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Cross-Cultural Variations in Trusting Generative AI: The Roles of Uncertainty Avoidance, Digital Literacy and Perceived Control

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Abstract

Trust is a key element of generative artificial intelligence acceptance and responsible use, which could be different for different cultural settings and users. This study investigates the differences between the trust placed in generative AI across cultures by exploring uncertainty avoidance and digital literacy and perceived control. To understand how these factors affect users' trust in AI-generated content among different cultural groups, a quantitative comparative analysis was conducted. The analysis took into account differences in trust and technological ability, as well as differences in toleration for ambiguity and the extent to which the user felt they could verify, modify or reject the product of the AI. Their results suggest that uncertainty avoidance is linked to a reduced level of trust; when users are less tolerant of ambiguity, they are more guarded against the unpredictable or potentially incorrect responses from AI. There is a positive correlation between digital literacy and trust as greater knowledge of technology helps people to better comprehend the system's functions and limitations. Perceived control also boosts trust by enabling people to have control over the choices they make and to think about the recommendations made by AI. The study also reveals that trust should be adjusted and not maximised as it can have negative consequences in either overreliance or underreliance. It states that a culturally responsive design, clear explanations, user control and cultivating a digital-literacy are crucial for creating informed and responsible interactions with generative AI.

Keywords: *Generative AI, Trust, Uncertainty avoidance, Digital literacy, Perceived control*

1. Introduction

The use of generative Artificial Intelligence (AI) has quickly made its way into the world of education, health, the workplace, and everyday decision making, and the question of why people trust or distrust AI systems is more important now than ever. Trust plays a key role in the acceptance of AI recommendations, dependence on AI outputs, and the ongoing utilization of AI-driven technologies. According to research, trust in AI requires focusing on perceived competence, reliability, transparency, and alignment with human expectations (Glikson & Woolley, 2020). Within the healthcare sector, clinicians' faith is influenced by the precision of the system, its interpretability, and how much AI aids in decision-making, while not taking the place of expert medical judgement (Asan et al., 2020).

Initial findings also indicate that users' experiences and their risk perceptions and knowledge of the AI technologies affect perceived trust (Bitkina et al., 2020). Trust is not a given or a neutral reaction. People perceive AI within the context of social norms, institutional contexts, and culturally-embedded beliefs about uncertainty, power, and technology. Cross-cultural studies show that there are distinct differences in reactions to AI systems due to varying norms and expectations across cultures (Barnes et al., 2024). The study also reveals significant national differences in confidence, concern, and willingness to use AI, across the globe (Gillespie et al., 2023). Attitudes towards AI could also manifest as the belief that their jobs are at risk, that they lack autonomy or control over the technology, and that AI will compromise their privacy (Kimon et al., 2021). The cross-language validation of measures of AI-attitude indicates that favourable and unfavourable perceptions are comparable across cultural settings meaningfully (Sindermann et al., 2021).

The relevance of uncertainty avoidance is especially relevant because generative AI may provide probabilistic, variable and sometimes inaccurate answers. Those who prefer to avoid uncertainty must be given greater confidence in predictability, accountability and human oversight before they can trust AI. In addition to technical performance, requirements for trust also include ethical safeguards, organizational preparedness and perceived risk control (Bedué & Fritzsche, 2022). There is a strong link between understanding and acceptance of AI, with users being more accepting when they know the reason for a system's recommendation and can analyze the reasoning behind it (Shin, 2021). The other factor that plays a crucial role in responsible trust is the communication practices which should not over-reliance or reject unjustly (Liao & Sundar, 2022). Formal models of trust also differentiate between what kind of system is trustworthy and what people believe it is and what they would want to do with their trust (Jacovi et al., 2021).

Digital literacy and AI literacy can mitigate the uncertainty by providing understanding of the capabilities, limitations, and potential mistakes of AI. AI literacy includes the ability to recognise, evaluate, communicate with and critically use intelligent systems (Long & Magerko, 2020). Conceptual development later added to this also included the emphasis on ethical awareness, practical application and critical assessment (Ng et al., 2021). The study by Laupichler et al. (2022), which is conducted in the field of adult and higher education, shows that AI literacy entails technical, cognitive and socio-ethical capacities. Digital inequality, computational thinking and cognitive engagement also affect the ability of individuals to become AI literate (Celik, 2023). Perceived control is another important determinant of trust. When users can validate outputs, customize prompts, and decline recommendations or have the final say, they may feel more confident. How people feel attached to or threatened by AI might affect their expectations for interactions with others (Gillath et al., 2021). Ethics, context and accountability, among others, are additional considerations that influence the trust in AI-based systems (Omrani et al., 2022). However, general attitudes towards AI also affect acceptance prior to experiences (Schepman & Rodway, 2020). Scientific studies increasingly show that trust has an impact on the adoption of AI.There is research that is emerging to show that trust is a factor pertaining to the adoption of AI. Students' trust is a factor that affects their intention to use ChatGPT for academic works (Rahman et al., 2023). In higher education setting, awareness and perceived credibility also have a positive effect on acceptance (Shahzad et al., 2024). As evidenced by technology acceptance studies, performance expectations, effort and social influence are all factors that lead to ChatGPT adoption (Strzelecki, 2024).

Trust can also be developed over time, as much as through lived experience in the classroom (Song, 2025). Targeted professional development (Nazaretsky et al., 2022) can boost teachers' confidence in the use of AI. For AI applications in education, patterns have been found that

usefulness and system reliability influence user trust (Qin et al., 2020). More broadly, trust is a key pathway from AI perceptions to intended use, which is confirmed by previous acceptance research (Choung et al., 2023).

The study's goal is to investigate the cross-cultural differences in the trust that people have in generative AI. It includes the impact of uncertainty avoidance, digital literacy, and perceived control for all respondents from varying national and cultural backgrounds. The goal is to quantify trust in generative AI, examine differences in trust beliefs among cultural groups, examine the impact of uncertainty avoidance, digital literacy and perceived control, and identify the factors that most strongly predict willingness to trust generative AI.

2. Methodology

2.1 Research Design

The study used a quantitative, cross-sectional, and cross-national research design to explore the differences in trust in GPTs in various cultural and socioeconomic settings. The country was the unit of analysis used since the indicators available were all percentages at country level and not percentages at individual level. This design allowed for a systematic cross-country comparison of trust, attitudes related to uncertainty, and perceived control in the digital domain. Digital literacy and perceived control were treated as the main explanatory variables, with trust in generative AI as the dependent variable, and uncertainty avoidance was an intervening variable. AI acceptance was additionally analyzed as an auxiliary outcome to evaluate if the explanatory variables impacted confidence in AI and willingness to accept use of AI. The study employed the comparative approach of an ecological one. The results were therefore seen as country level relationships, and not as individual level behaviour. There were cross-cultural and cross-economic comparisons of countries, as well, to highlight differences between cultural and developmental settings.

2.2 Data Source and Sample

A secondary data set of aggregated data at country level for 47 countries in various geographical regions and advanced and emerging economies was employed. 43 indicators were chosen for the dataset focusing on AI trust, AI acceptance, perceived AI benefits, perceived risks, perceived digital skills, AI training, effective usage of AI, organisational policy, awareness of regulations, perceived safeguards and selected national characteristics (Mind Lab, 2025). All 47 country-level observations were included in the final analytical sample since all relevant variables had complete information. Percentages are reported as percentages of people who were surveyed in each country for each attitude, experience or capability.

For the purpose of cross-cultural comparison country and regional classifications have been used, economy type and gross domestic product per capita and population have been kept as contextual variables. Trust in generative AI was assessed by calculating the percentage of respondents who reported that they trusted in AI. AI acceptance was an additional measure of favorable attitudes towards AI. Digital literacy was covered under the themes of literacy skills, AI training and effective use of AI. Since there was no direct uncertainty-avoidance score in the data, the uncertainty avoidance was operationalized through indicators such as concern about AI, perceived risks, uncertainty about online content and preference for AI regulation. Indicators for perceived control included sufficient safeguards, awareness of AI regulations, effective use of AI, organisational strategies, organisational training and organisational AI policies.

2.3 Measurement and Index Construction

Prior to analysis, all variables were checked for completeness, consistency, range and extreme values. The direction of each indicator was also examined to ensure that scores on the indicators of each construct consistently represented a higher level of the construct. The Digital Literacy Index has been built with the following components: Literacy skills, AI training and effective AI use. This was calculated as follows:

$$DLI_i = \frac{LS_i + AT_i + EU_i}{3}$$

LS_irepresents literacy skills, AT_irepresents the AI training, and EU_irepresents the effective use of AI in country i. The Uncertainty Avoidance Index was developed from uncertainty regarding online content, the belief that AI risks outweigh its benefits, concern about negative

AI outcomes and demand for AI regulation:

$$UAI_i = \frac{UC_i + RO_i + CN_i + RR_i}{4}$$

where UC_irepresents uncertainty regarding online content, RO_irepresents the perception that risks outweigh benefits, CN_irepresents concern about negative consequences and RR_irepresents support for AI regulation. This Perceived Control Index was derived from sufficient safeguards, awareness of AI regulations, effective use of AI, organisational AI strategies, organisational training and organisational AI policies:

$$PCI_i = \frac{SS_i + AR_i + EU_i + OS_i + OT_i + OP_i}{6}$$

Where SS_irepresents sufficient safeguards, AR_irepresents awareness of regulations, EU_irepresents effective AI use, OS_irepresents organisational AI strategy, OT_irepresents organisational training and OP_irepresents organisational AI policies. All scores were presented as percentages so that a composite score was created by taking the arithmetic mean of each indicator. Internal consistency of the indices created was evaluated by Cronbach's alpha and item-total correlation.

2.4 Data Analysis

This analysis was carried out in four phases. Descriptive statistics, such as means, standard deviations, minimum and maximum values were computed for trust, acceptance, digital literacy, uncertainty avoidance, and perceived control. Country-level rankings were also created to pinpoint countries that had the highest and lowest trust in AI. Second, differences within regions and between economic groups were analysed. Regional and advanced and emerging economies were compared in terms of mean trust levels. Two-group comparisons were done using independent-samples tests and regional comparisons were done using one-way analysis of variance. Non-parametric methods were employed if statistical assumptions were not met. Third, Pearson correlation analysis was conducted to explore the positive or negative direction of the relationships between the variables of trust, uncertainty avoidance, digital literacy and perceived control. A robustness check was also performed using Spearman's rank correlation due to the relatively small number of country-level observations. Last, the independent effect of uncertainty avoidance, digital literacy and perceived control on trust in generative AI were estimated using multiple linear regression analysis.

$$Trust_i = \beta_0 + \beta_1 UAI_i + \beta_2 DLI_i + \beta_3 PCI_i + \beta_4 GDP_i + \beta_5 Economy_i + \varepsilon_i$$

In the model, Trust_irepresents the national trust percentage, UAI_irepresents uncertainty avoidance, DLI_irepresents digital literacy and PCI_irepresents perceived control. Control variables included were GDP per capita and economy type. Multicollinearity was evaluated by variance inflation factors and the normality and heteroscedasticity were assessed by residual analysis. Good standard errors were used when appropriate. To assess the robustness of the results, an alternative dependent variable (AI acceptance) was also employed in an additional model. The significance at 5% level was considered.

3. Results

3.1 Descriptive Profile of Trust, Digital Literacy, Uncertainty Avoidance and Perceived Control

The analysis included 47 countries in advanced and emerging economies from nine geographical regions. A significant variation across countries in trust in generative AI and the key constructs that explain this trust was found. See Table 1, there was an average level of trust in AI of 45.83%, varying by country from 25.00% to 79.00%. A standard deviation of 12.47 percentage points shows that there is a wide range of public confidence between national contexts. Adoption of AI was significantly greater than trust (M = 72.11%). The divergence indicates that people might be willing to use or endure AI technologies even when they are not entirely confident in how it works or what it can accomplish. The mean value on the Digital Literacy Index was 49.79 and the mean value on Perceived Control Index was 47.98. The AI-related Uncertainty Avoidance Index had a mean of 62.79 and exhibited the least variation of all the constructs. Table 1 shows levels of trust, acceptance, digital literacy, uncertainty avoidance and perceived control in the 47 countries as a whole. The overall acceptance of AI was much higher at 72.11%, while trust was on average 45.83%.

Table 1. Descriptive Statistics of the Principal Study Variables

Variable	N	Mean	Standard deviation	Minimum	Maximum
Trust in AI (%)	47	45.83	12.47	25.00	79.00
Acceptance of AI (%)	47	72.11	12.52	46.00	94.00
Digital Literacy Index	47	49.79	13.06	28.67	75.00
AI-related Uncertainty Avoidance Index	47	62.79	4.60	52.50	70.50
Perceived Control Index	47	47.98	10.91	33.33	74.33

The country rankings also show that there was no uniform distribution of trust. Nigeria, at 79% is the nation with the highest level of trust, followed by India, 76%, Egypt, 71%, and China, 68%. Digital literacy and perceived control were also higher in these countries. Finland had the lowest level of trust at 25% while Japan had 28% and the Czech Republic 31% and Germany 32%. Table 2 shows that Nigeria, India, and Egypt are the countries that have the highest trust, whereas Finland, Japan, and the Czech Republic do not score the highest.

Table 2. Countries with the Highest and Lowest Trust in Generative AI

Rank	Highest-trust countries	Trust (%)	Digital literacy	Perceived control	Lowest-trust countries	Trust (%)	Digital literacy	Perceived control
1	Nigeria	79	74.00	67.17	Finland	25	32.67	33.33
2	India	76	75.00	74.33	Japan	28	28.67	37.50
3	Egypt	71	73.67	70.00	Czech Republic	31	31.00	35.00
4	China	68	69.67	69.67	Germany	32	35.33	37.17
5	United Arab Emirates	65	73.00	68.83	France	33	37.33	39.17

The rankings suggest that a higher level of trust was associated with higher digital capabilities, as well as higher levels of understanding, control, and effective use of AI systems. The findings are, however, at country level and reflect country-level relationships and do not indicate country-level behavioural patterns. There are significant regional variations in the level of trust as Africa, with a mean of 92.8, has the highest level of trust, while Oceania, with a mean of 67.5, has the lowest. With regard to trust within the area, there is a comparatively higher trust in Western Asia and Asian regions as compared to North America and Europe.Regarding trust within an area, comparatively higher trust in Western Asia and Asian areas as compared to North America and Europe.

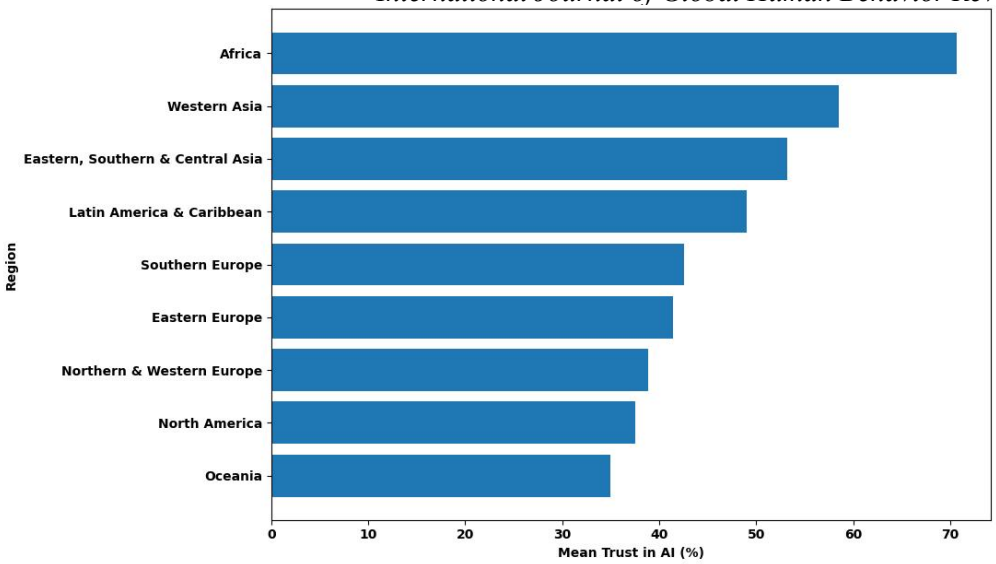

Figure 1. Regional Variation in Trust in Generative AI

3.2 Cross-Cultural and Economic Variations in Trust

There was a high level of variation among regions when it came to trust in generative AI. The highest mean trust level was recorded in Africa at 70.67% which was based on a total of three countries. Western Asia ranked second with an average trust level of 58.50%, followed by Eastern, Southern and Central Asia, with an average of 53.20%. The mean trust score for LAC was 49.00%. Average trust was lowest in Oceania (35.00%), North America (37.50%) and Northern and Western Europe (38.87%). The regions also had lower digital-literacy and perceived-control scores as well as higher uncertainty-avoidance values. The differences in trust levels were statistically significant ($F = 6.29$) ($p < .001$), indicating systematic differences in trust in broad geographical and cultural contexts. Table 3 shows regional averages of the Trust scale, the Digital Literacy scale, the Uncertainty Avoidance scale and the Perceived Control scale. The highest levels of trust and control were reported by people in Africa, with the lowest reported in Oceania and North America.

Table 3. Regional Variation in the Principal Study Constructs

Region	Countries	Trust (%)	Digital literacy	Uncertainty avoidance	Perceived control
Africa	3	70.67	70.11	55.75	65.50
Western Asia	4	58.50	62.75	58.62	59.04
Eastern, Southern and Central Asia	5	53.20	53.27	58.50	54.90
Latin America and Caribbean	6	49.00	62.78	62.92	53.19
Southern Europe	5	42.60	50.13	66.10	42.37
Eastern Europe	5	41.40	40.33	62.15	41.80
Northern and Western Europe	15	38.87	42.29	64.28	43.01
North America	2	37.50	38.50	67.62	42.50
Oceania	2	35.00	36.00	69.25	38.92

A similar polarization was also seen between the advanced and emerging economies. The average level of trust in emerging economies was 57.24% compared with 39.37% in advanced

economies. The difference of about 17.87 percentage points was statistically significant (t = -5.74) (p < .001). On the other hand, there were also some differences between the average scores of digital literacy and perceived control of emerging and advanced economies, with the former having higher scores while the latter reported higher scores on AI related uncertainty avoidance. In particular, the Digital Literacy Index averaged at 62.57 in emerging economies, and 42.54 in advanced economies. The Perceived Control Index (PCI) values were 58.40 and 42.08, respectively. In contrast, the AV index for advanced economies at 64.57 is higher than that of emerging economies at 59.65. As seen in Figure 2, emerging economies had a higher trust level, digital literacy and perceived control while advanced economies had a higher level of uncertainty avoidance.

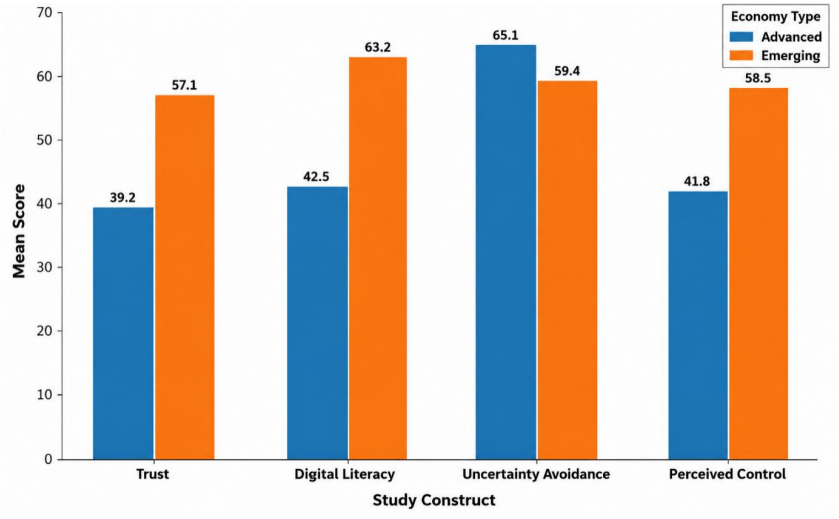

Figure 2. Comparison of Advanced and Emerging Economies

3.3 Relationships Among Trust and the Principal Explanatory Constructs

The correlation coefficient was used to test the correlation between the study variables, and it showed a strong and statistically significant correlation between the study variables. Digital literacy was significantly and positively associated with trust in generative AI (r = .874), (p < .001). Countries that reported high knowledge, training, and high capability of using AI also reported high levels of trust. The correlation between trust and perceived control was even higher, r = .901; p < .001. This was the highest bivariate correlation found during the analysis. Nations with higher levels of trust tended to have higher levels of safeguards, regulatory awareness, training, AI policies, and effective use capabilities.Nations with higher levels of trust had higher levels of safeguards, regulatory awareness, training, AI policies, and effective use capabilities. However, uncertainty avoidance related to AI had a negative relationship with trust (r = -.726), (p < .001). Countries with higher concerns about the risks of AI, uncertainty about internet content, negative expectations and higher expectations for regulation tended to have less trust. AI acceptance was also found to be positively correlated with trust (r = .811), (p < .001). The results indicate that trust is strongly positively correlated with digital literacy, perceived control and AI acceptance, and the correlation is negative with uncertainty avoidance, as presented in Table 4.

Table 4. Pearson Correlations Among the Principal Study Variables

Variable	1	2	3	4	5
1. Trust in AI	1.000				
2. Acceptance of AI	.811***	1.000			
3. Digital Literacy Index	.874***	.872***	1.000		
4. Uncertainty Avoidance Index	−.726***	−.801***	−.694***	1.000	
5. Perceived Control Index	.901***	.775***	.896***	−.729***	1.000

Note: *** (p < .001).

The high correlation between digital literacy and perceived control (r = .896) indicates that countries with higher levels of digital literacy also had higher levels of organisational and regulatory mechanisms related to AI. This linkage suggests the conceptual link between capability and control, but also suggests that care must be taken when interpreting the independent effects of capability and control in multivariate models. As shown in Figure 3, digital literacy is positively associated with trust, with countries with higher digital literacy skills and effective-use rating having higher trust levels.

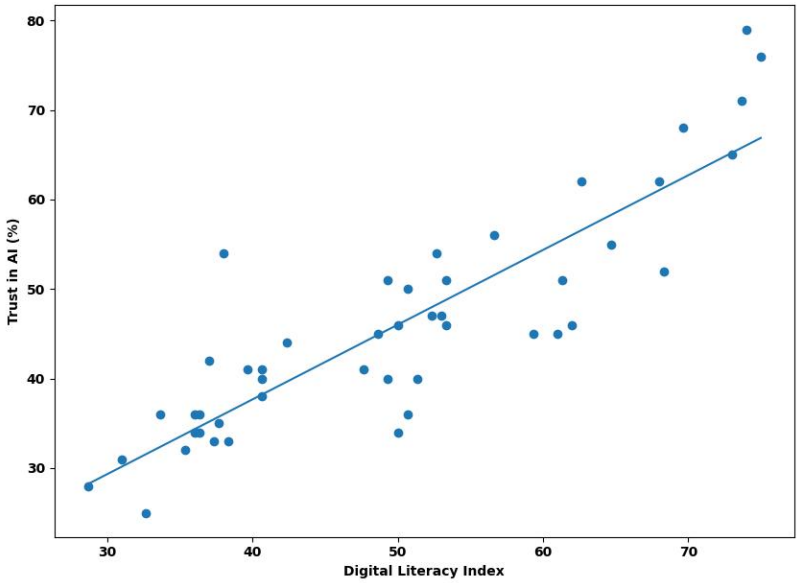

Figure 3. Digital Literacy and Trust in Generative AI

3.4 Predictors of Trust in Generative AI

To investigate the simultaneous effect of uncertainty avoidance, digital literacy and perceived control on trust, a multiple linear regression model was estimated. The model was statistically significant and accounted for 84.1% of the variance in trust across the cross (R^2 = .841, adjusted R^2 = .830, p < .001). Perceived control was the most powerful independent variable for trust. The increase in the Perceived Control Index was significantly correlated with the increase in trust (B = 6.66) (p < .001) with a reasonable effect size. This result indicates that the availability of safeguards, policies, training, regulatory awareness and organisational strategies was particularly important in explaining differences in trust. Digital literacy also had a positive significant impact. The effect of a one standard deviation increase in digital literacy on the increase in trust was also significant (B = 3.89, p = .028). This meant that after controlling for uncertainty avoidance and perceived control, countries with higher AI skills, training, and effective use capability had higher levels of trust. The other constructs included the coefficient for uncertainty avoidance was negative but not statistically significant (B = -1.49), (p = .169). It had a high bivariate relation with trust, which seemed to have some overlap with digital literacy and perceived control. This indicates that uncertainty issues may undermine trust more heavily when countries are a lack of AI management capacities and institutional framework. If economic controls were added, perceived control was still an independent significant factor (B = 7.37), (p = .001), but digital literacy and uncertainty avoidance were no longer independent significant factors. The controlled model accounted for 85.4% of the variance in trust. The results did not show any statistically significant differences for GDP per capita or economy classification when the three main constructs of explanation were used. The confidence in generative AI is positively associated with perceived control, as presented in Figure 4, indicating that the safeguards, awareness of regulation, training and organisational policies significantly boost confidence in generative AI.

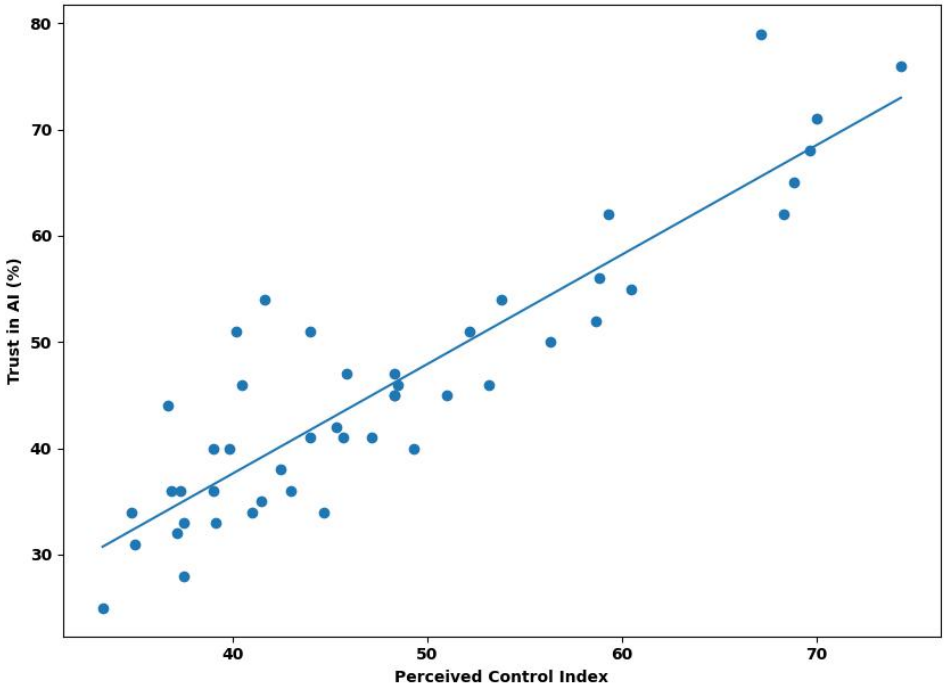

Figure 4. Perceived Control and Trust in Generative AI

3.5 Summary of the Main Results

The findings indicate significant inter-cultural differences in the trust in generative artificial intelligence. There were comparatively high levels of trust in Africa, Western Asia and part of Asia, while levels of trust were lower in Oceania, North America and Northern and Western Europe. The level of trust was significantly higher among emerging economies than among advanced economies, as was digital literacy and perceived control, whereas AI-related uncertainty avoidance was higher among the advanced economies. All three relationships were confirmed at the bivariate level using the correlation results. Digital literacy and perceived control were positively related to trust, and uncertainty avoidance was negatively related to trust. The regression results, however, demonstrated that the factor which appeared to be the most stable and independent predictor was the perceived control. Digital literacy was also positively present in the very first model, while the independent effect of uncertainty avoidance was reduced when the overlapping effect of digital capability was included in the model. In conclusion, the results indicate that cultural concern and technological uncertainty are not solely responsible for the level of trust in generative AI. Trust is especially high where populations have the skills needed to leverage and use AI and individuals and organisations feel they have enough safeguards, policies, training and governance in place to keep control over AI-supported activities.

4. Discussion

The results show significant cultural differences in trust of generative AI and that factors such as uncertainty avoidance and digital literacy and perceived control influence it. This confirms that trust is not solely a technical matter but also social expectations, previous experience, and perceived vulnerability of users (Glikson & Woolley, 2020). The importance of cross-cultural difference is particularly noteworthy, as people perceive the reliability, autonomy and risk of AI use within a culturally embedded way of values (Barnes et al., 2024). The data shows that there is some variation in the level of confidence in AI across countries, similar to the global findings that confidence in AI varies widely between societies (Gillespie et al., 2023). There was a negative correlation between uncertainty avoidance and trust, indicating that those who were less tolerant of ambiguity were more skeptical of the use of generative AI. This is a natural outcome since output from generative systems can be inconsistent, unverifiable or incorrect.

Those who are more concerned about risks are going to require more robust signposting of

reliability and accountability before they accept information provided by AI (Bedué & Fritzsche, 2022). People who are avoidant of uncertainty might further have reduced trust due to perceived threats involving privacy, employment and lack of human authority (Kimon et al., 2021). The concerns indicate that confidence hinges on the visibility, manageability, and effective communication of AI uncertainty. There is a positive correlation between digital literacy and trust, indicating that as the technological skills of the user increase, the evaluation of outputs from the AI can be done with less fear or unrealistic expectations. AI literacy enables individuals to grasp how artificial intelligence systems function, what they are capable of and where they can fail (Long & Magerko, 2020).

Additionally, the logical thinking of the critical understanding helps users differentiate between using and taking things on faith (Ng et al., 2021). The results thus corroborate the need to teach skills that are integrated with ethical and evaluative capacities (Laupichler et al., 2022). Differences in access to technology and in the nature of computational thinking, however, can lead to unequal opportunities for literacy learning and contribute to the perpetuation of larger digital divides (Celik, 2023). Perceived control proved to be a significant and positive predictor of trust. The more respondents could confirm, correct or reject the output of generative AI, the more willing they were to trust its output.

This correlates with empirical results which show that explainability enhances perceived causability, confidence and acceptance (Shin, 2021). User control can also help to foster responsible trust, as people feel more empowered to engage with AI and feel that decisions are not imposed upon them by an out-of-reach system (Liao & Sundar, 2022). Therefore, trust should be built around the meaningful oversight and not automation. The findings also indicate that trust needs to be adjusted and not enhanced. Users' trust may be misplaced such that they may take as their output what is not accurate, or trust may be weak enough that they are unable to achieve the benefits of a helpful system. To achieve trustworthy adoption, there must be a match between what the system can do and user expectations (Jacovi et al., 2021). So, ethical issues and accountability, as well as the context-specific risks, should be first discussed and resolved before considering the wider use (Omrani et al., 2022). However, attitudes towards AI in general can also influence initial trust even before users have first-hand experience of its performance (Schepman & Rodway, 2020). The results support prior studies in education that indicate trust has a significant impact on the acceptance of ChatGPT and similar systems (Rahman et al., 2023). Awareness and perceived usefulness can motivate adoption, however, confidence is still a key factor for ongoing utilization (Shahzad et al., 2024). Other factors, such as performance expectations and the perceived effort needed to interact with the AI tools, also influence the level of acceptance (Strzelecki, 2024). Trust can be built, or lost, over time depending on the frequency of accurate useful, or misleading outputs (Song, 2025). This is a reminder of the need for repeated exposure, not just a single dose. Professional development can enhance trust by educating users on the advantages and disadvantages. Research with teachers indicates that systematic teacher training can help increase their informed confidence in AI-supported tools (Nazaretsky et al., 2022).

The same relations found in educational systems suggest that reliability and usefulness of the system and system quality have an impact on trust formation (Qin et al., 2020). Furthermore, trust in the acoustic system is considered a key enabler that transforms positive perceptions to acceptance intentions (Choung et al., 2023).

The overall results indicate that AI design, if it is to be culturally responsive, is required. System structures should be well explained, have controls for the user, limitations as well as opportunities for human review. Neither one trust-building policy should be assumed to be equally effective in societies as a whole, nor should one society's best practices simply be exported to another. Programmes to develop digital-literacy, good governance and cultural sensitivity can support users to build a well-informed trust in generative AI and to maintain critical thinking and personal agency.

5. Conclusion

The present study investigated cross-cultural differences in trust of generative AI algorithms using digital literacy and perceived control as moderating factors in conjunction with uncertainty avoidance. The results revealed that users' trust in generative AI goes beyond just its performance capabilities. It also reflects cultural values, the ability to comprehend AI, and users' willingness to accept uncertainty and their sense of control while interacting with AI. The

study also revealed that those high in uncertainty avoidance had less trust, suggesting that people who are more risk averse may be more skeptical of the trustworthiness of information generated by AI. Conversely, digital literacy was seen as having a positive relationship with trust as users who were knowledgeable were more able to interpret the capacities of the system and limitations of it and were able to critically assess the products. The sense of control also came into play, with the users feeling more comfortable trusting generative AI if their recommendations could be verified, changed or rejected. The results also show that one should not just increase trust, but rather modulate it. Overtrust can result in overreliance on faulty results, and undertrust can lead to users not taking advantage of helpful applications. Institutions and developers therefore need to encourage clear explanations, clearly visible constraints, human oversight and meaningful control by the user. Culturally responsive design is also critical because different users from diverse cultures may not react the same to the same trust-building features. Digital-literacy programmes, ethical governance, clear accountability and opportunities for human review can help to enable more informed and responsible adoption. In general, once users can grasp the technology, believe they have the ability to assess the results generated by generative AI and can still make their own final choices, it is more likely to be adopted and sustained.

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