The Influence of Education and Self-Perceived Tech Savviness on AI Reliance: The Role of Trust *

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***Abstract*—The increasing pervasiveness of Artificial Intelligence (AI) within our daily lives necessitates a deeper understanding of how trust shapes our evolving relationship with technology. This mixed-methods study investigates how educational level, self-perceived 'tech-savviness', and emotional responses to tech absence, influences individual reliance on, and trust in, AI. Quantitative analysis reveals that individuals who have been in educational institutions for longer periods (e.g. obtained Master degrees) demonstrate greater trust in AI, leading to stronger reliance, particularly for recommendations scores. Qualitative analysis uncovers a complex interplay between trust, convenience, task-specific trust, and concerns about autonomy. A striking finding is the prevalence of negative emotions, including a sense of "incompleteness," during tech absence, especially among the tech-savvy group. This highlights how reliance can extend beyond functional utility and become psychologically intertwined with trust, potentially impacting self-perception. These findings challenge traditional models of technology adoption and emphasize the need for frameworks that consider the psychological dimensions of trust in understanding AI reliance. The interplay between education, trust-based reliance, and psychological factors will be crucial for individual adaptability and resilience in an increasingly AI-driven world.**

Keywords— AI Reliance, Trust, Emotional Responses, Psychological Needs, Adaptability

I. INTRODUCTION

The omnipresence of technology in our daily lives is undeniable, shaping how we interact, learn, and even perceive ourselves. Artificial Intelligence (AI), in particular Generative AI, is rapidly transforming various aspects of our lives, offering innovative solutions for task automation, decision support, and tailored recommendations in music, film and even fashion. However, for widespread integration and long-term reliance on AI, we must consider factors beyond technical capabilities; understanding how trust shapes individual adoption patterns is crucial for ensuring equitable access and promoting a healthy relationship with technology.

As the higher education often involves exposure to emerging technologies [25] and scientific advancements, along with an emphasis on critical thinking skills [26], individuals with higher levels of education may be more receptive to AI's potential benefits, demonstrating greater trust in the technology and a willingness to experiment [1]. Yet, a disconnect can exist between formal education and self-perceived tech savviness [2,3]. Informal learning through personal projects, self-exploration, and workplace exposure significantly enhances technical skills [4, 5]. It's essential to consider both formal and informal pathways when investigating how perceived skill and comfort levels influence trust and subsequent AI adoption.

While research on technology dependence often focuses on usage patterns and addiction models [6], we need a nuanced understanding of the emotional and psychological dimensions of our relationship with technology. Emerging evidence suggests that, for some, reliance on AI might extend beyond simple task completion to fulfilling deeper needs, impacting their trust in their own abilities and potentially their sense of self and well-being. In the current study, some users described feeling 'incomplete' without their devices or AI tools, highlighting a reliance with complex implications.

This paper proposes that by understanding trust through nuanced factors such as tech-savviness can inform inclusive technology design, educational interventions for healthy AI relationships, and illuminate the psychological implications of an increasingly technology-enabled world. The current study further examines the 'Incomplete without tech' phenomenon [7], alongside the level of education and tech savviness on AI reliance. A mixed-methods approach has been employed, combining quantitative analysis alongside the exploration of qualitative narratives. Survey data measures the degree of AI reliance in relation to education level, tech savviness, and the adoption of AI features across various domains. Additionally, open-ended responses provide participants' subjective experiences of technology absence, providing insights into emotional responses and the potential impact on the relationship with technology.

The current study reveals how self-reported tech-savviness significantly influenced reliance on AI engagement, highlighting the importance of users understanding and trust of potential AI systems. Interestingly, the feeling of 'incompleteness' during tech absence emerged across all tech-savviness levels. This suggests that AI may become integrated with our sense of self-efficacy, potentially influencing how readily we trust our own abilities without the support of AI. These insights can inform the development of inclusive AI interfaces that foster trust and build user confidence. Tailored educational interventions can help bridge knowledge gaps and ensure equitable access to the benefits of AI for users of all backgrounds. Ultimately, by understanding the psychological drivers of AI reliance, this study seeks to provide a framework for building trust and promoting healthy technology interaction. This understanding is vital for encouraging user adaptability and promoting individual well-being in an increasingly AI-driven landscape.

II. BACKGROUND

The profound influence of technology on modern life is undeniable, with Artificial Intelligence (AI) rapidly transforming how we interact, learn, and make decisions. While AI offers efficiency and personalisation [8], understanding the psychological dimensions of this evolving relationship, including the element of trust, is crucial. Historically, technology dependence has been investigated using addiction models [6]; however, this approach may not fully address the nuanced ways we rely on and place trust in technology. One emerging phenomenon, the feeling of being 'incomplete' in technology's absence [7], hints at a reliance that extends beyond functional utility. This potentially impacts our ability to trust our own capabilities, impacting our sense of self and psychological well-being. By examining how trust shapes our interaction with AI, we can better understand the potential for both beneficial and potentially detrimental effects on our self-reliance and overall well-being.

This concept draws on insights from Object Relations Theory (ORT) [9] and Maslow's hierarchy of needs [10]. As ORT suggests, humans may rely on "transitional objects" for comfort and security. In a technology-driven world, devices and AI functionalities might act in a similar capacity. Maslow's framework illuminates how technology could play a role in fulfilling needs from belonging to self-actualisation [11]. Research exploring the 'Alone Together' phenomenon [12] and social media's impact on self-esteem [13] further underscores this complex interplay between technology and psychological well-being. AI's increasing integration into our everyday lives complicates our understanding of technology dependence. Algorithms personalise content, predict needs [14], and subtly shape behaviours, raising questions about how trust in AI-generated output develops over time. Habit formation theories [15] highlight how AI systems leverage repetition, rewards, and environmental cues, potentially reinforcing reliance and intensifying feelings of incompleteness during technology absence. While the Technology Acceptance Model (TAM) [16] offers valuable insights into perceived usefulness and ease of use as adoption drivers, it doesn't explicitly address the emotional aspects of the user-technology relationship, particularly the role of trust.

How people educate about the use of AI is a key factor influencing how individuals approach and interact with AI. It shapes technical skills, critical thinking [17], openness to novel technologies [18, 19], and potentially even the initial trust placed in AI outputs. Education level can affect perceptions of AI's potential benefits and risks, impacting initial acceptance [20]. Moreover, education, alongside informal learning experiences, likely contributes to how individuals integrate AI into daily routines and form habits around its use [17, 21]. TAM-based models suggest that individuals with higher educational experience levels may perceive AI tools as more useful and easier to navigate [22]. Simultaneously, habit formation theories highlight the role of reinforcement and cues in solidifying AI usage patterns [23,24], suggesting that education level may further impact how deeply ingrained these habits become.

We hypothesize that higher education and self-reported tech savviness positively correlate with greater AI reliance and enhanced trust. Education builds the technical skills, critical thinking, and openness needed for effective AI adoption and trust. Similarly, tech savviness indicates familiarity and confidence, potentially leading to deeper integration and greater trust in AI's capabilities. We anticipate that the intensity of emotional responses to tech absence will reveal both reliance levels and the degree of trust placed in AI. Feeling incomplete' may signify a deep dependence and high trust, while negative emotions could signal eroded trust in one's own abilities due to over-reliance. We further propose that relying on AI for psychological needs like belonging or self-actualisation can lead to vulnerability when technology is inaccessible. This highlights the risks of misplaced trust hindering resilience and individual development.

Findings from this study have several key implications centred around trust. Firstly, by investigating how education and tech savviness shape AI reliance alongside trust, we can inform the design of inclusive technologies and educational interventions tailored to diverse backgrounds. This promotes equitable access to AI's benefits by helping users build trust in its capabilities. Secondly, a deeper understanding of the psychological dimensions of AI reliance can help identify potential risks associated with misplaced trust or over-reliance. This understanding can guide the development of strategies fostering resilience and well-being in those who may experience significant distress when unable to access technologies where they've placed a high degree of trust. Ultimately, this research aims to illuminate the complex and evolving relationship between humans and AI, with a focus on trust. It contributes to the responsible use of technology, promotes well-being, supports adaptability, and fosters a nuanced understanding of self in a rapidly changing world.

III. METHODOLOGY

Participants were recruited through online platforms and personal networks. Advertisements emphasised the study's focus on everyday AI experiences, and inclusion criteria targeted individuals who regularly interact with AI-powered technology. A total of 65 participants were selected, ensuring a diverse range of educational backgrounds and technical expertise. A comprehensive online questionnaire gathered both quantitative and qualitative data. The questionnaire had multiple sections:

- **Demographics:** Participants provided information about their age, gender, ethnicity, education level, and geographic location to investigate potential relationships between demographic variables and reliance on AI features.
- **Tech Savviness and Usage Habits:** Likert-scale questions (1-7, strongly disagree to strongly agree) assessed self-reported comfort and proficiency with technology (and in particular AI technologies). Participants indicated their confidence in navigating new software, willingness to experiment with devices, and ability to troubleshoot technological issues. Additionally, they provided information on the daily hours of AI technology use, the number and types of devices they owned, and their years of experience with technology. This data offers insights into the interplay

between self-perception of tech savviness and actual usage patterns, exploring potential discrepancies between self-assessment and formal education.

- **AI Feature Use and Reliance:** Specific sections explored reliance on AI-driven features, including:
    - **Prediction:** AI features that anticipate needs, such as autocomplete, personalized feeds, and suggested products.
    - **Assistance:** AI assistants (e.g., Siri, Alexa) used for tasks such as smart home control, reminders, information retrieval, or message composition.
    - **Recommendations:** AI-driven recommendations for products, movies, music, or other content across various platforms or streaming services.

Quantitative data gathered through Likert-scale questionnaires will be analysed using statistical methods such as descriptive statistics, correlations, ANOVA, and T-tests. A core focus of the questionnaire will be the assessment of participant trust in AI across various functionalities (e.g., recommendations, predictions, assistants). This provides insight into how trust varies based on the type of AI technology. Analysis is then made on the relationship between trust, education level, self-reported tech savviness, and AI reliance. By measuring reliance across different AI features, it can be investigated if certain functionalities are more heavily used by those with higher education or more confidence in their technological abilities. Finally, the questionnaire includes questions gauging emotional responses to technology absence.

The study employs a mixed-methods approach to gain a deep understanding of AI reliance and the role of trust. Qualitative data, gathered through open-ended questions, provides insight into participants' individual experiences and motivations. Thematic analysis used to identify recurring themes, patterns, and contradictions, focusing on how they express trust and mistrust in AI. Narratives around AI reliability, accuracy, and the factors influencing trust are examined. The 'Incomplete without tech' phenomenon will be closely scrutinised to understand its emotional impact, how participants view AI's role in their lives, and potential changes in self-perception due to AI reliance.

Additionally, we investigate potential discrepancies between self-reported tech-savviness and actual use of different AI features. This analysis aims to determine if 'tech-savvy' individuals utilise AI more diversely, have different thresholds for trust, and express different overall attitudes towards AI. Quantitative data complement these insights, highlighting statistical relationships between education, tech-savviness, AI use, and indicators of trust. Integrating both qualitative and quantitative results will provide a holistic picture of how these complex factors influence the adoption of AI technologies.

IV. Results Analysis & Discussions

Three open-ended questions were included in the study to further investigate trust, adaptability, and the psychological dimensions of AI reliance. The first question was, "*What specific factors influence your decision to rely on or avoid AI technology in different situations*?" This question probes the conscious and unconscious factors shaping trust. Do users prioritise convenience, accuracy, time-savings, or other aspects when deciding to use AI tools? To understand any type-Specific Trust, a second question was *"Are there any specific types of AI technology you find more reliable than others? Why or not?"* This reveals how trust varies across different AI functionalities (recommendations vs. assistants, etc.). It highlights areas where users may have developed stronger or weaker trust in AI's capabilities.

To understand a users emotional levels, the third question was "*Briefly describe any specific feelings or behaviors you experience when you are unable to access your technology."* This explores the emotional landscape of tech absence. Responses like "frustration" vs. "incompleteness" signal different levels of reliance and the potential for AI's integration into the user's self-concept. These questions, alongside the Likert-scale questionnaire, provide a multi-faceted view of AI reliance by combining quantitative measures with qualitative, nuanced explorations of individual experience, specifically tailored to examine trust dynamics in the context of this study.

Firstly, a significant mismatch exists between an individual's formal education and their perception of technological capability (Table 1). This highlights the influence of informal learning experiences, often overlooked in traditional educational settings. Project-based learning, personal hobbies, or workplace exposure can strongly shape an individual's confidence and competence in navigating AI-driven tools. Furthermore, overconfidence bias may skew a person's self-evaluation of their tech skills. This disconnect has implications, reminding us that inclusive AI design cannot assume skill levels based solely on formal credentials. Instead, design should prioritise fostering trust by ensuring learnability and providing clear information about AI capabilities and limitations.

TABLE 1: Thematic qualitative analysis of the 1st open-ended question

Theme	Explanation	Example	Relevance
Convenience & Efficiency	AI's ability to save time and simplify tasks redefines the perception of 'needs.'	finding answers faster, helps saving time, easy	Supports the hypothesis: AI-convenience may hinder adaptability in a less tech-integrated environment.
Trust, Accuracy, & Reliability	Trust in AI's output and concerns about misinformation influence reliance decisions.	fast and accurate, depends on how reliable, avoid when replicating artwork	Highlights the potential fragility of reliance – how would adaptability be impacted if trusted AI tools malfunction or become unavailable?
Personal Control & Autonomy	A desire to maintain agency, avoid over-dependence, and make independent choices.	perform certain tasks myself, should be able to function without them, not become too dependent	Directly challenges the 'living under a rock' concept; those valuing autonomy may struggle more with adaptation.

Ethical & Societal Concerns	Privacy violations, potential biases, and misuse of AI lead to avoidance in specific domains.	avoid...mimic people's voices, privacy concern, job displacement	Suggests limitations to adaptability if societal shifts or ethical concerns restrict AI access in the future.
Task-Specific Suitability	AI is favoured for simple, factual needs; high-stakes decisions often warrant human input.	research, mundane tasks vs. medical emergencies, creative ideas	Shows nuanced reliance, not blind adoption. Can this decision-making skill be leveraged for adaptability?

Secondly, formal education level directly correlates with greater overall reliance on AI (Table 2, Figure 1). This trend is most pronounced in those with Master's degree level education, who display a significantly higher utilisation of AI features across various domains. Their educational experience likely fostered both the foundational tech skills and a critical thinking mindset needed to understand and adapt to emerging AI applications. This can lead to a greater sense of trust in the reliability and usefulness of AI outputs, influencing reliance patterns. This supports our hypothesis and aligns with TAM models [16], where perceived usefulness and ease of use are influenced by knowledge and prior experience. Master's level study, with its focus on research and cutting-edge technologies, may provide a particularly strong foundation for trust-based adoption of AI.

Thematic analysis of the open-ended responses (depicted in the table 1 & 2) sheds light on the complex interplay between trust and the human-AI relationship. While some participants highlight the convenience and efficiency benefits of AI, concerns regarding accuracy and misinformation emerge as key trust factors. This aligns with our quantitative findings, suggesting a potential link between education and trust – those with a stronger educational background might be better equipped to assess these aspects and build trust in AI outputs.

Furthermore, the desire to maintain personal control and autonomy (see Table 1) over tasks indicates a potential tension between trust and reliance. This raises interesting questions about the user experience of AI and the importance of transparency in AI decision-making processes. Trust can be eroded if users feel their control is diminishing or if they lack understanding of how AI arrives at its outputs. Thematic analysis also reveals ethical considerations related to privacy, potential bias in AI algorithms, and job displacement. These results influence trust perceptions. Users are more likely to trust AI if they believe their personal data is secure and that AI systems are free from bias. Understanding these concerns is crucial for developing trustworthy AI systems and fostering responsible user interactions.

TABLE 2: Thematic qualitative analysis of the 2nd open-ended question

Code Category	Responses	Key Themes
AI Experience Level: Novice	Low	Reasons for non-use
AI Experience Level: Selective	High	Emphasis on specific tasks, scepticism exists alongside use
AI Experience Level: High-Reliance	High	Potential for overconfidence in certain AI tools
Trust Fluctuation: Task-Specific	Very high	Weather apps, navigation vs. creative tasks
Trust Fluctuation: Generally Sceptical	High	Existential concerns, lack of transparency
Trust Fluctuation: Unquestioning	Low	May be linked to tech-savviness
Tool vs. Threat: Tool Mindset	Low	Focus on augmentation
Tool vs. Threat: Substitution Concern	Medium	Skill erosion, loss of originality
Lure of Convenience: Convenience	High	Entertainment, ease-of-use
Lure of Convenience: Utility	Medium	Problem-solving, efficiency

The findings support our hypothesis (presented in the Background section) for education level. Table 2 demonstrates a progressive increase in reliance on specific AI functionalities (prediction, recommendation, and assistant) as education level rises (College to Bachelor's to Master's degrees). This suggests that formal education equips individuals with the technical skills and critical thinking necessary to understand and trust AI features, leading to greater reliance across various functionalities. Individuals with higher education may be more comfortable with the underlying technology and have a better understanding of how AI arrives at its outputs, potentially leading to higher trust.

The impact of self-reported tech savviness is more nuanced. While influencing the use of specific AI features, it has a weaker overall effect on reliance (Figure 2). Those who consider themselves ‘Tech Savvy’ do demonstrate heavier reliance on AI recommendations. This aligns with our hypothesis, suggesting a connection between perceived technical competence and trust in algorithmic predictions and personalised content. Individuals who feel confident in their technical abilities may be more receptive to AI-curated suggestions, trusting the algorithms to deliver valuable recommendations (aligning with Maslow's hierarchy of needs [10] by fulfilling needs for efficiency and potentially even a sense of accomplishment).

However, tech savviness fails to significantly predict reliance on AI assistants or broader AI technology use (Table 3). This suggests psychological factors beyond technical skill are at play, potentially including anxieties about human-like AI interfaces [24] or a lack of established mental models for interacting with such tools. Habit formation may also be a factor – positive reinforcement is needed to create habitual patterns, and this may be harder for assistant-style AI regardless of tech confidence.

TABLE 3: ANOVA result on formal education level and overall reliance

Score	Sum of Squares	df	Mean Squares	F	Sig.
Between Groups	4169.157	3	1389.719	4.422	0.008
Within Groups	1539.711	49	314.239		
Total	19566.808	52			

The ‘incomplete without tech’ phenomenon [7] highlights a complex relationship between trust and reliance. Although higher education levels correlate with greater reliance on AI (Table 3), this association doesn't guarantee a smooth adaptation process. Individuals with high education levels can still report negative emotions like frustration, anxiety, and even feeling incomplete without their devices. These intense reactions challenge our initial hypothesis, suggesting a potential over-reliance that cuts across formal education and self-perceived ability. The emotional dependence on technology highlights a potential blurring of boundaries between AI as a tool and an extension of the self, possibly fulfilling deeper needs like belonging or competence (beyond just utility).

When these AI-supported constructs are unavailable, the resulting negative emotions point to a reliance that may extend beyond a trust in the technical functionality of AI. This aligns with Object Relations Theory (ORT) [9] which suggests the potential for a form of separation anxiety in the absence of a transitional object (Figure 3). The qualitative data (Table 1) further illuminates this tension. Statements like "It saves so much time, but I do worry I'm losing my own skills" exemplify the concern that AI reliance might erode personal agency, potentially impacting trust in one's own abilities. Figure 3 provides insight, challenging our initial hypothesis: a significant portion (75%) of ‘Tech Savvy’ individuals reported negative emotions (frustration, anxiety, feeling "incomplete") during tech absence. Quotes such as "I felt cut off from the world" reinforce the emotional intensity of this phenomenon. This suggests AI tools may be fulfilling needs beyond mere utility, potentially impacting one's trust in their own abilities and influencing self-perception. This aligns with Maslow's hierarchy of needs (10) and Object Relations Theory (ORT) (9).

AI could be addressing not only esteem and self-actualisation needs by assisting with tasks and fostering accomplishment, but also belonging needs by providing a sense of connection and information access. However, this reliance and over-trust in AI might lead to erosion of confidence in one's own abilities.

Table 4 highlights the variability in adaptability even among the self-proclaimed ‘Tech Savvy group. Some individual’s express calmness and resilience in tech absence, suggesting personality traits and specific AI uses might influence responses alongside technical skills. This underscores the need for personalised approaches to promote healthy AI interaction habits and emotional well-being in an ever-evolving technological landscape.

TABLE 4: Thematic qualitative analysis of the 3rd open-ended question

Tech savvy?	Common Responses (Illustrative, Not Exhaustive)	Key Observations
Yes	"Frustration", "Anxious", "Incomplete", "Restless"... (Many express strong reliance)	Even 'savvy' individuals can experience over-reliance on AI and struggle when it's unavailable. This suggests a deep trust that, when broken, impacts emotional well-being.
Yes	"Boredom", "Mild Annoyance"... (Some show low-intensity impact)	Tech savviness doesn't guarantee uniform emotional reliance. Trust might exist on a spectrum, impacting how strongly AI absence is felt.
Yes	"Just wait...", "Disturbed" (Outliers showing unexpected negativity)	These defy assumptions! Why do some tech-savvy people with presumed high trust feel so lost without AI? Potential misalignment between self-perception and actual skills?
No	"Frustrated", "Anxious," "Helpless" ... (Emotional impact can be strong)	Lack of trust in AI capabilities, or one's own skills without AI, may lead to heightened emotional responses during tech absence.
No	"Not a big deal...", "I can easily switch..." (Signs of healthy adaptability)	These are the adaptive outliers! Understanding their strategies reveals possibilities for building trust without over-reliance.
Not Sure	Varied range of emotions, some negative, some neutral	Uncertainty about tech-savviness itself reveals the mismatch of perception and skill. This impacts trust and reliance in unpredictable ways.
Not Sure	"Can solve it myself..." (Potential for self-reliance even with uncertainty)	These responses highlight resilience. Exploring trust in own problem-solving skills could offer strategies for others.

These findings also suggest that education levels have significant impact in shaping trust and reliance patterns. Master's degree holders (Figure 1) exhibited higher reliance on AI recommendations compared to other groups. Quotes like "I trust the suggestions for new articles because they often align with my research interests" (Participant with Master's degree) highlight this targeted trust. Their educational experiences may have fostered the critical thinking skills necessary to evaluate the relevance of AI-powered recommendations. Exposure to research methodologies and the ability to discern the value of information could influence trust in AI-generated outputs.

The impact of self-reported tech savviness is more selective. Figure 2 showcases a significant influence on AI recommendations ($p = 0.012$). Individuals who perceive themselves as ‘Tech Savvy’ demonstrate greater reliance on recommendation features, potentially reflecting a higher trust in algorithms to deliver relevant content. This aligns with the qualitative data (Table 1), where ‘Tech Savvy’ participants expressed comfort with algorithmic suggestions, likely due to a greater familiarity with underlying technologies. However, tech savviness has a weaker impact on other functionalities like assistants and overall reliance. This suggests that factors beyond technical skill – potentially including psychological comfort levels or anxieties surrounding human-computer interaction – influence how individuals adopt and trust AI assistants. Qualitative data (Table 1) reinforces this, highlighting potential anxieties that could hinder adoption even among the ‘Tech Savvy’ group. This highlights the importance of user-centred design principles that address user anxieties and create intuitive interfaces accommodating diverse comfort levels.

These findings have significant implications for AI design, education, and future research. The ‘Incomplete without tech’ phenomenon highlights the potential for over-reliance and the need to consider how AI shapes self-identity. Longitudinal studies tracking the interplay between AI reliance, trust, and user behaviour over longer periods are crucial. Educationally, we must foster both technical skills and critical thinking about AI,

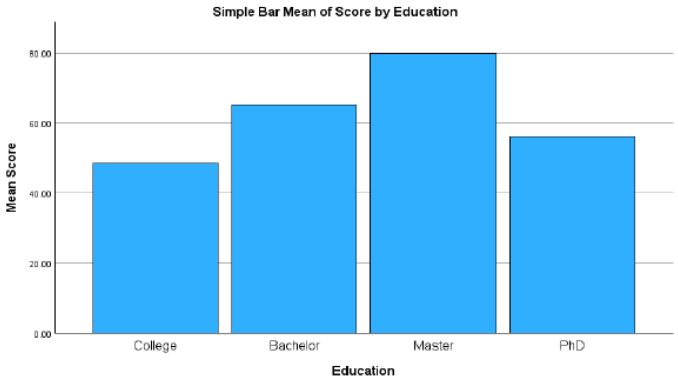

Figure 1: Mean scores of reliance based on education levels.

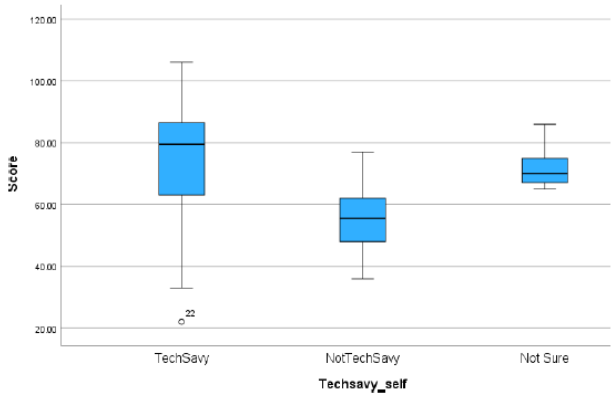

Figure 2: Boxplot showing scores of self-assed techs-savviness.

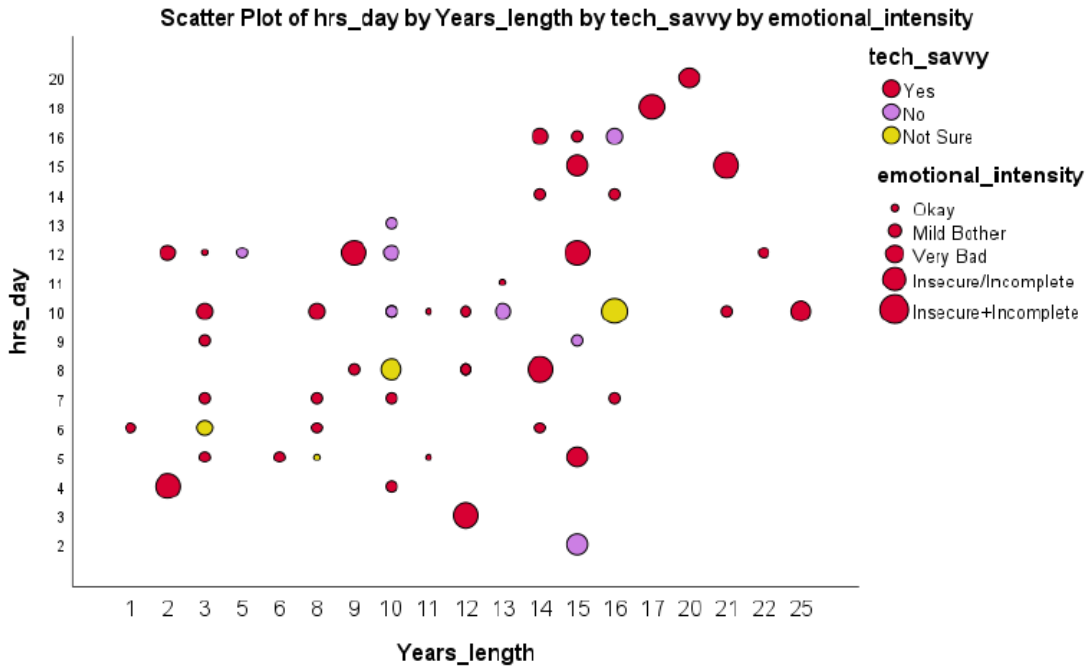

Figure 3: How the emotional intensity is related to the tech using times daily and tech using time in years, and self-reported tech-savvy measures.

equipping individuals to use it responsibly while maintaining a healthy sense of autonomy.

AI designers should prioritise user-centred approaches that address anxieties and create intuitive interfaces catering to various skill levels, ensuring inclusive access, and fostering trust in these systems. Even as AI tools become more intuitive, preserving user agency is crucial for building trust and maintaining a healthy relationship with technology. AI assistants could be designed to offer suggestions alongside alternative solutions or encourage manual task completion, balancing AI's convenience (as enjoyed by those with Master's degrees, Figure 1) with the preservation of cognitive skills and agency.

The intensity of negative emotions associated with the 'Incomplete without tech' phenomenon requires attention, particularly considering the high frustration and anxiety expressed even by tech-savvy participants. To mitigate this potential over-dependence and promote trust, designs could incorporate "well-being checks" or encourage periods of deliberate disconnect, with prompts and strategies for managing anxiety when technology becomes unavailable. Collaborations between technologists and psychologists could produce valuable tools to help build healthy reliance habits early on.

While developing user-friendly AI is essential, there's a parallel need to cultivate critical thinking alongside technical skills to foster healthy user-AI relationships marked by trust. This includes understanding how algorithms work, recognizing their potential biases, and acknowledging their limitations. AI literacy programs, accessible to diverse demographics, are crucial. Such initiatives would address lingering concerns about

accuracy and autonomy expressed by participants (Table 1), empowering users to navigate the AI landscape discerningly.

Trust stands out as a central theme in the qualitative analysis (Tables 1 & 3). Concerns about privacy, potential biases, and over-dependence underscore the need for transparent AI systems. Explainable AI (XAI) techniques offer potential solutions. For instance, recommendation engines could provide brief insights into their logic beyond simple "Because you liked X" statements. Participants expressed a desire for this understanding, commenting that "I trust it more when I know why it's suggesting something." Additionally, clear privacy policies and easily understandable data usage controls are important. Individuals should be able to opt out of certain data collection, personalize features, and manage the information used to train the AI models impacting their experience. This promotes agency, building trust and reducing anxieties about AI's influence.

The findings resonate with core ideas from established theoretical models. TAM's emphasis on perceived usefulness and ease of use [23, 24] aligns with the correlation between higher education and the overall adoption of various AI features (Figure 1). Education likely fosters the skills and confidence needed to trust the technology's utility. However, as tech-savviness has a less consistent impact, TAM alone seems insufficient. The "Incomplete Without Tech" phenomenon and anxieties around AI assistants highlight the need for frameworks sensitive to the emotional and psychological dimensions of human-technology interaction.

Maslow's hierarchy of needs [10] offers a powerful lens. When effective, AI recommendations (Figure 2) create efficiency and competence, fulfilling basic needs. However, the strong reliance of tech-savvy individuals on these features, despite their theoretical ability to complete tasks independently, suggests potential progression into the higher tiers of esteem and self-actualisation. If AI becomes intertwined with self-image, its sudden absence creates a deficit mirroring the loss of any tool integral to fulfilling those needs. This deep reliance has implications for designing AI that fosters self-reliance and mitigates emotional over-dependence; features promoting 'healthy separation' could be explored.

As mentioned, the Object Relations Theory (ORT) [9] enables us to understand the surprisingly intense reactions to tech absence (Figure 3). Participants used evocative phrases like "feeling lost" and "like a part of me is missing." This suggests that, for some, AI may go beyond being a mere tool and function as a type of transitional object, initially meant to bridge the gap between self and the external world. In this context, the distress caused by its removal echoes early-life separation anxiety, highlighting a reliance that blurs the boundaries between tool and an extension of self.

This reliance may signal that the AI fulfils certain needs within Maslow's hierarchy and is not merely about convenience, impacting both trust and sense of self. Balancing AI's benefits with these psychological risks is a crucial design challenge. To build trust and foster resilience, features encouraging 'healthy separation' could be explored. AI assistants that gradually increase the delay between a task initiated and a solution provided would promote self-reliance while still offering support, allowing users to reclaim agency and build trust in their own problem-solving abilities.

Additionally, incorporating mindfulness principles into AI interactions might mitigate over-dependence. These findings raise crucial ethical concerns about how AI might impact our self-image, autonomy, and resilience over time. Even the well-educated and tech-savvy can develop a strong reliance fuelled by trust in AI. While initially beneficial, this dependence carries the risk of eroded self-reliance and anxiety when AI is unavailable. This challenges assumptions of user autonomy even within deep reliance. The surprising intensity of emotions among tech-savvy participants during tech absence (Figure 3) suggests a potential shift where AI, due to the trust we place in it, can become psychologically embedded in our sense of self.

We need a nuanced, ethical approach to AI development that prioritizes both building trust and fostering the ability to function independently. AI design must promote healthy reliance while preserving agency. Longitudinal studies on the long-term impacts of AI on trust and self-perception are needed. We require guidelines for responsible AI that prioritize user autonomy and resilience, ensuring AI builds trust transparently, fosters self-reliance, and prepares users to function well even when technology is absent.

V. Conclusion

The results presented in this paper's study's reveal a complex and evolving relationship between individuals, AI-powered technologies, the sense of self, and the crucial role of trust. While education and tech-savviness influence reliance, the intensity of emotional responses and concerns about autonomy highlight how the dynamic of trust can lead to reliance that goes beyond traditional addiction or habit-formation models. The mismatch between formal education and self-perceived tech-savviness emphasizes the need for inclusive AI designs that move beyond skill assumptions and address the psychological impact of AI integration in ways that build and maintain user trust.

The results of this paper align with certain expectations from established frameworks such as the Technology Acceptance Model (TAM). Individuals with higher education, particularly those with Master's degrees, consistently demonstrated greater perceived usefulness and ease of use regarding AI technologies. This increased acceptance likely stems from the enhanced technical skills and critical thinking abilities fostered by their education, which influence their trust in the technology and lead to greater adoption. However, the study also reveals that self-perceived tech savviness significantly shapes reliance on AI functionalities, such as recommendations. This suggests that psychological factors like confidence and self-image play a crucial role alongside TAM's constructs in shaping trust.

The 'Incomplete without tech' phenomenon [7] challenges straightforward assumptions about adaptation in an AI-driven landscape. The surprisingly strong negative emotions reported by even the tech-savvy group during periods of tech absence suggest a psychological bond marked by trust that goes beyond mere convenience. This compels us to revisit theoretical

frameworks like Maslow's hierarchy of needs and Object Relations Theory.

AI may initially be adopted for practical reasons, influenced by perceptions of its usefulness and ease of use, but its sudden absence can create a deficit akin to the loss of any tool integral to fulfilling higher needs like belonging, esteem, or even self-actualization. This intertwining has implications for building trust and ensuring user well-being.

These findings call for a shift in our approach to AI development, educational initiatives, and ethical considerations that prioritise building and maintaining user trust while promoting psychological well-being. Designs that foster self-reliance and mitigate emotional over-dependence are needed. Features like 'well-being checks', gradual delays in assistance, or prompts encouraging reflection and 'healthy separation' could strike a balance between AI's benefits and ensuring resilience. Redefining 'tech savviness' educationally, to include not only technical skills but also critical thinking, mindful use, and the ability to trust one's own abilities is crucial. Proactive examination of the long-term influence of AI on self-perception, autonomy, and agency, and how trust influences these dynamics, is essential. This requires longitudinal studies, the establishment of ethical guidelines, and collaborations between researchers, policymakers, and the public.

The study presented in this paper clearly identifies a need for further investigation into AI trust and acceptance. Exploring diverse educational paths, the adaptive strategies used by resilient outliers, and a potential re-examination of Maslow's framework in a modern context of technology reliance would be valuable next steps. This study underlines the importance of understanding how our trust in AI shapes its profound influence on our sense of self and psychological well-being. By looking beyond utility or habit formation, we can design responsibly, ensuring that the integration of human and technological capabilities enhances our lives while preserving the skills, sense of self, and trust in our own abilities that make us uniquely human.

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