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Original Article

Investigating Pharmacists Perceptions and Engagement with Generative AI in Everyday Contexts and Decision-Making

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ABSTRACT

Aim/Background: Generative Artificial Intelligence (Generative AI or Gen AI) is a subset of Artificial Intelligence that produces multimedia content, including text, images, stories, videos, music, and other digital artifacts. Gen AI leverages the deep learning techniques and large language models is to generate human-like text and advanced innovative outputs. The study investigates the public perception, engagement, trust and decision-making related information by using Generative AI tools in individuals' daily life. **Materials and Methods:** Data was collected from 180 individuals who are using current Generative AI applications regularly to support their work. By using Jamovi software Reliability analysis conducted and Cronbach's alpha showed in 0.815, it indicates strong internal consistency. Exploratory Factor Analysis (EFA) was conducted to validate the measurement model and followed by multiple regression analysis is to examine the relationship between public perception, engagement, trust, and decision-making. **Results:** Results revealed that trust and decision-making were not statistically significant (p=0.630) in most cases, suggesting that the Pharmacists perceptions of Generative AI as innovative, they do not fully embrace it, and trust remains limited. **Conclusion:** The study concluded that the Pharmacists perception of Generative AI as innovative, limited trust and remains a barrier to a full adoption and highlighting the need for strategies that enhance the transparency, reliability and ethical safeguards to support its use in everyday decision-making.

Keywords: Generative AI, Pharmacist Perception, Engagement, Decision Making, Trust.

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INTRODUCTION

Generative Artificial Intelligence (Gen AI) refers to the system that capable of creating text images or other media forms through utilization of various generative models (like deep learning and large Language Model techniques). Models acquire patterns and structures within training data subsequently generating new data through complex algorithmic manipulations very quietly. Figure 1 represents Gen AI encompasses myriad (Multi) task types and forms of media generation rapidly across diverse specific areas. Generative AI possesses diverse content creation capabilities and human-like conversational prowess alongside data augmentation abilities typically. Engagement entails active involvement of individuals in daily life while making somewhat informed decisions regarding overall well-being quite effectively. Individuals 'Pharmacists perceptions are reflected quite vividly in their level of engagement. Basic outcomes of an engagement strategy include value and efficiency and trust sometimes but also consistency relevance and control simultaneously. Generative AI offers diverse content creation capabilities and enables human-like conversations while generating vast amounts of training data through complex data augmentation techniques. Goldman Smith asserts global economy grew at 7% rate over past decade and that feat starkly illustrates Gen AI's profound impact on people's daily perceptions. Gen AI has myriad uses across various sectors nowadays quite effectively.

Review of Literature

Gen AI models, such as ChatGPT and Gemini, provide powerful generative capabilities, they may still lack the reliability required for high stakes in decision-making purposes particularly in the individual perception. Meanwhile, the rapid adoption of Gen AI has encouraged a re-examination of existing ethical, legal and regulatory frameworks, as its ability to generate original content challenges the traditional system of authorship, ownership and accountability in the decision-making processes. The exploring of the public perception towards Generative AI is crucial and to acceptance and trust is the significant shape, acceptance and development of applications of AI technologies across the

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essential area of the study (Sharma, 2024). According to the Public Engagement with Generative AI depends on the degree of the individuals feel empowered and secure while using AI tools (Dwivedi *et al.*, 2023). And Trust plays a significant role in the technology acceptance, especially the technology performs complex cognitive tasks, such as content generation and decision making (Venkatesh *et al.*, 2003). However, for Gen AI, trust, transparency, and explainability of additional critical factors (Shin, 2021). Most of the researchers said that Passive AI usage on active engagement, especially when the users perceive the AI outputs to be accurate their needs and preferences (Siau and Wing, 2018). The black box and the nature of Generative AI models concerns decision making and transparency and algorithmic bias (Binns, 2018). In educational and Professional settings, Generative AI is increasingly viewed as productivity enhancer, especially when it contributes to the cognitive tasks, and problem-solving (Zhai, 2022). However, there is a still a gap in public understanding of how these systems function, which can result in misuse (Brennen *et al.*, 2023). The emotional and ethical Pharmacists perceptions of users significantly influence their willingness to use Gen AI tools for decision-making. The users believe that the AI respects their privacy, maintain data security, and provides equitable results, they are more likely to adopt it (Zhou *et al.*, 2021). The relationship between perception, trust, and engagement is interdependent. While users may to find Gen AI tools engaging and useful, decision-making reliance is still evolving, depending on Pharmacists personal experiences, technological literacy, and cultural context (Lu *et al.*, 2021).

Conceptual Model

Conceptual Model illustrates a conceptual model entailing relationships between independent variables namely Perception of Generative AI and Trust in Generative AI alongside Decision making influence and their direct bearing on dependent variable Engagement with Generative AI. Individuals Pharmacists perceptions of generative AI and its impact on decision-making processes collectively influence their level of engagement with such tools quite significantly. This framework lays a foundation beneath understanding key psychological drivers and functional motivations sparking user interaction with Generative AI tools heavily nowadays.

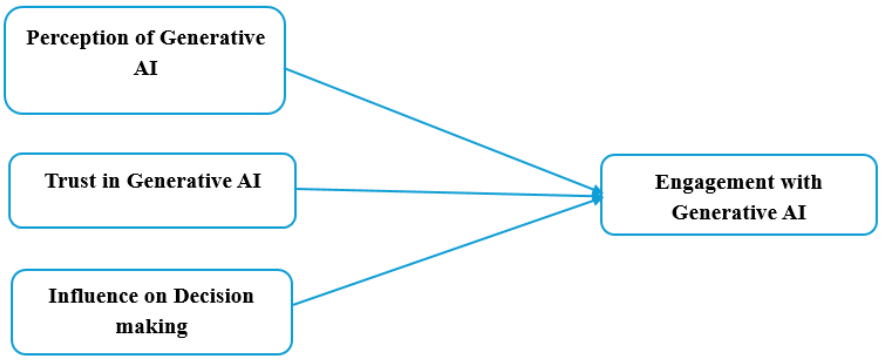
MATERIALS AND METHODS

A total of 180 responses were generated from a google form and analysis was done through JAMOVI software desktop version used entirely for this study. Reliability test yielded over 81.5% and must be accepted for study while exploratory factor analysis validated each variable thoroughly.

RESULTS

Data Analysis

Table 1 represents the reliability statistics for the scale measuring the constructs used in the study. The Cronbach's α value of 0.815 and McDonald's ω of 0.822 indicate a strong level of internal consistency across the items. These values suggest that the items reliably measure the underlying construct with minimal measurement error. Overall, the scale demonstrates satisfactory reliability, confirming its suitability for further statistical analysis. Table 2 summarizes the exploratory factor analysis results for the Public Perception construct. All factor loadings range between 0.621 and 0.719, demonstrating strong item-to-factor relationships. The Bartlett's Test of Sphericity is significant (p<0.001), and the overall KMO value of 0.731 indicates good sampling adequacy. These results confirm that the items meaningfully represent a single underlying factor. Thus, the Public Perception scale is both valid and statistically robust. Table 3 presents the factor analysis results for the Trust in Generative AI construct. The factor loadings, ranging from 0.674 to 0.800, show that each item contributes strongly to the underlying factor. A significant Bartlett's Test (p<0.001) and a KMO value of 0.744 indicate that the dataset is suitable for factor analysis. These findings demonstrate that the trust construct is well-defined and structurally sound. Overall, the scale exhibits strong validity and item cohesion. Table 4 displays the factor loadings for Engagement in Generative AI, with values ranging from 0.569 to 0.725. The Bartlett's Test of Sphericity is significant (p<0.001), and the overall KMO value of 0.742 shows adequate



Conceptual Model.

sampling quality. Although two items have moderate loadings, the construct still retains acceptable validity. These results suggest that engagement-related behaviors cluster reasonably well under a single factor. Thus, the scale is statistically appropriate for further analysis. Table 4 highlights the factor analysis results for Decision Making using Generative AI. The factor loadings range from 0.606 to 0.699, indicating acceptable but comparatively weaker item associations. The Bartlett's Test is significant ($p<0.001$), confirming factorability, while the KMO value of 0.649 falls slightly below the preferred threshold of 0.70. This suggests marginal sampling adequacy and a weaker factor structure. Therefore, the validity of this construct may be limited and may require improvement or item refinement.

Table 5 represents the Multiple regression model summarized indicates an R value 0.630 and R^2 value of 0.397, meaning that 39.7% of the variation in engagement is explained by Perception, Trust, and Decision Making. Table results show that Perception (β=0.312, $p<0.001$) and Decision Making (β=0.204, $p=0.042$) significantly predict engagement, while Trust does not reach significance. The model demonstrates that perception and decision-related factors contribute meaningfully to engagement with generative AI tools. The regression equation reflects these relationships clearly.

DISCUSSION

The study demonstrated strong reliability, with a Cronbach's alpha of 0.815 confirming acceptable internal consistency of the scale. Exploratory Factor Analysis supported data validity, although one decision-making item showed a weak loading and may require revision. Regression results revealed a moderately

Table 1: Scale Reliability Statistics.

	Cronbach's α	McDonald's ω
scale	0.815	0.822

Source: Jamovi Software

Table 2: Exploratory Factor analysis.

Public Perception

Factor Loadings		
	Factor	
	1	Uniqueness
Generative AI technology is beneficial to everyday life.	0.621	0.614
People around generally have a positive view of generative AI.	0.701	0.509
Generative AI is widely accepted as a useful tool in various fields.	0.656	0.570
There is a general awareness about the capabilities of generative AI in my community.	0.719	0.483
Note. 'Principal axis factoring' extraction method was used in combination with a 'none' rotation		

Assumption Checks

Bartlett's Test of Sphericity		
χ^2	d_f	*p*
111	6	<.001

KMO Measure of Sampling Adequacy	
	MSA
Overall Public Perception	0.731
Generative AI technology is beneficial to everyday life.	0.754
People around generally have a positive view of generative AI.	0.714
Generative AI is widely accepted as a useful tool in various fields.	0.751
There is a general awareness about the capabilities of generative AI in my community.	0.712

Source: Jamovi Software

Table 2 represents Outcome of Perception Variable involves all items loading strongly in exploratory factor analysis suggesting robust underlying construct somehow. Overall items loaded above 0.70 must be accepted entirely.

Table 3: Trust in Generative AI.

Factor Loadings		
	Factor	
	1	Uniqueness
Generative AI tools are reliable sources of information. Confidence in the accuracy of outputs from generative AI is high.	0.771	0.406
Confidence in the accuracy of outputs from generative AI is high.	0.706	0.502
Generative AI systems handle data securely and respectfully.	0.800	0.360
Trust in generative AI influences willingness to use these tools regularly.	0.674	0.545
Note. 'Principal axis factoring' extraction method was used in combination with a 'none' rotation		

Assumption Checks

Bartlett's Test of Sphericity		
χ^2	d_f	p
162	6	<.001
KMO Measure of Sampling Adequacy		
		MSA
Overall		0.744
Generative AI tools are reliable sources of information. Confidence in the accuracy of outputs from generative AI is high.		0.717
Confidence in the accuracy of outputs from generative AI is high.		0.782
Generative AI systems handle data securely and respectfully.		0.720
Trust in generative AI influences willingness to use these tools regularly.		0.774

Source: Jamovi Software

Table 3 represents Exploratory Factor analysis involving Trust in Generative AI reveals all item loadings are strongly implicated in this somewhat nebulous variable. Overall items loaded above 0.70 must be accepted anyway.

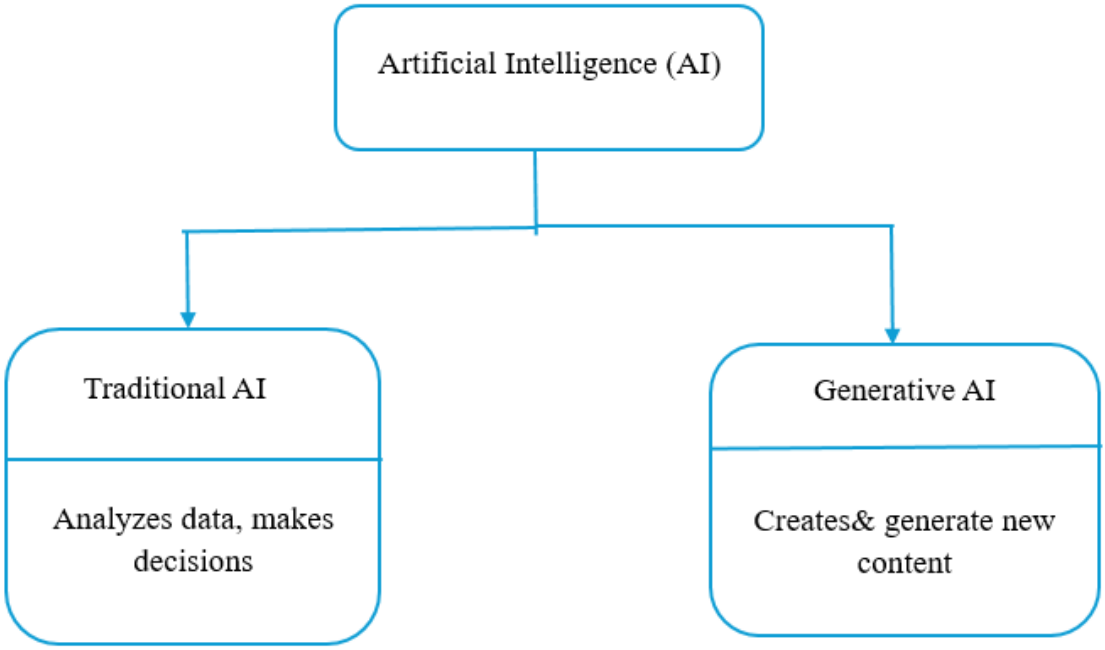


Figure 1: Types of AI. Source: Author.

strong overall relationship (R=0.631), suggesting meaningful associations among the key variables. Findings indicate that generative AI tools have a low but noticeable impact on trust, reflecting pharmacists' cautious attitudes toward AI reliability. However, AI showed a stronger influence on decision-making, helping pharmacists improve judgment and efficiency. Subtle contextual factors continue to shape perceptions, especially concerning trust. Overall, generative AI tools significantly affect pharmacists' perceptions and contribute to enhanced decision-making practices.

FINDINGS

Study findings involve a reliability test yielding Cronbach's alpha value of 0.815 indicating acceptable internal consistency level and Exploratory Factor analysis was subsequently conducted for assessing data validity. All items loaded strongly into respective factors except one item related to decision making with AI showed a woefully weak loading. Regression analysis was conducted fairly thoroughly between several key variables under various conditions. Overall R-value stood at 0.631 indicating moderately strong correlation deemed fairly acceptable in most statistical analyses nowadays. A regression equation was formulated rather haphazardly amidst efforts undertaken

Table 4: Engagement in Generative AI and Decision making with Generative AI.

Factor Loadings		
	Factor	
	1	Uniqueness
Active use of generative AI tools occurs in activities.	0.725	0.474
Opportunities to learn more about generative AI technology are actively sought.	0.576	0.668
Time is regularly spent exploring new features of generative AI tools.	0.704	0.504
Engagement [Generative AI tools are frequently recommended to friends, family, or colleagues.]	0.569	0.676
Note. 'Principal axis factoring' extraction method was used in combination with a 'none' rotation		

Assumption Checks

Bartlett's Test of Sphericity		
χ^2	d_f	*p*
88.5	6	<.001
KMO Measure of Sampling Adequacy		
		MSA
Overall		0.742
Active use of generative AI tools occurs in activities.		0.710
Opportunities to learn more about generative AI tech2logy are actively sought.		0.782
Time is regularly spent exploring new features of generative AI tools.		0.715
Generative AI tools are frequently recommended to friends, family, or colleagues.		0.789

Decision making with Generative AI.

Exploratory Factor Analysis

Factor Loadings		
	Factor	
	1	Uniqueness
Generative AI tools provide valuable assistance in making important decisions.	0.667	0.556
Decision-making quality improves with the support of generative AI.	0.628	0.606
Generative AI offers useful options and suggestions for decision-making.	0.606	0.633
Time required for decision-making decreases when using generative AI tools.	0.699	0.512
Note. 'Principal axis factoring' extraction method was used in combination with a 'none' rotation		

Assumption Checks

Bartlett's Test of Sphericity		
χ^2	d_f	*p*
112	6	<.001

KMO Measure of Sampling Adequacy	
	MSA
Overall	0.649
Generative AI tools provide valuable assistance in making important decisions.	0.652
Decision-making quality improves with the support of generative AI.	0.645
Generative AI offers useful options and suggestions for decision-making.	0.656
Time required for decision-making decreases when using generative AI tools.	0.644

Source: Jamovi Software

Table 4 represents Generative AI engagement variably impacts overall exploratory factor analysis with overall KMO above 0.70 being statistically significant thus making exploratory factor analysis valid. And decision making in Generative AI variably impacts overall Exploratory factor analysis and Overall KMO impacts reached 0.649 which statistically isn't significant so Exploratory factor analysis might be invalid, possibly not acceptable.

Table 5: Multiple Regression Analysis.

Linear Regression

Model Fit Measures		
Model	R	R^2
1	0.630	0.397

Model Coefficients - Average of Engagement				
Predictor	Estimate	SE	t	p
Intercept	1.498	0.3360	4.46	<0.001
Average of Perception	0.312	0.0818	3.81	<0.001
Average of Trust	0.118	0.0729	1.62	0.108
Average of Decision making	0.204	0.0990	2.06	0.042

Regression Equation

Y = a + b1x1 + b2 x2 + b3 x3 + b4 x4 + ---------

Engagement with Generative AI = 1.498 + 0.312 (Perception) + 0.118 (Trust) + 0.204 (Decision making)

subsequently to gain better insight into various underlying factors. Results indicate low impact mainly on trust and somewhat on decision-making dimensions heavily influenced by various subtle factors. Generative AI tools significantly influence individual Pharmacists perceptions thereby bringing about lifestyle changes and bolstering decision-making faculties remarkably well.

CONCLUSION

Gen AI tools are being increasingly utilized daily largely due to public perception playing a major role in shaping various engagement levels effectively. Gen AI creates diverse content remarkably well and simplifies tasks somewhat but raises concerns around trust and reliability in decision-making processes. Regression value suggests a relationship exists between perception and engagement, but trust factors and decision-making processes need bolstering greatly now. Full confidence in outputs from Gen AI for crucial decisions remains somewhat elusive nowadays. Users get engaged pretty quickly and find tools super innovative, but lack of trust and transparency hinders deeper adoption significantly. Fully integrating generative AI into daily existence necessitates markedly enhancing explainability and trust essentially across the board suddenly nowadays.

SUGGESTIONS AND FUTURE SCOPE

Developers should prioritize transparency and ensure outputs are ethically designed and fairly explainable somehow for public trust in Generative AI. Awareness initiatives must be launched swiftly nationwide informing users about Gen AI tools' efficacy and inherent limitations pretty effectively. Policymakers and developers must intricately collaborate establishing nebulous guidelines on murky ethical use and stringent accountability measures pretty quickly. Incorporating feedback mechanisms and crafting intuitive interfaces can rather significantly boost user confidence quite remarkably and enhance overall engagement

gradually. Institutions organize workshops quite frequently for training individuals on responsible Gen AI usage in personal contexts and various other professional settings effectively. Efforts must be made carefully localizing AI tools suitable for diverse cultural contexts and varying linguistic preferences enhancing adoption rates significantly.

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ABBREVIATIONS

Gen AI: Generative Artificial Intelligence.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHORS' CONTRIBUTION

- **Lakshmipriya Bachina (First Author):** Designed the study, developed the questionnaire, collected the data, performed the analysis, and wrote the initial manuscript draft.
- **Anusha Kanagala (Second Author):** Supervised the research, provided guidance on methodology, and critically reviewed and revised the manuscript.
- **Niveditha Pallerla (Third Author):** Assisted with data interpretation, contributed to literature review development, and supported the refinement of the final manuscript.

ETHICAL STATEMENT

The study was reviewed and approved by the Institutional Ethics Committee (IEC) of Koneru Lakshmaiah Education Foundation, with approval reference number KLEF/IEC/2025/77.

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