Exploring Student Perceptions of Artificial Intelligence in Microfinance Marketing Systems: Impacts, Benefits, and Adoption Challenges

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Abstract: *The use of artificial intelligence (AI) is progressively transforming marketing in various ways, such as offering more sophisticated analytics, personalization, and automated decision-making, as well as changing the design and execution of marketing activities. The results of this study are based on the Technology Acceptance Model (TAM) where students were asked to share their perceptions toward AI in marketing regarding AI knowledge, perceived benefits, perceived effects on marketing, perceived challenges, and willingness to adopt AI tools. A quantitative, cross-sectional design was applied in conducting the survey using survey data of 766 students in business-related programs and analyzed with statistical methodology (descriptive and inferential statistics). The results reveal that students have a moderate to high level of AI understanding and that they suggest AI as extremely productive in terms of efficiency, easing marketing activities, and marketing productivity. All these perceptions are closely linked to the willingness of students to use AI tools, and the main argument of TAM suggests that perceptions of usefulness and familiarity are the predictors of behavioral intention. Simultaneously, ethical and practical issues, especially in the area of data privacy, transparency, and misinformation, are apparent, indicating that the perceived risk is related to a positive intention to adopt. Significant variation was noted in demographic and experience groups, and the history of AI experience became a strong predictor of all constructs. The combination of enabling and limiting factors into a single TAM-based framework makes it possible to use this study to expand the AI adoption theory in marketing and emphasize the necessity to develop ethical aspects as part of models of technology acceptance in the context of educational and professional marketing.*

Keywords: Artificial Intelligence in Marketing, Technology Acceptance Model (TAM), AI Adoption Readiness, Perceived Benefits and Challenges, Ethical Concerns in AI.

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Introduction

Artificial intelligence (AI) has proven to be a revolution in modern-day marketing as it is a groundbreaking component that has essentially redefined the way companies approach consumer behavior, develop 1:1 content, and data-driven strategies. The recent progress in machine learning, predictive analytics, and generative AI has allowed marketers to automate the process of decision-making, improve customer engagement, and optimize marketing performance in digital platforms. Consequently, AI-based technologies in the form of chatbots, recommendation engines, algorithmic targeted advertising, and automated content creation tools have become part of contemporary marketing (Kaplan and Haenlein, 2019; Davenport and Ronanki, 2018; Rolando, 2024). Along with significant efficiency, personalization, and strategic effectiveness benefits provided by AI implementation, the implementation has also raised new ethical and operational challenges (Francis et al., 2023). Marketing uses of AI typically depend on vast amounts of individual information, which brings up issues on privacy, transparency, biases in the algorithms, and the possibility of manipulating consumer behavior. Recent empirical and meta-analytic findings point to the fact that such ethical concerns might have a great impact on trust, attitudes, and readiness of users to interact with AI-driven marketing systems (Barari et al., 2024; Goncalves et al., 2023). In turn, it is crucial to comprehend the way people assess the opportunities and threats posed by AI as this is one of the keys to sustainable and responsible use thereof.

In this changing environment, the group of students who undertake business and marketing courses is a key stakeholder. They will be tasked with the design, management, and evaluation of AI-driven marketing programs as future marketing professionals. Their attitude, information, and willingness to adopt AI tools are thus the key to the success of AI integration in marketing practice in the long term. According to previous studies, students positively form attitudes towards AI and believe that it can be used to improve productivity and learning outcomes, though the issues concerning ethics, data security, and responsible usage remain (Zhou et al., 2024; Aldossary et al., 2024; Elhajjar et al., 2020; Al Hunaiyyan and Al Sharhan, 2009). Although there is an increasing amount of research on the adoption of AI, multiple gaps still exist. Some of the existing literature has dwelled upon consumer behavior, decision-making within organizations, or overall educational settings, without considering either the advantages or issues of AI awareness, benefits, or challenging conditions separately. There are few empirical studies that are also able to explore the knowledge of students in AI, the perceived benefits, challenges, and readiness to use AI in the specific marketing area only. Also, very little literature has investigated the demographic variables and existing experience with AI and how they influence such perceptions, especially in highly digitalizing settings.

Technology Acceptance Model (TAM) and other adoption models are helpful theoretical perspectives to fill these gaps. TAM assumes that behavioral intention and actual use are major drivers influenced by perceived usefulness and familiarity with a given technology. These links have been consistently supported by empirical studies in both educational and marketing-based AI backgrounds (Al-Huwail et al., 2025). The most important factor is that users who view AI as useful and understandable are more prone to adopt it (Zhou et al., 2024; Aldossary et al., 2024). Nevertheless, this relationship can be complicated by the existence of ethical issues and perceived obstacles, which necessitates a more comprehensive empirical analysis. To address these gaps, this paper will explore students' perceptions towards

AI in marketing by concurrently evaluating AI knowledge, perceived benefits, perceived impacts on marketing, readiness to use AI tools, and perceived challenges. The study, using quantitative data from 766 respondents, provides empirical evidence on how future marketing professionals assess AI technologies and what issues impact their willingness to use them. The research aims to:

1. Test the overall awareness and knowledge of students about AI tools in marketing.
2. Discuss students' perceived benefits of AI in marketing contexts.
3. Assess perceived obstacles and ethical issues related to the use of AI.
4. Determine how ready students are to utilize AI tools in marketing activities.
5. Determine demographic and experience differences in the perception of AI.

This study aims to address these concerns and will also be significant to the literature in three important ways. First, it enhances research on the application of AI by specifically addressing the applications of AI in marketing and not the overall application of AI. Second, it offers some empirical evidence, at large sample, about the combined action of knowledge, benefits, challenges, and readiness in the creation of AI perceptions. Third, it serves as a useful source of knowledge to educators, institutions, and policymakers who would like to develop AI-based marketing courses that advance a high level of technical skills and moral integrity. This article is outlined as follows; Section 3 presents a literature review, and Section 4 presents the research methodology. Section 5 presents the empirical results, and Section 6 discusses the results. The conclusion of the study is presented in Section 7, and the implications of the research are presented in Section 8. Last but not least, Section 9 gives the limitations of this study and plans towards further studies.

Literature Review

Artificial Intelligence in Marketing

Innovation in marketing has received significant emphasis now with the emergence of the concept of artificial intelligence. Organizations are no longer inclined to engage in traditional decision-making processes that involve intuition, but instead, they are adopting data-based and automated decision-making solutions. Machine learning algorithms, predictive analytics, and generative systems can help marketers analyze big data, recognize trends among consumers, and make marketing decisions optimally in real-time (Rolando, 2024; Alduaij et al., 2024; Alainati et al., 2024). These features have increased the use of AI in marketing processes, such as customer segmentation, personalized communication, content creation, and performance analysis of campaigns (Rolando, 2024). Nevertheless, recent journals point out that the existing introduction of AI in marketing is not simply a technological alteration but a behavioral and cognitive change. This change is determined by the level of knowledge, trust, and the perceived worth of AI technologies by their users. As more organizations invest in AI-enabled marketing solutions, the success of these initiatives varies based on how people interact with and perceive such technologies. This highlights the importance of exploring AI adoption from a humanistic perspective, particularly among future marketing professionals.

Perceived Benefits of Artificial Intelligence in Marketing

Perceived benefits are a pivotal factor in artificial intelligence use in marketing settings, which has been repeatedly highlighted in the technology acceptance literature. AI in marketing is most appreciated in terms of its efficiency, personalization, quality of decision-making, and interaction with clients. Previous research has demonstrated that when AI technologies are viewed as performance-enhancing and strategic, people tend to form more positive adoption intentions. A large body of literature shows that improved efficiency is one of the most prominent advantages of AI in marketing. Artificially intelligent technologies facilitate marketers to have robot-assisted solutions to repetitive work, process mass data in real time, and realize more efficient and accurate campaign optimization. Practical research has revealed that AI implementation saves time, reduces costs, and enhances operational efficiency in the digital marketing landscape (Prentice et al., 2020; Davenport and Ronanki, 2018; Binlibdah, 2024). Further evidence indicates marketing productivity is increased through AI-based analytics, since the technology allows the use of data in order to target customers and to allocate resources (Chatterjee et al., 2021; Paschen et al., 2020).

In addition to operational efficiency, individualization, and interactions with customers, are always observed to be among the perceived advantages of AI adoption. Recommendation systems, chatbots, and predictive analytics are AI technologies that enable organizations to provide personalized content and offers according to consumer choices and behavioral information. Studies have shown that AI-based personalization positively impacts customer happiness, interaction, and customer-assessed value, enhancing brand-customer relationships (Rolando, 2024; Prentice et al., 2020; Huang and Rust, 2021). Recent reports also indicate that intuitive AI apps contribute to the relevance and efficiency of marketing communications, especially in social media and digital advertising environments (Sharma and Kalla, 2024; Paschen et al., 2020). AI is viewed as a strategic facilitator of better marketing decision-making. AI tools assist marketers in predicting consumer behavior, determining market trends, and optimizing strategic decisions by applying machine learning algorithms and predictive models. Preliminary studies highlight how AI saves and improves the quality of decisions by helping to decrease human biases and boost analytic accuracy, making AI a strategic asset and not just an operational tool (Kaplan and Haenlein, 2019; Chatterjee et al., 2021).

From an educational perspective, perceived benefits have a decisive impact on the readiness to utilize AI in other marketing-related activities. In the literature that is student-based and targets early career professionals, the perception of AI as a tool in skill and employability growth, as well as an aspect of professional relevance in the future, aided predictably high rates of adoption (Zhou et al., 2024; Aldossary et al., 2024). People are more willing to incorporate AI into marketing practices if the latter is seen as something that can contribute to better learning effects and professional efficiency. Altogether, the sources unanimously show that the perceived advantages of AI in marketing include increased efficiency, personalization, increased engagement, and better decision-making. These advantages play a crucial role as adoption intention drivers, with good theoretical and empirical substantiation to justify the inclusion of perceived benefits as a primary construct in theories exploring AI acceptance in marketing settings.

Ethical Concerns and Challenges of Artificial Intelligence in Marketing

Although artificial intelligence has been identified to offer multiple advantages to the marketing field, earlier studies do not fail to indicate ethical and practical issues that can slow down its adoption. Among them, problems related to data privacy and data security are the most prominent. Along with being reliant on the data collection and analysis of personal and behavioral data to a considerable degree, the marketing systems developed with the assistance of AI are linked to the threat of data abuse, privacy breach, and legal considerations. Empirical evidence indicates that the higher the privacy concerns, the lower the levels of trust in AI-powered marketing applications, thus reducing adoption intentions (Goncalves et al., 2023; Barari et al., 2024; Martin and Murphy, 2017). The explainability and transparency of AI Systems is another important challenge. The majority of AI solutions are black boxes; thus, the user does not have insights into the process of how marketing choices or recommendations are achieved. This transparency has been reported to intensify manipulated feelings and the influence of algorithms, particularly on individualized advertising (Rolando, 2024; Longoni et al., 2019). These images can hurt trust in AI results and decrease the willingness to use AI-based marketing tools. Real-life issues further complicate moral dilemmas.

The barriers to the effective adoption of AI have been identified as high implementation costs, technical complexity, and low levels of user expertise, especially among less-experienced users. Research shows that the perceived complexity of use and a lack of understanding of the reliability of AI have the potential to degrade positive attitudes towards AI despite recognizing its usefulness in functions (Davenport and Ronanki, 2018; Binlibdah, 2024). Theoretically, such ethical and practical issues build on the traditional models of technology acceptance by focusing on the significance of perceived risk in addition to perceived usefulness. Recent studies suggest that ethical standards, including privacy, fairness, and accountability, should also be included in AI adoption models to provide a more comprehensive view of user acceptance in marketing processes (Goncalves et al., 2023; Barari et al., 2024). In this respect, ethical issues can be cited as a critical counterbalancing variable in the willingness to embrace AI in marketing.

Students' Knowledge and Awareness of AI

Knowledge and awareness of AI are the bases of such determinants of the willingness of people to use artificial intelligence in marketing situations. Previous studies have shown that understanding AI concepts, tools, and applications lowers uncertainty and makes users more confident about them, thus creating more positive perceptions towards adopting AI. In marketing contexts, AI-driven technologies, including social media analytics, recommendation systems, and AI-generated content, have been found to affect the way people rate the usefulness and relevance of AI tools (Alzayed and Al-Hunaiyan, 2021). Empirical research involving students and young professionals at the beginning of their careers shows a positive correlation between AI knowledge levels and acceptance and usage intent. To illustrate, Zhou et al. (2024) have discovered that the more exposure the students had to AI technologies, the more they were perceived to have a higher perceived usefulness and more positive attitudes towards the adoption process. Similarly, Aldossary et al. (2024) found that perceptions of risk were

moderately influenced by awareness and comprehension of generative AI, which in turn led to acceptance and intention of AI usage among students.

Theoretically, the usefulness of AI knowledge is more relevant to the Technology Acceptance Model, which underlines that well-informed users tend to see the value of innovative technologies and are more inclined to have positive behavioral intentions (Kaplan and Haenlein, 2019; Alainati et al., 2025). Within agency-based learning, AI expertise cannot only assist in learning skills but also allows people to be more critical and accountable in their interplay with AI machines, especially within the sphere of marketing, as morality and strategies gain greater significance. Overall, according to the literature, knowledge and awareness of AI provide conditions that reinforce the perceived benefits and reduce the pressure of uncertainty, which increases readiness to use AI tools. Therefore, investigating students' AI knowledge levels is crucial for comprehending the differences in the readiness for AI adoption in marketing education and practice.

Students' Readiness to Adopt AI Technologies

Willingness to use AI signifies that people are ready and willing to experience AI technologies in a real-life setting. Within the context of marketing, perceptions of benefits, knowledge, attitudes towards AI, and views on the risks related to it influence its readiness. In a prior study, the researcher highlighted that readiness is an important antecedent of actual technology use in situations with high technological change. Empirical research findings indicate that perceived usefulness and previous experience of engaging with AI are central determinants of readiness to adopt. Studies of students and early career professionals show that those who consider AI a useful tool for improving performance and professional opportunities show greater preparedness to use AI applications (Zhou et al., 2024; Aldossary et al., 2024). These results are consistent with research on technological acceptance, where behavioral intention is a key outcome of positive technology assessments. In theory, the Technology Acceptance Model and other similar models note that readiness depends mainly on being perceived as useful and easy to use, both of which depend on knowledge and previous exposure to technology (Davis, 1989; Kaplan and Haenlein, 2019).

Readiness also reflects how well people feel about their capability to harness AI technologies properly and in anticipation of AI applications in marketing. Recent research also indicates that readiness to adopt AI can be moderated by moral aspects and perceived risk factors. Data privacy, transparency, and accuracy issues may decrease the readiness to trust AI systems despite the recognition of their functional benefits (Goncalves et al., 2023; Barari et al., 2024). To that end, AI readiness should be viewed as a multidimensional concept that has both facilitating and inhibiting determinants. Overall, the literature shows that the willingness to utilize AI in marketing is facilitated by positive judgments of usefulness and proficiency and restrained by ethical considerations and risk perceptions. This view justifies the addition of readiness as an important outcome variable to models that study AI acceptance in marketing education and practice.

Theoretical Framework: Technology Acceptance Model (TAM)

The Technology Acceptance Model is a theoretical framework that provides an excellent understanding of AI adoption and use in marketing and educational practices (Al Hunaiyyan et

al., 2021). TAM posits that the intention to use a technology can be largely determined by perceived usefulness and perceived ease of use. Empirical studies on AI adoption based on TAM and related theories consistently confirm these associations and demonstrate that knowledge of AI tools and belief in their usefulness are major determinants of behavioral intention (Zhou et al., 2024; Aldossary et al., 2024). Recent extensions of TAM in AI research suggest that external variables such as ethical issues, trust, and perceived risk can mediate or indirectly influence adoption intentions (Rolando, 2024). This comprehensive understanding is particularly relevant in marketing, where AI systems interact directly with consumers and their personal information. TAM provides a robust framework for evaluating AI tools in marketing among students by integrating levels of knowledge, perceived benefits, challenges, and readiness into a single model.

Research Gap and Conceptual Positioning

Despite the fact that there are some valuable insights on the adoption of AI in the existing studies, gaps can be identified. Majority of previous studies inclined to investigate AI knowledge, positive issues, ethical concerns, or readiness in case-by-case mode and comparatively little empirical research has been formulated to build the dimensions of one model to explore marketing activities. Moreover, there is also a lack of research that specifically targets the students as a potential source of future marketing professionals and/or that takes into account the demographic and experience differences. To address those gaps, the present study will have an integrated approach due to TAM and will engage empirically in researching the gap in what the students know about AI, the perceived benefits and challenges of AI, and the desire to use AI tools in marketing scenarios. This research will be based on the current-day literature and present a closer insight into the perception of the future marketing practitioner regarding the changes brought about by AI and how they will be prepared to embrace these changes. On the basis of these theoretical perspectives, and based on empirical evidence, the present study empirically examines the relationship between AI knowledge, personal perceived benefits, perceived barriers and intention to adopt AI in marketing within a student setting.

Methodology

Research Design and Sample

This study used a quantitative, cross-sectional research design to explore students' perceptions of the concept of artificial intelligence in marketing. The information was gathered using a structured online questionnaire directed to students pursuing programs related to business. A total of 766 valid responses were collected. Table 1 describes the demographic features of the respondents.

Instrument and Measures

The questionnaire was divided into five constructs: AI Knowledge (4 items), AI Benefits (4 items), Effects on Marketing (6 items), Readiness to Use AI in Marketing (3 items), and Challenges (7 items). Each of the items was rated on the basis of the five-point Likert scale between 1 (strongly disagree) and 5 (strongly agree). Cronbachs alpha was used to test reliability and the values got were between 0.769 and 0.925 which reveals that there was good-excellent internal consistency among all the constructs (Table 2).

Data Collection Procedure

The questionnaire was sent online through institutional means. Participation was voluntary, and the respondents were made aware of the purpose of the study as well as guaranteed anonymity and confidentiality. Data was collected during the semester.

Data Analysis

Data analysis was performed using the JAMOVI statistical software. Means were constructed, and descriptive statistics were calculated to determine response patterns. Pearson's correlation analysis was performed to determine the relationships between the study variables. Gender differences were analyzed using independent samples t-tests, whereas Welch one-way ANOVA was employed to assess the differences between age and AI experience levels. The level of statistical significance was tested at traditional levels ($p < .05$, $p < .01$, $p < .001$).

Ethical Considerations

This study was conducted in accordance with the ethical standards. The process was a voluntary one and no information that could be individually identified was gathered and anonymity was observed in the analysis of the responses.

Results

This section summarizes the main findings of the research, which include the results of descriptive statistics, reliability tests, and correlation analysis, including t-tests and ANOVA. The findings provide insights into students' understanding of AI, perceived advantages, marketing impacts, willingness to use AI tools, and perceived barriers to AI in marketing.

Descriptive Analysis of Demographic Variables

A total of 766 students participated in the study. Table 1 summarizes the demographic characteristics of the sample, including gender distribution, age groups, hours of AI usage, and levels of experience with AI applications.

Table 1: Sample Distribution According to Demographic Variables (N = 766)

	Variables	*Frequency*	*Percent %*
Gender	Male	252	32.9%
	Female	514	67.1%
Age	16 - 20	208	27.2%
	21 - 30	499	65.1%
	31 - 40	39	5.1%
	more than 41	20	2.6%
Use of AI Tools	1 to 2 hours per day	287	37.5%
	3 to 5 hours per day	201	26.2%
	Do not use at all	145	18.9%
	More than 5 hours per	133	17.4%
	High	137	17.9%

Experience using AI applications Experience	Low	248	32.4%
	Medium	381	49.7%

The sample was mostly female (67.1%), with the majority of the respondents aged between 2130 years (65.1).Nearly half (49.7%) of the students said they had minimal experience with AI applications, and 37.5% said they used AI tools for 1-2 hours per day.

Reliability of Study Constructs

Cronbach's alpha values were calculated to assess internal consistency. As shown in Table 2, all constructs achieved good to excellent reliability, with α values ranging from 0.769 to 0.925.

Table 2: Reliability Analysis for Study Constructs

	Constructs	**No. of Items**	**Cronbach's α**
1	AI_Knowledge	4	0.839
2	AI_Benefits	4	0.886
3	Effect_Mrkt	6	0.925
4	Readiness	3	0.769
5	Challenges	7	0.828

These results indicate that the instrument used in this study is psychometrically sound.

Descriptive Statistics of Study Constructs

AI Knowledge

Students indicated moderate to high familiarity with AI, with means ranging from 3.33 to 3.46. The concept of artificial intelligence familiarity was rated the highest (M = 3.46, SD = 0.96), indicating that participants had a good conceptual awareness. Table 3 summarizes the item-level data on the AI Knowledge construct.

Table 3: Descriptive statistics for AI knowledge items

No	**Item**	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**	**Mean**	**SD**	**Rank**
1	I am confident in using the AI tools and also familiar with the concept	85	318	274	46	43	3.46	0.964	***1***

2	I have gained knowledge in using the AI tools	85	315	240	92	34	3.42	0.987	***2***
3	I have gained experience using AI tools and applications	77	279	271	99	40	3.33	0.998	***4***
4	I have utilized AI tools that are familiar and used in social media platforms	86	324	218	97	41	3.41	1.021	***3***

AI Benefits

There were positive perceptions about the usefulness of AI for students. The highest mean (M = 3.91, SD = 0.98) was attributed to the item stating that AI tools can help me get what I want more quickly, valued for the efficiency brought by AI. The results of AI benefits are given in Table 4.

Table 4: Descriptive statistics for AI benefits

No	**Item**	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**	**Mean**	**SD**	**Rank**
1	AI tools can help simplify tasks	211	356	137	30	32	3.89	0.988	***2***
2	AI tools can save my time and effort compared to other applications	199	347	153	44	23	3.86	0.969	***3***
3	AI tools can help me get what I want more quickly	216	352	138	30	30	3.91	0.982	***1***
4	AI tools can improve the	157	324	203	54	28	3.69	0.993	***4***

	efficiency of my work								

Effects on Marketing

Students agreed that AI enhances marketing outcomes, with the strongest agreement on:

- *"AI improves the quality of marketing products and services"* (M = 3.78)
- *"AI makes marketing more attractive"* (M = 3.78)

As shown in Table 5 the details students' perceptions of AI's impact on marketing (Table 5). These findings indicate strong perceived value of AI in marketing activities.

Table 5: Descriptive statistics for perceived effects of AI on marketing

No	Item	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	SD	Rank
1	I believe AI applications can improve the quality of marketing products and services	181	347	161	45	32	3.78	1.006	***1***
2	I believe AI applications can make marketing more attractive	167	354	180	40	25	3.78	0.953	***1***
3	I believe AI helps increase consumer engagement with products and services	147	369	172	48	30	3.72	0.972	***3***
4	I believe AI increases the quality of marketing content	152	340	190	50	34	3.69	1.005	***5***

5	I believe AI applications help increase followers on social media	167	334	181	60	24	3.73	0.989	***2***
6	AI adds high value to marketing content	140	335	199	63	29	3.64	0.994	***4***

Readiness to Use AI in Marketing

Students showed high readiness, especially regarding the belief that *"AI will play an important role in transforming marketing methods"* (M = 3.82). Their willingness to learn and use AI tools was also high (M = 3.65). Table 6 indicates the readiness results.

Table 6: Descriptive statistics for readiness to use AI in marketing.

No	**Item**	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**	**Mean**	**SD**	**Rank**
1	I am willing to learn and use AI tools in marketing	147	336	194	46	43	3.65	1.034	***2***
2	I believe AI will play an important role in transforming marketing methods	182	357	161	39	27	3.82	0.968	***1***
3	I currently use AI tools in marketing	98	249	232	134	53	3.27	1.104	***3***

Perceived Challenges

The most rated challenge among the variables is privacy and data security (M = 3.57), cost (M = 3.34) and ethical considerations (M = 3.33). The low Means of misinformation and inaccurate outcomes indicate that there is moderate yet significant concern. The problems are outlined in Table 7.

Table 7: Descriptive statistics for perceived challenges of AI adoption

No	**Item**	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**	**Mean**	**SD**	**Rank**

1	I have ethical concerns about adopting AI tools in marketing	71	276	294	88	37	3.33	0.964	***3***
2	The cost of AI applications and technologies is a major challenge for me	71	278	298	80	39	3.34	0.962	***2***
3	I have concerns about data security and privacy when using AI tools	124	309	245	55	33	3.57	0.986	***1***
4	Difficulty using AI technologies and applications is a major challenge for me	65	251	280	121	49	3.21	1.019	***6***
5	There is a lack of transparency when using AI applications in marketing	66	239	311	109	41	3.23	0.979	***5***
6	Using AI in marketing increases the likelihood of inaccurate results	58	198	302	165	43	3.08	0.998	*7*
7	Using AI in marketing increases the amount of	75	262	296	93	40	3.31	0.984	***4***

misleading information	

Correlation Analysis

The Pearson correlation coefficients were calculated to analyze the association between AI Knowledge, AI Benefits, Effects on Marketing, Readiness and Challenges. The analysis revealed:

- **Strong positive correlations** among key constructs:
  - AI Knowledge & Readiness: **r = 0.614***
  - AI Benefits & Readiness: **r = 0.639***
  - Effects on Marketing & Readiness: **r = 0.746***
- **Moderate positive correlations** with Challenges:
  - Challenges & Readiness: **r = 0.413***

Table 8 shows the Pearson correlation coefficients of the variables in the study. AI Knowledge was also associated with Readiness (r = .614, p < .001), meaning that as AI knowledge increases, so does the readiness to employ AI tools in marketing. Correlations between AI Benefits, perceived Effects on Marketing, and Readiness were also positive and statistically significant.

Table 8: Pearson correlation matrix of study variables

	AI_Knowledge	AI_Benefits	Effect_Mrkt	Readiness	Challenges
AI_Knowledge	—				
AI_Benefits	0.644***	—			
Effect_Mrkt	0.562***	0.702***	—		
Readiness	0.614***	0.639***	0.746***	—	
Challenges	0.297***	0.323***	0.420***	0.413***	—

Note. * p < .05, ** p < .01, *** p < .001

Independent Samples t-Test (Gender Differences)

Gender-based differences in perceptions were examined using an independent samples t-test (Table 9).

Table 9: Independent samples t-test results by gender

Item	Gender	N	Mean	SD	t	df	Sig. (2-tailed)
AI_Knowledge	male	252	3.45	0.797	0.922	764	0.357
	female	514	3.39	0.824			
AI_Benefits	male	252	3.99	0.905	3.432	764	<.001
	female	514	3.76	0.811			
Effect_Mrkt	male	252	3.81	0.912	2.068	764	0.039
	female	514	3.68	0.802			
Readiness	male	252	3.65	0.893	1.650	764	0.099
	female	514	3.54	0.838			
Challenges	male	252	3.21	0.769	-2.581[a]	764	0.010
	female	514	3.34	0.645			

The key findings:

- **AI Benefits:** Males reported significantly higher benefits (M = 3.99) than females (M = 3.76), $p < .001$.
- **Effects on Marketing:** Males perceived stronger effects (M = 3.81) than females (M = 3.68), $p = .039$.
- **Challenges:** Females reported slightly higher concerns (M = 3.34) than males (M = 3.21), $p = .010$.
- **AI Knowledge and Readiness:** No statistically significant gender differences.

One-Way ANOVA (Age Differences)

Welch's ANOVA was conducted to examine differences across age groups (Table 10). Significant differences were found only in **AI Benefits** (F = 3.753, p = .015), with students aged **31–40** showing the highest perceived benefits (M = 4.17). Other constructs showed no significant age-based differences.

Table 10: One-way ANOVA results by age group

Item	Gender	N	Mean	SD	F	df1	df2	P
AI_Knowledge	16 - 20	208	3.34	0.819	0.579	3	64.6	0.631
	21 - 30	499	3.43	0.807				
	31 - 40	39	3.43	0.817				
	more than 41	20	3.4	0.998				
AI_Benefits	16 - 20	208	3.81	0.933	3.753	3	66.7	0.015
	21 - 30	499	3.82	0.823				
	31 - 40	39	4.17	0.613				

	more than 41	20	3.76	0.879				
Effect_Mrkt	16 - 20	208	3.7	0.884	2.028	3	68.1	0.118
	21 - 30	499	3.71	0.844				
	31 - 40	39	3.92	0.58				
	more than 41	20	3.94	0.736				
Readiness	16 - 20	208	3.49	0.918	1.477	3	66.7	0.229
	21 - 30	499	3.6	0.843				
	31 - 40	39	3.72	0.61				
	more than 41	20	3.73	0.94				
Challenges	16 - 20	208	3.18	0.768	2.683	3	65.4	0.054
	21 - 30	499	3.33	0.654				
	31 - 40	39	3.43	0.691				
	more than 41	20	3.38	0.641				

One-Way ANOVA (Experience with AI Applications)

Highly significant differences were found across all constructs (all $p < .001$). Students with **high experience** consistently showed:

- Higher AI Knowledge (M = 4.04)
- Higher Benefits (M = 4.22)
- Stronger Effects on Marketing (M = 4.12)
- Greater Readiness (M = 4.01)

These results indicate that hands-on experience with AI strongly predicts positive perceptions and readiness for adoption. Welch's ANOVA was performed to test differences based on AI experience levels (Table 11).

Table 11: One-way ANOVA results by AI experience level

Item	Gender	N	Mean	SD	F	df1	df2	P
AI_Knowledge	High	137	4.04	0.832	96.55	2	325	<.001
	Low	248	2.91	0.765				
	Medium	381	3.51	0.628				
AI_Benefits	High	137	4.22	0.779	25.15	2	347	<.001
	Low	248	3.58	0.948				
	Medium	381	3.86	0.744				
Effect_Mrkt	High	137	4.12	0.868	25.62	2	333	<.001
	Low	248	3.46	0.900				

	Medium	381	3.76	0.725				
Readiness	High	137	4.01	0.907	30.88	2	337	<.001
	Low	248	3.28	0.853				
	Medium	381	3.62	0.766				
Challenges	High	137	3.39	0.818	7.27	2	327	<.001
	Low	248	3.16	0.703				
	Medium	381	3.35	0.617				

Summary of Key Findings

- results indicate high awareness and strong belief in the benefits of AI in marketing.
- Readiness levels were high, reflective of positive attitudes toward AI adoption.
- Privacy and ethical concerns remain present but do not significantly hinder readiness.
- Gender differences emerged in perceived benefits, marketing effects, and challenges.
- Experience with AI applications significantly influenced all constructs.
- Correlations confirm that knowledge, benefits, and perceived effects strongly predict readiness.

Discussion

In this study, the students' perceptions of artificial intelligence in the marketing sphere were examined by assessing their knowledge of AI, perceived advantages of artificial intelligence in marketing, perceived role in marketing, readiness to use AI tools, and perceived challenges. Overall, the findings indicate a positive response to AI in marketing, although ethical and practical concerns remain. These results contribute to the emerging trends in the empirical literature that indicate that individuals are becoming increasingly aware of how AI can be used as a useful instrument in marketing, alongside voicing their concerns regarding the wider realities of AI (Prentice et al., 2020; Huang & Rust, 2021; Binlibdah, 2024).

AI Knowledge and Readiness to Adopt AI

The results indicate moderate to high AI knowledge, especially regarding digital and social media uses, among students. Notably, AI knowledge had a close relationship with the willingness to embrace AI applications in marketing activities. This finding is consistent with existing empirical research that demonstrates that confidence in AI technologies and reduced uncertainty due to familiarity with AI technologies contribute to increased adoption intentions (Zhou et al., 2024; Aldossary et al., 2024). The relationship between educational and professional settings shows similarities as a higher level of technological awareness correlates with a greater behavioral intention to use AI systems (Chatterjee et al., 2021; Paschen et al., 2020). Theoretically, these results align well with the Technology Acceptance Model, which posits that informed users are more likely to view technology as helpful and form positive behavioral intentions (Davis, 1989; Kaplan & Haenlein, 2019).

Perceived Benefits and Marketing Effectiveness

Regardless of marketing, students in this study indicated that they see strong agreement in terms of efficiency, simplified tasks, and increased engagement as the main advantages of AI in marketing. Such impressions reflect the results of previous studies which show that AI usage raises the level of marketing performance by automating and personalizing marketing activities and using data to make decisions (Prentice et al., 2020; Davenport and Ronanki, 2018). There is also empirical evidence indicating that AI-based personalization leads to better customer engagement and satisfaction, thus increasing the marketing performance of digital platforms (Huang and Rust, 2021; Sharma and Kalla, 2024). Similarly, the same trends of benefit-based uptake have been cited in marketing professionals and managers, indicating that perceived usefulness continues to be a leading predictor of AI adoption by stakeholder groups (Binlibdah, 2024; Chatterjee et al., 2021). These results support the strength of TAM in explaining the adoption of AI in marketing settings.

Ethical Concerns and Perceived Challenges

Although students identified the advantages of AI, they had moderate concerns pertaining to ethical and practical issues, specifically those related to data privacy, data transparency, and truthfulness of content. This two-sided attitude aligns with current research that highlights the idea that ethical issues are not antithetical to the positive assessments of AI technologies but their companion (Gonçalves et al., 2023; Barari et al., 2024). Research studies related to marketing ethics have also shown that the risk of privacy invasion and the lack of transparency in algorithms can damage trust and cause a lack of desire to trust AI-based systems (Martin and Murphy, 2017; Longoni et al., 2019). Instead of being specific to students, comparative evidence shows that these concerns exist among consumers and practitioners, indicating that ethical risk perception is a more widespread issue regarding the adoption of AI in marketing (Rolando, 2024; Barari et al., 2024). These results demonstrate that it is necessary to place more ethical considerations in AI acceptance frameworks.

Demographic and Experiential Differences

It was also found that prior exposure to AI was a major factor in perception of all constructs where more experienced users reported greater levels of knowledge, perceived benefits, and preparedness. This is consistent with earlier experimental research which has demonstrated that experience enhances perceived usefulness and trust in AI systems (Zhou et al., 2024; Aldossary et al., 2024; Alainati et al., 2025). Interestingly, the intensity of recognising the challenges also rose with experience, which implies that they were able to evaluate the artificial intelligence technologies in a more advanced level. Equivalent disparities based on experience have likewise been discerned in investigations of AI adoption by professionals, with increased experience creating a more positive equilibrium between advantages and threat (Chatterjee et al., 2020; Chatterjee et al., 2021). This observation highlights the potential to use experiential learning to innovate knowledgeable uptake of AI and overcome gender inequalities (Al-Hunaiyyan et al, 2021).

Theoretical and Practical Interpretation

The results of the study provide empirical evidence that it is indeed feasible to apply the Technology Acceptance Model to elucidate the application of AI in the educational marketing setting. Moreover, the results broaden the scope of TAM by proving ethical concerns and perceived risks as important moderating variables that affect the desire to adopt AI. The necessity of introducing ethical and risk-related factors into acceptance engines to be more situational in adopting AI is also mentioned in more recent sources (Gonçalves et al., 2023; Barari et al., 2024).

Summary of Discussion

The discussion demonstrates that students have a positive and helpful perspective of AI in marketing but had a concern due to its ethical and practical concerns. Key contributors to readiness are reported to be knowledge and perceived usefulness (which is in line with TAM) and ethical concerns are reported as moderators. This realization helps to justify the existence of a balanced AI education, which is a blend of technical skills and moral awareness.

Conclusion

This study demonstrated the perceptions of artificial intelligence by students regarding marketing, their level of awareness of AI, their best expectations towards the expected benefits, marketing, their readiness to utilize AI tools, and their struggles with AI. According to a survey of 766 students, the findings illustrate that AI is accepted positively by students with a particular focus on the efficiency of AI in enhancing marketing effectiveness by making it easier and more efficient. In the meantime, there are some ethical and practical issues, in particular, theoretical privacy, openness, and validity, which are current and determine the attitude of students towards 36 AI technologies. The findings indicate that the level of AI knowledge and perceived benefits are strongly related to students' readiness to use AI tools to sell their products. The results correspond with the Technology Acceptance Model, as they indicate that familiarity with AI and perception of usefulness are effectively changing variables in terms of the intention to change behavior. It is also noteworthy that any perceived challenges are accompanied by positive ratings, including that students may assume a moderate stance on the benefits and negative threats. With a tangible concentration on AI implementation in the sphere of marketing, and students as the consumers of future marketing, this study broadens the research on the changes in AI adoption beyond the alternative-consumer and organizational lens. The results highlight the significance of combining technical skills and moral consciousness to advocate knowledgeable and sensible AI implementation in marketing practices.

Implications and Recommendations

Academic Implications

Academically, this research outcomes adds value to the existing body of literature in AI adoption through the demonstration of the practical applications of the TAM in educational

institutions in regard to marketing. The findings confirm that perceived usefulness and knowledge are core to readiness to adopt AI but also reveal that ethical issues and perceived obstacles are key elements that define attitude towards AI adoption. These dimensions are together in the same empirical model, which provides the study with the opportunity to answer the calls for more comprehensive ways of explaining AI acceptance. The findings are also applicable to marketing education since students exhibited the two variations of AI as an opportunity, and something to fear. This provocative insight drives the imaginative debate on AI preparedness forward and guides future research inquiry to a more advanced phase of assimilation to ethical and context-reliant forms of research, which are becoming more formal and obvious.

Practical Implications

The results highlight the need to incorporate AI tools and applications into marketing programs. The extent of exposure to AI-based marketing practices can turn the students into informed and skillful when it comes to their training, increasing their readiness to work in the AI-intensive environments. Nevertheless, that issues of morality emerge suggest that the education of AI cannot exist on technical proficiency alone. Furtherment of data privacy, open algorithms, and responsible use of AI should also be addressed in the context of curriculum development to educate people to be critical and ethical in thinking. To marketing practitioners and experts at the organization level, the findings demonstrated that success in implementing AI would not only be determined by the technological viability but also attitudes and perceptions towards AI. Well-organized training and explanations of the advantages and drawbacks of AI systems may help alleviate doubt and opposition, especially among specialists who are starting their careers in the industry.

Policy Implications

The results on the policy level indicate that it should be ensured that there are clear guidelines and systems of governance that would deal with the ethical risks of AI in marketing. Educational administrators and policymakers should collaborate in order to develop ethics in the use of AI, data confidentiality, and disclosure policies. These programs could allow responsible innovation and can also equip future advertising creatives to be able to deal with the ethical aspects of AI-based decision-making.

Summary of Implications

The results of the study point at the efficacy of moderate attitude towards the development and the application of AI in marketing, which implies the technical ability, moral responsibility and institutional favoritism. The stakeholders can develop reliable and sustainable AI adoption in marketing through a combination of education, practice and policy.

Limitations and Future Research

Although this study contributes to the existing knowledge, it has a few limitations. The study was based on the cross-sectional design, limiting the possibility to develop a causal factor between AI knowledge, perceived benefits, AI challenges, and readiness to utilize AI in marketing. As AI devices in marketing and education use continue to gain popularity, longitudinal studies can be used to determine how the perception of students changes over time. Second, the issue of the possible impact of the students on the analysis was not addressed since it was only one educational setting that was sampled, which could be a weakness in terms of extrapolating the results in other institutional, cultural, and regional contexts. It is also necessary to repeat the research in other countries, institutions and disciplines in the future to determine possible differences in the perceptions and willingness to accept AI. Third, the research used self-reported measures, which have the disadvantage of facing social desirability bias or any subjective interpretation of AI knowledge and experience by the participants. Future research can integrate the objective evaluation of AI competency or experimental research to monitor real experiences when interacting with AI tools in the marketing action. Also, although the present study used students as a future marketing practitioner sample, one can incorporate practitioners, educators, or managers into the study in the future to determine the variation in the perception of AI across different stakeholders. A more specific depiction of the dynamics of the AI adoption process could be achieved by considering moderating conditions including the digital literacy, institutional backing, and ethical awareness. And, as a last point, one can state that the study could be extended further with an addition of some other theoretical approaches like trust-based or risk-based and achieve more generalized impact of the problem of ethical concerns on the acceptance of AI. Considering the dynamic nature of AI technologies, empirical research will be a crucial part of the interpretations of the potential of AI in marketing education and practice.

Acknowledgment

This research was supported and funded by the Public Authority for Applied Education and Training in Kuwait, project number: **BS-24-05.**

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