

Effects of Perception of Potential Risk in Generative AI on Attitudes and Intention to Use

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Abstract—Generative artificial intelligence (AI) is rapidly advancing, offering numerous benefits to society while presenting unforeseen potential risks. This study aims to identify these potential risks through a comprehensive literature review and investigate how user's perceptions of risk factors influence their attitudes and intentions to use generative AI technologies. Specifically, we examined the impact of four key risk factors: fake news generation, trust, bias, and privacy concerns. Our analysis of data collected from experienced generative AI users yielded several significant findings: First, users' perceptions of fake news generation by generative AI were found to have a significant negative impact on their attitudes towards these technologies. Second, user trust in generative AI positively influenced both attitudes toward and intentions to use these technologies. Third, users' awareness of potential biases in generative AI systems was shown to affect their attitudes towards these technologies negatively. Fourth, while users' privacy concerns regarding generative AI did not significantly impact their usage intentions directly, these concerns negatively influenced their overall attitudes toward the technology. Fifth, users' attitudes towards generative AI influenced their intentions to use these technologies positively. Based on the above results, to increase the intention to use generated artificial intelligence, legal, institutional, and technical countermeasures should be prepared for fake news generation, trust issues, bias, and privacy concerns while improving users' negative perceptions through literacy education on generated artificial intelligence, and education that can be used desirable and efficiently.

Keywords—Generative AI; fake news generation; trust; bias; privacy concerns.

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I. INTRODUCTION

Generative artificial intelligence based on ChatGPT is rapidly spreading around the world. Similar economic models such as GPT-4, Dall-E, and Midjourney are also being released, and the growth of the global Open AI market is rising rapidly as the number of users increases explosively. The increase in the number of generative artificial intelligence users and the explosive growth of the Open AI market has created an environment in which any user who wants to access it can access it by providing artificial intelligence applications for free in the early stages and even those who do not know or have no experience using artificial intelligence-related technologies. This is because it can be easily used even by humans. Although generative artificial intelligence is criticized as a politically and culturally destructive autonomous technology, its potential is great. In other words, various images are created according to the user's request, and the subject, style, atmosphere, context, etc. can be selected [1]. In particular, it has extensive uses as it

can create content such as voice, music, video, pictures, essays, novels, reports, and textbooks.

The initial version of ChatGPT was to summarize or condense data spread on the Internet. Still, the current generative artificial intelligence generates all types of content, including text, images, and video, as close to the actual target. In addition, it can not only replicate the pattern of a specific object exactly but also recognize the pattern of the actual object and create a new pattern based on it. Because of this, generative artificial intelligence can create new content based on user needs [2]. As a result, it suggests that generative artificial intelligence has creative and productive potential. Still, at the same time, it also serves as a basis for raising concerns about the potential risks of generative artificial intelligence.

Accordingly, the two sides of new science and technology always arouse intense controversy. Although they bring mankind a comfortable and prosperous life, they can also bring unexpected fatal risks [3], [4]. At the center of the controversy over generative artificial intelligence is deepfake technology. It is a key factor that constitutes the potential

risk of generative artificial intelligence. Deepfake is a compound word for Deep Learning and Fake and can be said to be a synthesis technology that uses artificial intelligence to mix real objects or people with fake audio or video, images, etc. can be created [5]. In particular, content created through deepfake technology has the characteristic of making it look real so that it can be abused politically or used for pornography, voice phishing, and fraud. Additionally, by creating fake news or disseminating false facts, there is a very high risk of causing distortion or prejudice against a specific target and infringing on the privacy of any particular individual.

In this way, videos and images created by generative artificial intelligence are at a level that can be used in real life and are highly scalable in that the production time is less than 60 seconds. In addition, since it can produce real-life images or videos such as photographs, it can be used in various fields [6], and as a result, the potential risks due to generative artificial intelligence may further increase. These deep fake issues are ultimately related to data, data use, management, and analysis methods and are also the core of artificial intelligence ethics [7]. Therefore, in terms of artificial intelligence ethics, it is time to discuss what potential risks exist as a result of generative artificial intelligence generating various texts or contents.

As generative artificial intelligence spreads, concerns about ethical and practical issues regarding generative artificial intelligence are already rising in academia and professional circles. From an ethical perspective, personal information protection, privacy, prejudice, and distortion are emerging. In practical matters, problems are being raised about indiscriminate duplication due to misuse and abuse, similarity to the extent that it is impossible to distinguish between real and fake, and reliability of information. In particular, considering the impact of generative artificial intelligence on individuals and society, there is great concern about what kind of potential damage may occur, so we conducted a preliminary search for risk factors related to generative artificial intelligence among actual users and their relevance to actual use. There is a need to look at it.

As mentioned above, artificial intelligence has various problems. Still, on the positive side, we cannot overlook the social, economic, and cultural impact of generative artificial intelligence and the multiple benefits or profits that result from it. New technologies always entail social change, and considering the Janus-like nature of technology, it is necessary to maximize positive impacts while minimizing negative impacts. Research on generative artificial intelligence that has been conducted so far has focused on positive perceptions and evaluations related to the adoption or continued use of artificial intelligence [8], [9]. However, little attention has been paid to how negative factors, such as the potential risks of generative artificial intelligence, affect users' attitudes or acceptance. Related studies still need to be included.

Therefore, this study seeks to derive potential risks raised by generative artificial intelligence based on a literature review and existing studies. In addition, we aim to raise awareness of the possible risks of generative artificial intelligence by examining the impact on users' attitudes toward generative artificial intelligence and their intention to

use it. Furthermore, we sought to suggest implications for developing a communication strategy that can lead to the desirable use of generative artificial intelligence. This can contribute to minimizing the negative impact of generative artificial intelligence on our society and promoting its correct and efficient use.

II. MATERIALS AND METHOD

A. Potential Risk Factors and Intention to Use Generative Artificial Intelligence

1) *Strengths and potential risks of generative artificial intelligence:* Generative artificial intelligence is an algorithm that generates new text or images. It is an umbrella term that describes machine learning solutions trained on large amounts of data to generate output based on user prompts [10]. It is evaluated as a human-friendly technology. It generates responses to complex and diverse problems like human expressions through a large-scale language model and a user-friendly interactive interface [11]. In particular, generative artificial intelligence can create various types of content, from text to images, and create original content by learning the characteristics of objects in the data using algorithms, models, and rules [12]. It can be said to be a powerful strength of intelligence.

Accordingly, generative artificial intelligence is being evaluated as a game changer in all fields. It not only generates customized answers according to the context requested by the user but also provides creative results. In addition, it is an important inflection point in technological development in that it is significantly helpful in the decision-making and problem-solving of complex problems, and expectations are rising that it will elaborately complement human labor in a creative and productive way in the future [13].

This way, generative artificial intelligence receives widespread user attention based on its rich interaction experience and immediate and accurate answers. It is integrated into various areas of our lives, such as work, learning, and art. However, the rapid incorporation into everyday life is increasing the possibility of causing information security and personal information protection problems. Blind trust in incorrect information generated by generative artificial intelligence and resulting in incorrect decisions can ultimately weaken an individual's creativity and problem-solving abilities, leading to the loss of independent thinking and judgment skills [12].

In particular, the accuracy and reliability of answers provided by generative artificial intelligence and stereotypes and biases are suggested as severe problems. In other words, current generative artificial intelligence technology has the problem of encoding or amplifying stereotypes about specific groups or bias in the data due to inaccurate responses when requesting answers to questions [14]. In addition, it has been pointed out that various problems such as copyright, intellectual property rights, surveillance, and transparency are involved [15], [16].

2) *Potential risk factors and intention to use generative AI:* The potential risks directly affect consumer behavior [17]. Even though generative artificial intelligence is an

innovative technology that provides various benefits or benefits to consumers, if the potential risk is high due to the instability of the technology, it may form consumers' negative attitudes toward generative artificial intelligence and have a negative impact on adoption or acceptance. I can't help but go crazy. Accordingly, based on a literature review, this study established the potential risk factors affecting consumers' overall perception of generative artificial intelligence, such as fake news creation, reliability issues, bias, and privacy concerns. Looking at this in detail, the first thing that stands out significantly about the potential risks of generative artificial intelligence is fake news.

Fake news threatens the proper distribution of information and refers to false news or information spread in articles or news with a specific purpose or intention [18]. The creation and spread of fake news is not unrelated to digital information technology. Digital information technology provides a large amount of information to many people, including information and companies, but in the same context, it also gives the power to produce false information. This limits the human ability to verify what is true and what is false and overwhelms the traditional process of verifying and confirming whether the information provided is true [19]. In particular, fake information provided by deep fake technology [20], [21], such as generative artificial intelligence, is severe in that it directly and indirectly affects human beliefs, regardless of whether they are true. Several researchers have expressed concerns about deepfake fake news concerning the potential risks of generative artificial intelligence [19]. For example, by combining real people or situations, they can be created in text, image, or video format as if they happened and distributed on a large scale, making it impossible for people to tell which is true and which is false. Accordingly, fake news created by generative artificial intelligence may impact users' attitudes toward generative artificial intelligence. In particular, fake news can lead to negative attitudes toward certain technologies because it increases concerns about specific harm to users or others [18], [22]. Based on the above discussion, hypothesis was established—hypothesis 1. The creation of fake news will hurt attitudes toward generative artificial intelligence.

Next is the reliability issue. Trust is a factor that directly affects user evaluation, and trust in a specific technology is a vital factor in determining attitude and acceptance intention [23]. Trust usually refers to the stability of service and the user's belief based on it [24], [42], and occupies an essential position in consumer marketing because it acts as a factor promoting people's acceptance of new technology [23]. When trust in a specific technology increases, it increases the likelihood that it will lead to practical actions such as acceptance along with the formation of a favorable attitude, so the result of trust can be evaluated as a factor determining behavior. In studies related to artificial intelligence, trust has also been reported as a factor in predicting attitudes and intentions. Specifically, trust in artificial intelligence speakers was reported to have a positive effect on attitudes [23], and in studies targeting artificial intelligence users, including ChatGPT, trust was found to be a predictive factor that determines intention to use and actual use [25], [26]. Based on the above discussion, a hypothesis was established—hypothesis 2. Trust will positively affect

attitude toward and intention to use generative artificial intelligence.

On the other hand, it is a matter of balance. Bias has been internalized for a long time in human history and tends to be constantly reproduced [15], and numerous prejudices and discrimination still exist in terms of gender, race, class, etc. Generative artificial intelligence can learn various prejudices and discrimination while accessing vast information on the Internet through machine learning and deep learning and create content about them. Regarding artificial intelligence ethics, bias is considered one of the most critical issues. Because artificial intelligence uses data entered by humans on the Internet or smartphones, it reflects human bias in the data, and people who use it accept the bias as is [27], [28]. Although it is not a study related to artificial intelligence, in a study on algorithmic recommendation services on digital platforms, the perceived bias toward algorithmic recommendation services was reported to impact attitudes toward content use [29] significantly. As a result of comparing pre and post-ethics education on discrimination by artificial intelligence algorithms targeting elementary school students, it was reported that negative attitudes toward artificial intelligence were formed in the post [41]. Based on the above discussion, a hypothesis was established—hypothesis 3. Bias will hurt attitudes toward generative artificial intelligence.

Next is privacy concerns. Generative artificial intelligence requires collecting information on various behaviors to provide certain benefits to users [30]. In particular, collecting, storing, analyzing, and learning large-scale data related to the user's personal information is necessary to offer customized services to individual users. In this process, problems related to personal information protection may arise, and as a result, the purpose of use may be affected. This increases the likelihood that it will lead to a privacy infringement [25]. This possibility of privacy infringement may lead to privacy concerns in which users perceive inconvenience when using generative artificial intelligence. It may negatively affect attitudes and intentions to use it by causing user resistance [31]. This point has also been revealed in a series of studies, where the more users perceive generative artificial intelligence to have potential risks related to personal information or privacy, the more they form negative attitudes toward using generative artificial intelligence [8]. Concerns about information security regarding artificial intelligence were found to impact users' intentions [32] significantly. Based on the above discussion, the hypothesis was established—hypothesis 4. Privacy concerns will have a negative effect on attitudes toward and intention to use generative artificial intelligence.

Meanwhile, attitude refers to favorable or unfavorable feelings toward a specific object [33] and is an essential factor in predicting intention related to use or acceptance [34], [43]. In previous studies on artificial intelligence, attitude has also been reported as a factor in predicting intention. Specifically, the attitude toward artificial intelligence speakers positively affected purchase intention [23]. The attitude toward smartphone chatbots was found to have a positive direct effect on the intention to use [26]. Students and instructors It was reported that attitudes toward using generative artificial intelligence had a positive effect

on the intention to use[8]. Based on the above discussion, the hypothesis was established—hypothesis 5. Attitude will have a positive effect on the intention to use generative AI.

B. Research Method

1) *Research subjects*: This study conducted a survey targeting adults with experience using generative artificial intelligence at least once. The survey was conducted by an online research company over one week from February 1 to 7, 2024. Before the full-scale study, experience in using generative artificial intelligence was confirmed, and respondents without experience using it were excluded. In addition, before the survey, the purpose was briefly explained, and consent was obtained. Through the above process, 220 copies of data were obtained and used for analysis. Looking at the demographic characteristics of the survey subjects, the gender was 105 (47.7%) male and 115 (52.3%) female, and the age was 94 (42.7%) in their 20s and 77 (35.0%) in their 30s, 49 people in their 40s (22.3%) were surveyed. The average number of daily uses of generative artificial intelligence was 113 people (51.4%) less than once, 84 people (38.2%) two or three times, and 23 people (10.5%) four or more times.

2) *Research tools*: In this study, the potential risks of generative artificial intelligence were assumed to be the creation of fake news, reliability issues, bias, and privacy concerns, and users' awareness of the potential risks of a given generative artificial intelligence was measured. To this end, questions for each factor were constructed concerning existing literature and previous studies, and each question was measured on a 5-point Likert scale from 1 'not at all' to 5 points 'very much.'

In this study, fake news creation was defined as the extent to which users perceive generative artificial intelligence to generate fake news. Referring to previous research [35], it consisted of 3 questions through modification and supplementation to suit the purpose of this study. The main questions are as follows. 'I think generative artificial intelligence can provide false news(information) (FN1)', 'I think generative artificial intelligence can provide inaccurate news(information) (FN2)', 'I think generative artificial intelligence can provide fake news (FN3)'.

Trust was operationally defined as the degree to which users trust the information provided by generative artificial intelligence. Referring to previous research[31] consisted of 3 questions through modification and supplementation to suit the purpose of this study. The main questions are as follows. 'Generative AI gives trust and confidence (T1)', 'Generative AI is trustworthy (T2)', and 'Generative AI is trustworthy (T3)'.

Bias was operationally defined as the user's perception of whether distorted or biased information was provided by generative artificial intelligence. Referring to previous studies [31], [36] consisted of 3 questions through modification and supplementation to suit the purpose of this study. The main questions are as follows. 'I think that generative artificial intelligence can provide information that promotes prejudice(B1)', 'I think that generative artificial intelligence can provide information that promotes hatred of

the weak (B2)', 'I think generative artificial intelligence can provide inappropriate information (B3)'.

Privacy concerns were operationally defined as the user's perception of the possibility of personal information being leaked due to the use of generative artificial intelligence. Referring to previous research [17] consisted of 3 questions through modification and supplementation to suit the purpose of this study. The main questions are as follows. 'I think that there is a risk of excessive collection of personal information with generative artificial intelligence(PC1)', 'I think that there is a risk of personal information being leaked to the outside when using generative artificial intelligence(PC2)', 'I believe that when using generative artificial intelligence, there is a risk that my personal information will be used without my consent (PC3)'.

Attitude was operationally defined as a favorable or unfavorable attitude toward generative artificial intelligence. Referring to previous studies [23], [33] consisted of 4 questions through modification and supplementation to suit the purpose of this study. The main questions are as follows. 'I am favorable towards generative artificial intelligence technology(AT1)', 'I think positively about generative artificial intelligence technology(AT2)', 'I like generative artificial intelligence technology(AT3)', 'I am attracted to generative artificial intelligence technology(AT4)'.

Intention to use was operationally defined as the intention to use generative artificial intelligence in the future. Referring to previous research [37], it consisted of 3 questions through modification and supplementation to suit the purpose of this study. The main questions are as follows. 'I have plans to use generative artificial intelligence(IU1)', 'I plan to continue using generative artificial intelligence(IU2)', 'I am positive about the use of generative artificial intelligence(IU3)'.

3) *Validity*: In this study, confirmatory factor analysis was conducted to verify the validity of the measurement tool and the model fit, average variance extracted value(AVE), construct reliability (CR), and internal consistency (Cronbach's α) were examined. Accordingly, due to confirmatory factor analysis (See Table I), the model fit was RMR=.02, GFI=.90, NFI=.92, IFI=.96, CFI=.96 and all fit indices met the fit criteria.

TABLE I
CONFIRMATORY FACTOR ANALYSIS

LV	OV	β	S.E.	t	AVE	CR	Cronbach's α
Fake News	FN1	.80	-	-	.62	.83	.83
	FN2	.78	.07	12.75***			
	FN3	.79	.07	12.97***			
Trust	T1	.76	-	-	.61	.82	.82
	T2	.84	.08	12.54***			
	T3	.74	.08	11.10***			
Bias	B1	.82	-	-	.60	.82	.82
	B2	.74	.08	10.29***			
	B3	.77	.08	11.00***			
Privacy Concerns	PC1	.71	-	-	.58	.80	.80
	PC2	.85	.09	12.11***			
	PC3	.73	.09	10.17***			
Attitude	AT1	.78	-	-	.62	.87	.87
	AT2	.80	.08	13.08***			
	AT3	.75	.08	12.06***			
	AT4	.84	.07	14.06***			
Intention to use	IU1	.87	-	-	.67	.86	.84
	IU2	.93	.05	19.09***			
	IU3	.64	.07	10.71***			

*** p< .001

The standardized path coefficient(β) for the observed variable of the latent variable ranged from .64 to .93. The average variance extracted value(AVE) ranged from .58 to .67, exceeding the minimum standard of .50. Concept reliability(CR) was also found to be between .80 and .87, exceeding the minimum standard of .70. In addition, the internal consistency (Cronbach's α) based on reliability analysis was .80~.87, confirming that it showed an appropriate level of reliability at the social science level.

4) *Data processing*: This study's main results were derived through the following analysis process using the SPSS 21.0 program and the AMOS 21.0 program. First, to validate the measurement instruments used in this study, we conducted confirmatory factor analysis(CFA), verified the model fit, and examined the standardized path coefficients and statistical significance of observed variables for latent variables. Additionally, we confirmed the average variance extracted(AVE), construct reliability(CR), and internal consistency(Cronbach's α) based on reliability analysis. Second, frequency analysis and correlation analysis were performed, and third, path analysis was conducted to verify the hypotheses established in this study.

III. RESULTS AND DISCUSSION

A. Correlation Analysis

Correlation analysis was conducted to examine the relationship between fake news generation, trust, bias, privacy concerns, attitudes, and intention to use, which are the main variables of this study. First, fake news generation ($r=-.72$, $p<.01$), bias ($r=-.48$, $p<.01$), and privacy concern ($r=-.77$, $p<.01$) were negatively correlated with attitude, and trust was positively correlated with attitude ($r=.67$, $p<.01$), trust was positively correlated with intention to use ($r=.62$, $p<.01$), and privacy concerns were negatively correlated with intention to use ($r=-.68$, $p<.01$). Finally, attitude was positively correlated with intention to use ($r=.79$, $p<.01$). Overall, the correlation coefficients ranged from $-.77$ to $.79$ and did not exceed .80, indicating that multicollinearity was not a problem.

TABLE II
CORRELATION ANALYSIS

	1	2	3	4	5	6
1	1					
2	-.77**	1				
3	.43**	-.32**	1			
4	.76**	-.69**	.42**	1		
5	-.72**	.67**	-.48**	-.77**	1	
6	-.67	.62**	-.04**	-.68**	.79**	1

Note) 1: Fake News, 2: Trust, 3: Bias, 4: Privacy concerns, 5: Attitude, 6: Intention to use

B. Hypothesis testing

To examine the main hypotheses established in this study, we conducted a path analysis. Regarding Hypothesis 1, which explored the impact of fake news generation on attitudes toward generative AI, the results showed that fake news generation had a negative effect on attitudes toward generative AI ($\beta= -.17$, $t= -2.48$, $p<.05$).

For Hypothesis 2, which investigated the influence of trust on attitudes toward generative AI and intention to use, the findings revealed that trust had a positive effect on both

attitudes ($\beta=.17$, $t=2.69$, $p<.01$) and intention to use ($\beta=.13$, $t=2.26$, $p<.5$).

Concerning Hypothesis 3, which examined the impact of bias on attitudes toward generative AI, the results indicated that bias had a negative effect on attitudes toward generative AI ($\beta= -.16$, $t= -3.50$, $p<.001$).

Regarding Hypothesis 4, which explored the influence of privacy concerns on attitudes and intention to use, the analysis showed that privacy concerns had a negative effect on attitudes ($\beta= -.46$, $t= -7.30$, $p<.001$), but did not significantly affect intention to use ($\beta=-.08$, $t= -1.30$, $p>.05$).

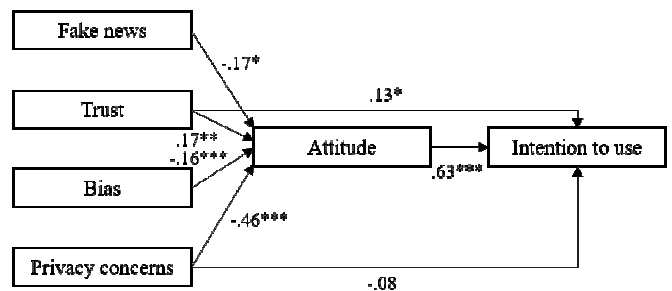
Finally, for Hypothesis 5, which investigated the impact of attitudes toward generative AI on intention to use, the results demonstrated that attitudes positively affected intention to use ($\beta=.63$, $t=9.94$, $p<.001$).

TABLE III
PATH ANALYSIS

Hypothesis		β	S.E.	t
H1	Fake News \rightarrow Attitude	-.17	.06	-2.48*
H2	Trust \rightarrow Attitude	.17	.05	2.69**
	Trust \rightarrow Intention to use	.13	.05	2.26*
H3	Bias \rightarrow Attitude	-.16	.04	-3.50***
	Privacy Concerns \rightarrow Attitude	-.46	.06	-7.30***
H4	Privacy Concerns \rightarrow Intention to use	-.08	.07	-1.30
H5	Attitude \rightarrow Intention to use	.63	.07	9.94***

Model Fit: GFI=.96, NFI=.97, IFI=.97, CFI=.97

* $P<.05$ ** $p<.01$ *** $p<.001$



Model Fit: GFI=.96, NFI=.97, IFI=.97, CFI=.97

* $p<.05$ ** $p<.01$ *** $p<.001$

Fig. 1 Hypothesis test results

C. Discussion

This study examined the impact of perceptions of potential risk factors associated with generative AI on attitudes and intention to use among users with experience using generative AI. The main findings and their implications are discussed below.

First, fake news generation negatively influenced attitudes toward generative AI. This suggests that a more robust perception that generative AI could provide false, inaccurate, or fake news leads to negative attitudes toward generative AI. This result supports previous research indicating that personalized systems like generative AI can influence users' views, attitudes, and preconceptions [38] and that negative attitudes form toward specific technologies that provide fake news [18].

Generative AI can create seemingly factual content by combining fake or false information with reality through deepfake technology. This makes verifying the truthfulness of provided information or news challenging and poses

significant risks as it can influence individual beliefs [19]. This study's results demonstrate that generating fake news by generative AI can reinforce users' negative attitudes toward it, potentially hindering social acceptance. In particular, fake news generation is closely related to the possibility of data contamination, artificial manipulation, technical errors, and omissions in the data provided by generative AI. This can lead to users' incorrect decision-making or reproducing harmful content [39], inevitably resulting in a negative usage environment where errors caused by fake news generation must consistently be recognized when using generative AI. Although generative AI is a highly innovative technology, users' perceptions of potential risks related to fake news generation can weaken their motivation to use or accept generative AI. Therefore, enhancing users' understanding of generative AI technology is necessary by strengthening AI literacy.

Next, trust positively influenced attitudes toward generative AI and intention to use it. This indicates that higher perceptions of generative AI as trustworthy and reliable lead to the formation of positive attitudes and increased intention to use. This is consistent with previous studies reporting that trust in AI positively influences attitudes [23] and intention to use [25], [26]. Even for technologies that bring innovative changes to everyday life, if trust is not established, negative attitudes can spread, leading to resistance or innovation rejection. This is significant not only in terms of technical aspects but also in terms of safety and confidence in the socioeconomic changes brought about by generative AI [40]. Therefore, trust can be considered a factor that strengthens the perception of generative AI as a socially and economically safe platform and an important foundation for increasing intention to use.

Bias was found to influence attitudes toward generative AI negatively. This suggests that stronger perceptions that generative AI could provide information that promotes prejudice or discrimination against vulnerable groups lead to negative attitudes toward generative AI. This supports the findings of previous studies reporting a significant relationship between bias and attitudes toward content use [29]. Generative AI carries the risk of reproducing or newly generating biased information that has been internalized over a long period through collecting and learning vast amounts of information from sources like the internet. As revealed in this study's results, bias forms negative attitudes toward generative AI, potentially limiting its efficient use. In a situation where generative AI is already becoming an essential element of our society, algorithmic bias further strengthens the need to address AI ethics. For example, although focused on elementary school students, a study showing that ethics education related to AI-driven discrimination negatively influenced attitudes toward AI suggests that users' perceptions of generative AI are crucial in determining attitudes [41]. Therefore, measures should be taken to ensure proper use by providing an educational environment where users can correctly understand generative AI.

Privacy concerns influenced attitudes toward generative AI and intention to use it negatively. This indicates that stronger perceptions of risks associated with generative AI potentially leaking personal information externally without

user consent or excessively collecting it leads to negative attitudes toward generative AI and lower intention to use. These results support previous studies reporting that perceptions of potential risks related to personal information or privacy in generative AI led to negative attitude formation [8], [41] and significantly influenced users' intentions [32]. Generative AI must collect, store, and analyze large amounts of user-related information to provide personalized information as requested, which carries the risk of invading users' privacy. The direct negative impact of privacy concerns on attitudes toward generative AI can be understood as one of the criteria for gauging users' concerns about generative AI. However, there are limitations in in-depth discussion about the result that privacy concerns did not significantly affect intention to use due to a lack of relevant previous studies. While this may be partly due to the rapid development of generative AI technology and the perception of significant benefits or advantages obtainable through its use, continued research and verification are required.

Finally, attitudes toward generative AI influenced the intention to use it positively. This suggests that more favorable and likable perceptions of generative AI lead to higher intention to use. This result is consistent with previous AI-related studies reporting that attitudes toward AI are an effective positive predictor of intention to use [8], [26]. Therefore, it demonstrates that forming positive attitudes toward generative AI is crucial for increasing intention to use concerning the social acceptance of generative AI.

In conclusion, to increase the intention to use generative AI, it is essential to enhance positive attitudes by effectively controlling potential risks of generative AI, such as fake news generation, trust issues, bias, and privacy concerns. Legal, institutional, and technical alternatives should be sought to minimize these potential risk factors. Simultaneously, there is a need to improve users' understanding of generative AI and provide education for desirable and efficient use, along with AI literacy education.

IV. CONCLUSION

This study examined the influence of perceptions regarding potential risks of generative AI, such as fake news generation, trust issues, bias, and privacy concerns, on attitudes and intention to use generative AI among adults with experience using such technology. Based on this, the main findings can be summarized as follows:

First, users' perceptions of generative AI generating fake news were found to negatively influence attitudes toward generative AI. Second, users' trust in generative AI showed a positive influence on their attitudes toward and intentions to use it. Third, users' perceptions of bias in generative AI negatively influenced attitudes toward generative AI. Fourth, users' privacy concerns regarding generative AI did not significantly affect their intention to use it but negatively influenced attitudes toward it. Fifth, users' attitudes toward generative AI influenced their intention to use it positively.

Based on these results, developing legal, institutional, and technical countermeasures for fake news generation, trust problems, bias, and privacy concerns is essential to increase the intention to use generative AI. Simultaneously, literacy

education about generative AI is needed to improve users' negative perceptions and promote desirable and efficient use.

This study's theoretical and practical implications are as follows: First, it is theoretically significant in identifying potential risk factors of generative AI and examining their impact on users' actual attitudes and intentions to use it. Second, from a practical perspective, to increase the intention to use generative AI, it is necessary to establish means to actively control and manage the potential risks of generative AI and utilize these as communication strategies for marketing and public relations.

However, there were some limitations to this study. Based on these limitations, the following suggestions are made: First, as there may be various factors contributing to the potential risks of generative AI beyond fake news generation, trust issues, bias, and privacy concerns, a more comprehensive approach is needed to categorize the potential risks of generative AI through broader literature review and examination of previous studies. Second, concerning the potential risks of generative AI, including AI literacy as a moderating variable and attitudes and intention to use could help to understand users' attitudes and intentions toward generative AI more clearly. Third, there is a need to consider the possibility of applying experimental research methods in investigating the relationship between potential risks, attitudes, and intentions to use generative AI. As the potential risks of generative AI are not yet a core issue among users, conducting ethics education about these potential risks and comparing attitudes and intentions to use before and after the education could yield more meaningful results. Therefore, future research should examine the potential application of AI literacy as a moderating variable while also thoroughly reviewing experimental research methods from a methodological perspective.

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