher values indicated greater levels of trust. This approach ensured conceptual and methodological alignment with the original global study while capturing multiple dimensions of trust-related perceptions. For the purposes of this study, analyses focused on measures of trust, reliance, and willingness to share information with AI systems across four application domains: healthcare, security, human resources, and recommender systems.

Domain-specific trust scores were calculated as respondent-level mean scores of two application-specific trust items per domain. The healthcare composite included trust in AI for medical diagnosis and treatment of disease; the security composite included trust in AI for public-space surveillance and data analysis for crime prevention; the recommender systems composite included trust in AI for personalized product/service recommendations and personalized social media content recommendations; and the human resources composite included trust in AI for candidate selection and employee performance evaluation. The overall trust score was calculated as the mean of all eight domain-specific trust items. This approach was used because the Croatian survey partially replicated the original global instrument and retained selected trust items that corresponded to the same application domains.

Internal consistency was assessed for the overall eight-item trust scale and for the domain-specific two-item composites. The overall trust scale showed high internal consistency (Cronbach's $\alpha = .898$). For the two-item domain composites, inter-item correlations ranged from .754 to .804, supporting their use as concise domain-specific indicators. Cronbach's alpha values for the two-item composites ranged from .860 to .891.

1.3 Data analysis

Data analysis was conducted using descriptive and comparative techniques. Frequencies and percentages were used to describe the sample, while mean values and standard deviations were used to summarize trust, reliance, willingness to share information, perceived benefits, risks, and emotional responses. Domain-specific trust scores were calculated as respondent-level mean values of the relevant application-specific items. Paired-samples t-tests were used only for within-sample comparisons between respondents' willingness to rely on AI-generated information and their willingness to share information with AI within the same application domain. Effect sizes for paired comparisons were reported using Cohen's dz.

Patterns observed in the Croatian sample were also interpreted in relation to findings reported in the global study by Gillespie et al. (2023). However, given the non-representative nature of the Croatian sample, differences in measurement design, and the absence of access to the original global dataset, no inferential statistical testing was conducted between the Croatian and global samples. The comparison with the global study is therefore descriptive and interpretative rather than inferential.

2. RESULTS

2.1 Sample characteristics

The final sample consisted of 411 respondents. As noted earlier, the sample is not nationally representative and reflects a digitally engaged population. A summary of key demographic characteristics is presented in Table 1.

Table 1: **Sample characteristics**

Variable	Category	n	%
Gender	Female	274	66.7
	Male	136	33.1
	Other	1	0.2
Age group	Generation Z (≤ 24 years)	164	39.9
	Millennials (25–40 years)	151	36.7
	Generation X (41–56 years)	75	18.2
	Baby Boomers (≥ 57 years)	21	5.1
Education	Secondary education or lower	216	52.6
	Bachelor's degree	153	37.2
	Master's degree or higher	42	10.2
Employment status	Employed	238	57.9
	Student	90	21.9
	Student and employed	44	10.7
	Unemployed	32	7.8
	Retired	7	1.7

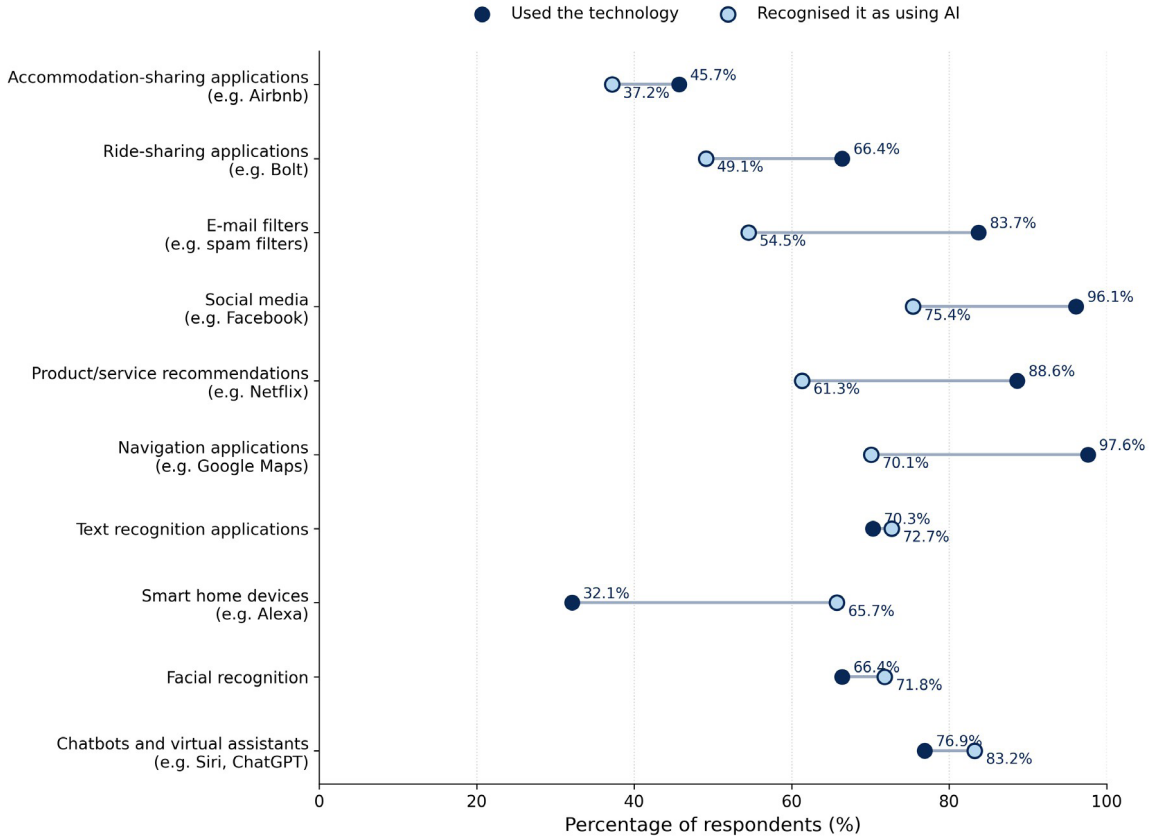
Overall, the sample includes a higher proportion of female respondents and individuals with higher levels of education, as well as respondents who report at least occasional use of artificial intelligence in everyday or professional contexts. These characteristics are consistent with the study's focus on perceptions of AI among internet users who are most likely to encounter AI-enabled services.

Respondents reported a moderate level of subjective AI knowledge overall (M = 3.3 on a 5-point scale). Self-assessed knowledge was highest for the statement "I feel I know what AI is" (M = 3.5), while lower but similar averages were recorded for feeling informed about how AI is used (M = 3.2) and for recognizing when AI is being used (M = 3.2). When aggregated into broader categories, 21% of respondents reported low subjective knowledge of AI, 39% moderate knowledge, and 40% high knowledge.

More than half of respondents (56.0%) reported using artificial intelligence at least occasionally in their work or studies. The largest share indicated occasional use (27.3%), followed by rare use (20.2%) and no use at all (17.5%). By contrast, intensive use remained limited, with only 11.2% reporting frequent use and 4.4% indicating that they use AI always or almost always. Overall, these results suggest that AI is already present in respondents' work and study routines, but for most users it has not yet become a deeply embedded or habitual tool.

As shown in Figure 1, the use of selected digital technologies was generally high, particularly for navigation applications, social media, product/service recommendations, e-mail filters, and chatbots or virtual assistants. However, recognition that these technologies use artificial intelligence was consistently lower for several widely used applications, especially e-mail filters, navigation applications, social media, and recommender systems. By contrast, AI use was more readily recognized in technologies where AI is more explicit or visible to users, such as chatbots, facial recognition, text recognition applications, and smart home devices. Overall, the data suggests that AI is often embedded in everyday digital services in ways that are widely used but not always equally recognized by users.

Figure 1: **Use of selected technologies and recognition of their AI use**



Note. The dark blue marker indicates the percentage of respondents who reported using the technology, while the light blue marker indicates the percentage who recognized that the technology uses artificial intelligence. Connecting lines illustrate the gap between technology use and recognition of AI use across the surveyed technologies.

Respondents' emotional reactions to artificial intelligence were assessed on a 5-point scale (1 = not at all; 5 = extremely) and were generally ambivalent. Concern emerged as the most strongly expressed emotion (M = 3.1), followed by optimism (M = 2.9). Fear (M = 2.7) and relaxation (M = 2.7) remained at similar moderate levels, followed by excitement (M = 2.6), while anger was the least expressed emotional response (M = 2.0). Overall, the findings suggest an emotionally ambivalent view of AI, characterized more by caution and uncertainty than by strong enthusiasm.

Perceived benefits of AI were assessed on a 5-point scale (1 = not at all; 5 = to a very great extent) and were generally moderate. The highest-rated expected benefit was innovation (M = 3.4), followed by improved effectiveness (M = 3.3) and greater precision and personalization (M = 3.3). Other expected benefits, including improved efficiency, better use of resources, improved outcomes for people, enhanced human activities, reduced costs, and improved decision-making, were evaluated at similar moderate levels (M = 3.1–3.2). Overall, the findings suggest that respondents recognize a broad range of potential benefits of AI, but do not have strongly optimistic expectations.

Perceived risks of AI were also assessed on a 5-point scale (1 = not at all; 5 = to a very great extent) and were, on average, rated higher than perceived benefits. The most strongly perceived risks were loss of privacy (M = 3.9) and reduction of human skills (M = 3.9), followed by job loss due to automation (M = 3.7). Other highly rated concerns included manipulation or harmful use (M = 3.6), system errors (M = 3.6), threats to human rights (M = 3.6), inaccurate results (M = 3.5), and cybersecurity risks and bias (both M = 3.4). Overall, these results indicate that respondents associate AI with substantial risks, particularly regarding privacy, human capabilities, and labor market consequences.

2.2 Trust in artificial intelligence across application domains

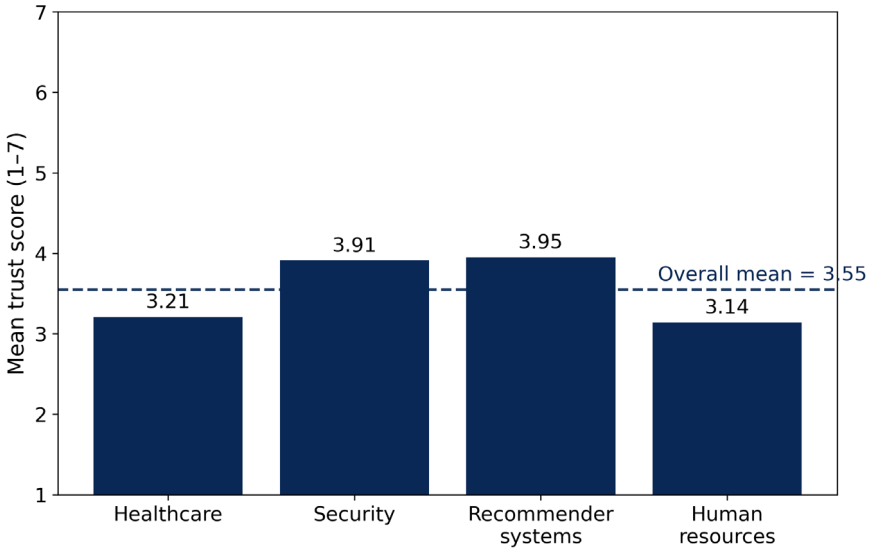
To address the core research objective, mean trust scores were calculated across four application domains: healthcare, security, recommender systems, and human resources. Each domain score was computed as the mean of two application-specific trust items measured on a 7-point scale. The results are presented in Table 2 and visualized in Figure 2.

Table 2: **Mean trust in AI by application domain**

Application domain	Items included	Mean	SD
Healthcare	2	3.21	1.55
Security	2	3.91	1.57
Recommender systems	2	3.95	1.60
Human resources	2	3.14	1.50
Overall trust across domains	8	3.55	1.26

Note. Domain scores were computed as the mean of two application-specific trust items measured on a 7-point scale (1 = completely unwilling to trust; 7 = completely willing to trust). The overall trust score was computed as the mean of all eight domain-specific trust items.

Figure 2: **Mean trust in AI across application domains**



Note. Mean trust scores are based on domain-specific composite measures calculated as the mean of two trust items per domain, measured on a 7-point scale (1 = completely unwilling to trust; 7 = completely willing to trust). The dashed horizontal line indicates the overall mean trust score across all eight items (M = 3.55).

As shown in Table 2 and Figure 2, trust in artificial intelligence varies across application domains. The highest mean trust score was observed for recommender systems (M = 3.95, SD = 1.60), followed closely by security applications (M = 3.91, SD = 1.57). Lower levels of trust were reported for healthcare (M = 3.21, SD = 1.55) and human resources (M = 3.14, SD = 1.50). The overall mean trust score across all eight items was 3.55 (SD = 1.26), indicating a generally moderate but cautious orientation towards AI.

The observed pattern suggests that respondents are more willing to trust AI in domains perceived as supportive or assistive, particularly recommender systems, than in domains where AI may directly affect individuals through evaluation or consequential decision-making. Human resources emerged as the least trusted domain, while healthcare also remained below the overall trust average despite the perceived societal importance of medical applications. These findings provide clear evidence that trust in AI is domain-specific rather than uniform. They also establish the empirical basis for the later discussion of why certain AI applications may face lower resistance in tourism and service contexts than others.

2.3 Reliance on AI and willingness to share information

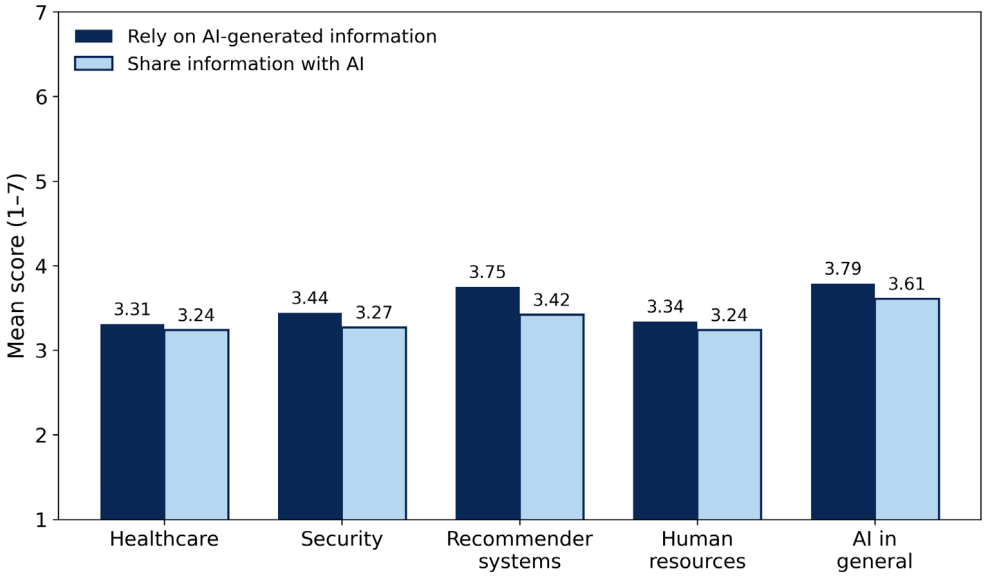
Beyond attitudinal trust, the analysis also examined two behavioral indicators of trust: respondents' willingness to rely on AI-generated information and their willingness to share information with AI across application domains. The results are presented in Table 3 and visualized in Figure 3.

Table 3: **Reliance on AI and willingness to share information by application domain**

Application domain	Rely on AI M (SD)	Share with AI M (SD)	ΔM	Paired t-test
Healthcare	3.31 (1.55)	3.24 (1.57)	0.08	t(404) = 1.42, p = .158
Security	3.44 (1.54)	3.27 (1.52)	0.17	t(405) = 3.48, p < .001
Recommender systems	3.75 (1.63)	3.42 (1.63)	0.33	t(404) = 7.29, p < .001
Human resources	3.34 (1.52)	3.24 (1.54)	0.11	t(406) = 2.07, p = .040
AI in general	3.79 (1.58)	3.61 (1.64)	0.20	t(406) = 4.08, p < .001

Note. All measures were assessed on a 7-point scale (1 = completely unwilling; 7 = completely willing). ΔM indicates the difference between willingness to rely on AI-generated information and willingness to share information with AI. Paired-samples t-tests were conducted using complete paired responses for each domain.

Figure 3: **Reliance on AI-generated information and willingness to share information with AI across application domains**



Note. Mean scores are presented on a 7-point scale (1 = completely unwilling; 7 = completely willing). For each application domain, the dark blue bar represents respondents' willingness to rely on AI-generated information, while the light blue bar represents willingness to share information with AI.

As shown in Table 3 and Figure 3, respondents were generally more willing to rely on AI-generated information than to share information with AI across all application domains. Among the specific domains, the highest scores were observed for recommender systems, both in terms of reliance on AI-generated information (M = 3.75, SD = 1.63) and willingness to share information (M = 3.42, SD = 1.63). A similar pattern was found for AI in general, which recorded the highest overall scores for both reliance (M = 3.79, SD = 1.58) and information sharing (M = 3.61, SD = 1.64). In contrast, healthcare, security, and human resources were associated with lower levels of both reliance and willingness to share information.

Paired-samples t-tests showed that willingness to rely on AI-generated information was significantly higher than willingness to share information with AI in the domains of security (ΔM = 0.17, t(405) = 3.48, p < .001, dz = 0.17), recommender systems (ΔM = 0.33, t(404) = 7.29, p < .001, dz = 0.36), and AI in general (ΔM = 0.20, t(406) = 4.08, p < .001, dz = 0.20). In healthcare, the difference between reliance and information sharing was not statistically significant (ΔM = 0.08, t(404) = 1.42, p = .158, dz = 0.07). In human resources, the difference was statistically significant at the .05 level but of negligible practical magnitude (ΔM = 0.11, t(406) = 2.07, p = .040, dz = 0.10). Overall, these findings suggest that domain-specific trust in AI is reflected not only in general attitudes but also in behavioral intentions related to AI use and personal data sharing.

2.4 Comparison with global patterns

To contextualize the Croatian findings, observed patterns were compared with results reported in the global study by Gillespie et al. (2023). While direct statistical comparisons are not possible due to differences in sampling and the absence of access to the original dataset, a qualitative comparison of domain rankings provides useful insights.

Table 4: **Comparison of domain-specific trust patterns: Croatia and global study**

Application domain	Croatia mean trust (7-point scale)	Croatia rank	Global study pattern	Key comparative insight
Healthcare	3.21	3	Highest-trust domain globally	Trust in healthcare AI is substantially lower in the Croatian sample than in the global study.
Security	3.91	2	Higher-trust domain globally	Security AI is relatively trusted in both datasets, with Croatia showing stronger trust than for healthcare.
Recommender systems	3.95	1	Higher-trust domain globally	Recommender systems are the most trusted domain in Croatia, whereas global findings place healthcare first.
Human resources	3.14	4	Lowest-trust domain globally	Human resources is the least trusted domain in both datasets.

Note. Croatian values are based on composite trust scores calculated as the mean of two application-specific trust items per domain on a 7-point scale. The global comparison is based on Gillespie et al. (2023), which measured trust in AI applications using an 8-item trust scale.

The Croatian pattern is partly consistent with global findings: both datasets identify human resources as the lowest-trust domain, but they differ in the highest-trust domain. However, the contrast between domains appears more pronounced in the Croatian sample, suggesting stronger differentiation in trust perceptions depending on the context of AI use.

2.5 Summary of key findings

Overall, the results demonstrate that trust in artificial intelligence is not uniform across application domains. Respondents express higher trust, greater willingness to rely on AI, and greater readiness to share information in assistive applications such as recommender systems, while trust is markedly lower in evaluative domains such as human resources. These patterns align with existing global research on trust in AI but appear more accentuated in the Croatian context.

3. DISCUSSION

The purpose of this discussion is to interpret the observed domain-specific differences in trust in artificial intelligence and to explain why these differences matter for tourism and service innovation. Rather than reiterating the results, this section situates the Croatian findings within broader research on trust in AI, tourism technology adoption, and AI-enabled service design. The discussion also considers the implications of the observed differences between trust, willingness to rely on AI outputs, and willingness to share information with AI systems.

3.1 Interpreting domain-specific trust

The results confirm that trust in AI is not uniform across applications. In the Croatian sample, recommender systems emerged as the most trusted domain, followed by security applications, while healthcare and especially human resources generated lower trust scores. This pattern supports the broader proposition that trust in AI is context-dependent and shaped by the function an AI system performs. Applications perceived as assistive and supportive appear more acceptable than those perceived as evaluative, authoritative, or consequential for individuals. In practical terms, systems that help users navigate options or make suggestions seem easier to trust than systems that classify, assess, or judge people.

This interpretation is consistent with established trust theory, which suggests that trust is influenced by perceived risk, vulnerability, control, and anticipated consequences (Mayer et al., 1995; McKnight & Chervany, 2002; McKnight et al., 2011). Assistive systems such as recommender applications typically preserve user autonomy because they provide suggestions while leaving the final decision to the user. By contrast, AI systems used in human resources are more likely to be associated with fairness concerns, reduced contestability, and possible bias in decisions that directly affect people's opportunities and outcomes. These characteristics make evaluative AI inherently more sensitive from a trust perspective.

The Croatian findings broadly align with the global results reported by Gillespie et al. (2023), which also identify human resources as the least trusted AI domain and show that trust varies meaningfully by application. However, the Croatian pattern is not identical. In the global study, healthcare AI was the highest-trust domain, whereas in the Croatian sample, recommender systems ranked first, and healthcare scored noticeably lower. This difference is substantively interesting rather than merely descriptive, because it suggests that domain-specific trust may be stable in its broad logic but still vary in its exact ordering depending on national context, perceived institutional reliability, and the sensitivity attached to different uses of AI. While the present study does not directly measure cultural determinants of AI trust, the observed differences from the global pattern may reflect the specific national context in which AI is encountered, including levels of digital exposure, institutional expectations, and prior experiences with digitally mediated services in Croatia. The Croatian findings also gain additional relevance when considered alongside the most recent global evidence. Gillespie et al. (2025) show that trust remains a central mechanism

through which broader factors such as AI literacy and institutional expectations influence AI acceptance. This is particularly important for interpreting the Croatian pattern, where respondents reported moderate subjective AI knowledge, but at the same time displayed relatively cautious trust scores and stronger concern than enthusiasm. Taken together, this suggests that familiarity with AI does not automatically translate into unconditional trust; rather, trust appears to depend on whether users perceive specific applications as understandable, controllable, and aligned with their interests.

The behavioral results add an important layer to this interpretation. Respondents were generally more willing to rely on AI-generated information than to share information with AI, and paired-samples comparisons showed that this difference was particularly visible in the domains of security, recommender systems, and AI in general. This pattern is again highly consistent with the global study, which reports that people are especially more willing to rely on, rather than share information with, recommender and security AI applications. At the same time, the Croatian data did not replicate the global healthcare reversal, where people were typically more willing to share information than rely on AI outcomes. In the Croatian sample, both reliance and sharing in healthcare remained relatively restrained. This suggests a more cautious orientation, especially when AI use intersects with sensitive personal data and high-stakes decisions. This cautious stance is also supported by the broader attitudinal profile of the Croatian respondents. Emotional responses were ambivalent rather than uniformly positive, with concern more strongly expressed than excitement, and perceived risks were generally rated higher than perceived benefits. Privacy loss, deskilling, and job displacement emerged as especially salient concerns. These results resonate with the global report's observation that people tend to associate AI with substantial risks related to privacy, harmful use, job loss, and reduced human control, and that higher risk perceptions are linked to lower trust. Taken together, the Croatian results reinforce the idea that domain-specific trust is embedded in a wider cognitive-emotional structure shaped by concern, perceived vulnerability, and uncertainty.

3.2 Implications for tourism and service innovation

Although the survey did not examine specific tourism service encounters, the findings have relevant implications for how AI adoption in tourism and service innovation may be understood. Tourism increasingly relies on AI-driven systems to personalize offers, support travel planning, curate content, and improve customer interaction across multiple digital touchpoints. In such contexts, recommender systems appear to function as a relatively "low-resistance entry point" for AI adoption. In the Croatian sample, they were associated with the highest trust levels, the strongest willingness to rely on AI outputs, and the highest readiness to share information among the domain-specific applications examined. This makes them particularly relevant for tourism-related AI applications, where recommendations for destinations, accommodation, activities, and content are central to the service experience (Bulchand-Gidumal et al., 2024; Solano-Barliza et al., 2024).

Recent tourism research strongly supports this interpretation. Studies of AI-driven smart tourism technologies show that personalization and ethical AI practices shape tourist behavior partly through trust dynamics, indicating that trust plays a mediating role between AI design features and user responses. Similarly, empirical work in hospitality and tourism services suggests that future use intentions are shaped by functional performance, as well as by enjoyment, satisfaction, and broader experience-related perceptions. In other words, successful AI adoption in tourism is unlikely to depend on accuracy alone; it also depends on whether users experience AI as helpful, understandable, and aligned with their interests (Koo et al., 2025; Huang et al., 2024). This issue becomes even more important in light of recent tourism research on responsible AI and human collaboration. Huang et al. (2026) argue that ethical considerations in tourism management increasingly depend on whether AI systems are transparently disclosed, responsibly governed, and positioned in a way that preserves meaningful human involvement. For tourism organizations, these findings suggest that trust in AI is unlikely to depend solely on technical performance. It is also shaped by whether users know when they are interacting with AI, whether they understand the logic of AI-supported recommendations, and whether the organization signals accountability in the use of such systems.

At the same time, the Croatian results caution against interpreting higher trust in recommender systems as an absence of concerns. The gap between reliance and information sharing indicates that users may be willing to accept AI-supported recommendations without being equally comfortable disclosing personal information. This is especially important in tourism, where personalization often depends on behavioral data, search history, location, and preference profiles. Recent hospitality research shows that transparency can improve user awareness but may also heighten privacy concerns unless accompanied by strong privacy assurance (Hu & Min, 2025). Related communication research further indicates that transparency signaling can strengthen trust in AI systems and relational satisfaction, but only when users perceive the signal as credible and meaningful (Park & Yoon, 2024). These insights align with the Croatian data and suggest that trusted personalization requires not only relevant recommendations but also clear communication about how data is used and protected.

The findings are also relevant in light of the rapid rise of conversational and generative AI in tourism. Research on tourists' intention to use ChatGPT for travel services shows that trust in ChatGPT positively affects satisfaction, which in turn drives continued usage intentions (Pham et al., 2024). At a broader level, recent integrative review work argues that generative AI in tourism is still in an early stage of understanding and application, meaning that questions of trust, usability, and governance remain highly open. In this context, the Croatian findings provide a useful caution: even in a digitally engaged sample, trust is selective, and behavioral readiness remains conditional. This suggests that tourism organizations should be cautious about assuming uniform customer acceptance of AI simply because AI tools are increasingly available and visible.

From a managerial perspective, the results also suggest that AI adoption in tourism should be differentiated by function. Customer-oriented assistive systems, especially recommenders and conversational support tools, may be easier to introduce because users experience them as advisory rather than controlling. More evaluative or opaque applications are likely to require stronger governance, clearer explainability, and more transparent mechanisms for building trust. This aligns with recent hospitality research showing that AI adoption involves different perceived barriers and opportunities across organizational levels, reinforcing the point that implementation is not purely technical but also managerial, relational, and ethical (Cozzio et al., 2025). While assistive AI applications may face fewer trust-related barriers, the introduction of AI in more evaluative or opaque contexts requires stronger attention to transparency, explainability, data governance, and regulatory compliance. This is particularly relevant in Europe, where the AI Act has established a harmonized framework for risk-based AI governance and reinforces the expectation that trust in AI must be supported not only by design, but also by institutional safeguards (European Union, 2024).

3.3 Limitations and future research

The findings of this study should be interpreted in light of several limitations. First, the use of a non-probability sample limits generalizability to the broader Croatian population. The sample reflects digitally engaged internet users rather than a nationally representative public, which likely elevates baseline exposure to AI and may partly explain the relatively high levels of self-reported AI familiarity. Second, the study examines general perceptions of AI applications rather than reactions in specific tourism service encounters. Accordingly, the practical implications should be interpreted as sector-relevant rather than as evidence of tourists' actual behavior in specific service encounters. Trust in recommender systems, for example, may differ depending on whether the system is embedded in a booking platform, destination app, review environment, chatbot, or generative travel assistant. Third, the study focuses on a partial replication of the global trust framework rather than a full reproduction of the original measurement design. This means that direct cross-study comparison should remain interpretive rather than inferential. At the same time, the value of the study lies precisely in showing that even under a partial replication design, domain-specific trust remains visible and substantively meaningful. The study should also be interpreted in light of the fact that new Croatian evidence on trust and acceptance in AI is only now beginning to emerge. This makes the present findings particularly useful as an early domain-specific contribution, but also underlines the need for future studies that compare different Croatian samples, sectors, and service settings more systematically. Recent national-level research indicates that trust and acceptance of AI are becoming a visible topic in Croatian society, which opens space for stronger cumulative research in the local context.

Despite these limitations, the study contributes to current debates on AI adoption by showing that domain-specific trust is not only theoretically important but also practically consequential. By demonstrating that trust, reliance, and willingness to share information vary across AI applications, the findings support a more differentiated understanding of AI adoption in tourism and other service-oriented industries. They also suggest that the future success of AI-enabled personalization will depend less on technological novelty itself and more on whether organizations can build trust in ways that are context-sensitive, transparent, and responsive to users' concerns.

Future research could extend these findings in several directions. One path would be to move from general AI domains to concrete tourism applications, such as accommodation recommenders, destination personalization tools, hospitality robots, or GenAI travel assistants. Another would be to examine how design features such as transparency, explainability, privacy assurance, or anthropomorphic communication shape trust, reliance, and sharing behavior in travel-related service settings. Longitudinal and experimental designs would be especially useful for understanding whether trust changes over time as users gain familiarity with AI systems and whether such change differs between assistive and evaluative applications. Comparative studies across countries or tourism segments would also help clarify whether the Croatian pattern reflects a broader regional tendency or a more context-specific outcome (particularly the relatively strong trust in recommender systems and more cautious stance toward healthcare AI).

CONCLUSION

This study examined domain-specific trust in artificial intelligence among internet users in Croatia and explored the implications of these differences for AI adoption in tourism and service-oriented industries. The findings provide clear evidence that trust in AI is not a uniform construct but varies substantially across application domains. Across all analyzed measures, assistive AI applications (most notably recommender systems) were associated with higher levels of trust, greater willingness to rely on AI, and increased readiness to share information. In contrast, evaluative applications, such as those used in human resources, elicited lower levels of trust. These patterns align with existing international research on trust in AI and reinforce the importance of distinguishing between different roles and functions of AI systems when assessing public acceptance. For tourism and service innovation, these findings highlight the strategic relevance of domain-specific trust. AI-driven recommender systems represent a comparatively low-resistance pathway for AI adoption, offering opportunities for personalized service delivery while maintaining user acceptance. At the same time, the results underscore the need for careful design and communication when deploying AI in more sensitive contexts where trust deficits may pose significant barriers. Although the study is limited by its non-probability sample and focus on general perceptions of AI, it contributes valuable national-level evidence to the growing body of research on trust in artificial intelligence. By situating Croatian findings within a broader global context, the study emphasizes the importance of domain-specific trust for understanding AI adoption in tourism and other service-oriented industries and provides a foundation for future sector-specific and longitudinal research.

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DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this work, the authors used Grammarly to refine the English language, improve text flow, and perform minor language corrections such as summarization. Additionally, ChatGPT 5.4 Thinking and Gemini 3.1 Pro were utilized for accuracy checks, text corrections, creating data visualizations (graphs), and assisting with the synthesis of extracted studies. After using these tools/services, the authors reviewed and edited the content as needed and take full responsibility for the final content of the publication.

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