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ASSESSING THE IMPACT OF AI PERSONALIZATION ON CUSTOMER EXPERIENCE: THE MODERATING INFLUENCE OF ETHICAL AI IN THE E-COMMERCE SECTOR IN JORDAN

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ABSTRACT

The current study aimed to examine the moderating role of ethical AI on the relationships between AI personalization (Product Recommendations, Dynamic Pricing, Content Customization, Conversational Interfaces, Behavioral Analytics) and customer experience in the e-commerce sector in Jordan. A questionnaire was developed to collect primary data, and 311 managers from the Amman Chamber of Industry responded to the questionnaire after it was uploaded online. SPSS was used to deal with the collected data, results indicated acceptance of the hypothesis, as it appeared that there was a moderating influence of ethical AI on the relationship between AI personalization and customer experience in the e-commerce sector in Jordan. The study recommended that e-commerce websites must incorporate transparent ethical AI protocols to make the site more transparent, fair, and to provide data regarding personalization goals. Further recommendations were presented in the study.

KEYWORDS: Customer Experience, Ethical AI, Content Customization, Conversational Interfaces, Behavioral Analytics, AI Personalization, E-Commerce, Jordan.

1. INTRODUCTION

The use of AI to personalize e-commerce experience has transformed the interaction with customers by providing personalized recommendations, dynamic pricing, and personalized content. Nevertheless, increased use of AI provokes essential ethical issues that directly affect customer loyalty and satisfaction. The concepts of ethics, privacy, transparency, fairness, and consent are vital factors that ensure personalization remains beneficial and does not impair the customer experience.

Customers would only want their personal information to be managed in a responsible manner when artificial intelligence systems are used to gather and process it in order to make a prediction or a recommendation. Transparency deficiency or a feeling of exploitation may result in customer anxiety, loss of confidence, and possible backlash. As an illustration, in case dynamic pricing becomes invasive or appears also discriminatory, users might become alienated instead of being engaged.

Ethical AI provides a feeling of safety, responsibility, and inclusiveness that builds a sense of security and respect among users. The customers will be more inclined to participate, repeat, and be able to stick with the company when they believe that AI is used to benefit them, not to manipulate their experience. In addition, ethical behaviors will help create credibility of the brand in the long term, particularly in competitive internet markets.

Ahmed and Aziz (2025) studied the customer perception regarding these AI-inspired recommendations, paying attention to such factors as Perceived Interactivity, Service Quality, Commitment, Trust, and Personalization. Based on a sample of a heterogeneous population of Klang Valley, Malaysia, the study will utilize PLS-SEM and Necessary Condition Analysis (NCA) using data of a heterogeneous sample. PLS-SEM is used to decipher complicated associations to forecast customer satisfaction whereas NCA is used to recognize the necessary circumstances to achieve favorable results in customer experience. The results show that there is a significant effect of Personalization on the satisfaction (path coefficient = 0.34), and Trust increases the effect of Perceived Interactivity (mediation effect size = 0.15). The service attributes and satisfaction are also moderated by expectancy confirmation ($b = 0.09$). The findings bring to focus the issue of increased individualization and strong trust measures in AI systems, and the strategies to enhance viewer retention and viewer satisfaction.

Bhuiyan (2024) examined how AI-based-

personalization chatbots and virtual assistants could enhance the experiences of customers in various forms of businesses. It examines whether artificial intelligence can customize goods, services, and marketing in accordance with the tastes of customers. The retail and hospitality sectors, along with the financial sector, are the focus of this paper. This paper examines how artificial intelligence is going to enhance retail virtual shopping bots and product suggestions. This paper explores how artificial intelligence (AI) chatbots can be used in the hotel business to provide personal booking options and suggestions. This paper examines how communications proposed by artificial intelligence and personalized financial advice can enhance customer service. The author of this study examines the practical applications of AI-based personalization and its advantages to customer experience through the tool of case studies and data analysis. The results can be discussed as an effort to demonstrate that AI can make their experiences personalized and interact with customers in diverse industries.

Vashishth *et al.* (2024) aimed at examining how AI-based content customization influences customer satisfaction, customer engagement, and online shopping conversion. The research design will entail a thorough examination of the available literature, case studies, and empirical data on the use of AI-powered content personalization performed by companies that have already adopted this strategy. The results of this paper indicate that the personalization of content using AI contributes greatly to customer experience in e-commerce marketing. Using AI algorithms, companies can gather and process a lot of data about customers: browsing history, buying behavior, and demographics. The personalized content recommendations, product suggestions and targeted marketing campaigns can be created using this data thus enhancing customer satisfaction because AI-driven content personalization provides customers with the relevant and timely information. E-commerce platforms have the chance to customize their offerings, promotional messages, and user interfaces by learning the individual preferences and needs of each client and thus making the shopping experience more personalized and conveying more interest. Moreover, AI algorithms are capable of dynamically adjusting the position of the content and its presentation according to the real-time interactions with a customer, therefore, increasing the conversion rates.

Lim and Kim (2025) explored the effects of AI-based personalization in online travel agencies

(OTAs) on the consumer trust and future interaction and examines the potential ethical issues about the perceived discrimination and privacy issues. This study examines the effects of revealing AI technology in personalization services and its impact on the response of consumers (Study 1) and the mediating impacts of perceived discrimination and privacy concerns. We find that AI ethical standards can minimize adverse impacts on perceived discrimination, thus enhancing the reactions of the consumers (Study 3). Consumer empowerment (i.e., in this scenario enabling users to switch off personalization) can be used to increase engagement, as it deals with the privacy concern (Study 4). The study is relevant to existing literature since it records the effects of AI-driven personalization on consumer responses. It also provides managerial informational support in the creation of ethical frameworks and empowering strategies that can consider AI application and its use with the expectation and usage behavior of consumers.

While earlier research has thoroughly investigated how AI personalization affects customer satisfaction and experiences across different industries and regions, there's still a notable gap in our understanding of how ethical AI plays a moderating role in these dynamics – especially in the e-commerce landscape of Jordan. Ahmad and Aziz (2025), Bhuiyan (2024), and Vashishth et al. (2024)

have delved into the direct impacts of personalization technologies like chatbots, content customization, and recommendation systems on how customers perceive and behave. Likewise, Lim and Kim (2025) highlighted the significance of ethical issues such as privacy and discrimination, yet they didn't empirically test ethical AI as a moderating factor. Additionally, these studies were carried out in various cultural and economic settings, like Malaysia and Korea, which limits their applicability to Jordan. Our research aims to fill this gap by exploring how ethical AI influences the relationship between specific AI personalization methods—including product recommendations, dynamic pricing, and behavioral analytics—and customer experience in Jordan's rapidly expanding e-commerce market.

From the above argument, we aimed in current study to shed the light on the moderating role of ethical AI on the relationship between AI personalization in terms of (Product Recommendations, Dynamic Pricing, Content Customization, Conversational Interfaces, Behavioral Analytics) and customer experience in the E-commerce sector in Jordan. We have carried quantitative methodology through a questionnaire that was self-administered by (311) managers operating within the Jordanian e-commerce sector. The relationship between variables was done through the following figure 1.

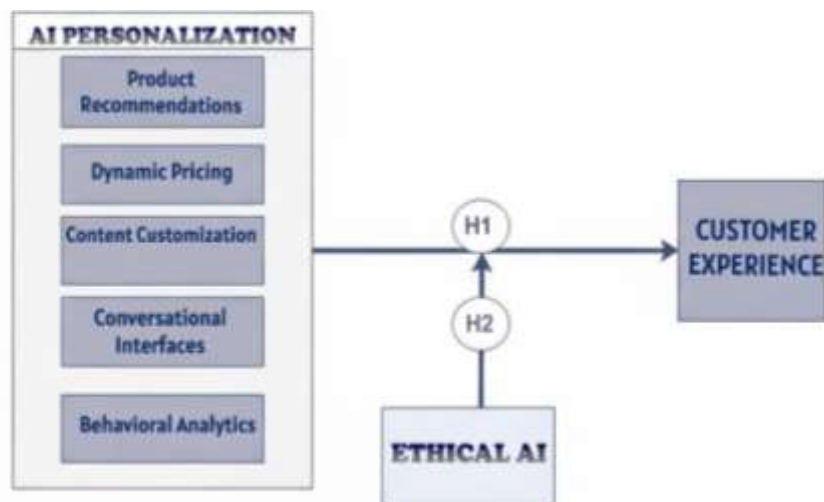


Figure 1: Conceptual Framework.

From the above framework, we were able to formulate the following hypotheses:

- H1:** AI personalization has an impact on customer experience in the e-commerce sector in Jordan
- H2:** Ethical AI moderates the relationship between AI personalization and customer

experience in the e-commerce sector in Jordan. This study was expected to come up with theoretical and practical implications. From a theoretical perspective, the research contributes to the theoretical background of the interaction between AI customization and customer experience by

proposing the concept of ethical AI as a moderator of the effect. That implies that ethical aspects of AI design and implementation are not the peripheral issues, but rather the elements to consider during the creation of the AI system and its successful implementation. The results enlarge the current models of customer experience in the digital space that employs ethical AI as a crucial variable, especially in the case of new markets such as Jordan.

From a practical perspective, ethical AI principles should be incorporated in the AI personalization strategies of practitioners in the e-commerce industry, including transparency, privacy of data, and fairness. By making sure that AI systems are effective but ethical at the same time, companies working in Jordan will be able to boost customer trust and satisfaction. This may result in better customer experience, brand loyalty and competitive advantage in a market that is becoming highly conscious of ethical issues related to the use of technology.

It is worth mentioning that current study was built on the premises of **Expectation Confirmation Theory (ECT)**. The theory explains customer satisfaction through the difference between what customers expect and what they experience. The study by Ahmad and Aziz (2025) demonstrates how expectancy confirmation affects service attributes and satisfaction through ECT. The research can employ ECT to evaluate how ethical AI affects customer satisfaction with AI personalization services in e-commerce platforms.

2. LITERATURE REVIEW

2.1. Customer Experience Cx

Gustafsson et al. (2024) argued that customer experience is one of the keys to business success. It mainly refers to the total perception and emotional reaction a customer develops when interacting with a company in all the touchpoints through which they encounter the company before, during, and after a purchase. It considers all the processes of a customer experience, such as the usability of a website, customer service, quality of products, personalization, and additional after-sale service. Customer experience in the modern competitive business environment is essential as it provides a positive and impeccable customer experience that generates brand loyalty, enhances customer retention, and promotes business development in the long-term (Mitrache et al., 2025; Hashem, 2025).

Rojabi (2025) noted that an effective customer experience strategy is not merely about satisfying the customers, but it is also about going out of their

expectations. This includes the analysis of customer needs, preferences and behavior based on data analysis and personal feedback. Wagh and Shahare (2024) added that the benefits of investing in the betterment of CX are frequently quantifiable, including the rise in the level of customer satisfaction, a rise in the rate of repeat purchase, and a rise in the rate of positive word-of-mouth referral.

On the other hand, Peruchini et al. (2024) referred that the use of technology is making a major impact in modern customer experiences. Such technologies as AI-based personalization, chatbots, and customer relationship management (CRM) systems help businesses to provide users with personalized and prompt communications. Nevertheless, with the advent of technology into the customer experience, ethical issues, including privacy and transparency of data, become more central. The more responsible and respectful the brands to their privacy, the more customers may trust and are likely to remain loyal to them (Königer and Gouthier, 2024).

Customer experience is not a support operation in the digital age it is a strategy differentiator. Companies with CX focus tend to outplay their rivals as they design valuable, relevant, and emotionally charged experiences that transform customers into promoters. In industries such as e-commerce, where physical experience is not prominent, it is necessary to provide a personalized, ethical and seamless customer experience in order to be successful (Wirtz et al., 2025). According to Wang et al. (2024), customer experience is a relationship-building process. The total of all the interactions affects the level of customer attitudes towards a brand. A company can build long-term relationships with its customers by matching business operations with the satisfaction and value customers expect, which will lead to customer satisfaction and profitability.

2.2. Ai Personalization

Ahmad and Aziz (2025) noted that the concept of AI personalization involves using artificial intelligence-based technologies to design content, recommendations, and services that target individual users based on their preferences, behaviors, and prior information. Contrary to the conventional means of personalization, AI-inspired personalization employs machine learning, natural language processing, and data analysis to provide real-time, dynamic, and personalization at scale (Akhtar et al., 2024; Beyari & Hashem, 2025).

Gujar (2024) argued that AI personalization in a general sense refers to a type of digital technology that is deployed to create digital experiences,

products, or services based on the needs, behaviors, and preferences of individual users in real-time. Westrén-Doll (2024) presented a more business-oriented definition stating that AI personalization is the strategic use of machine learning and data analytics to provide customers with personalized marketing messages, product suggestions, and user-interactions to increase the customer engagement, satisfaction and loyalty is referred to as AI personalization in the business context.

From a technical perspective, Ingriana and Rolando (2025) noted that AI personalization is a data model where artificial intelligence practices evaluate the user data, that is, their browsing history, purchase behaviors, and interaction patterns and dynamically shape the content, interfaces, and functionality to fit user-specific profiles.

From a customer focused definition or customer experience, AI personalization refers to the ability of the AI systems to generate very relevant and personalized customer experience based on user interactions and constant adjustment of the services, content, or product offerings to the changing personal preferences (Timimi et al., 2025).

In online shopping, AI personalization can help online stores to suggest their products, change the prices and use marketing messages to fit the specifics of a particular user profile (Raji et al., 2024). This does not only enhance the relevance of the customer journey but also enhances the engagement, the ratio of conversion and customer satisfaction. AI can process large volumes of user data- browsing history, purchase history, demographic data, etc. - to make predictions about what a customer wants to get next (Vallabhaneni et al., 2024).

According to Bhuiyan (2024), the power of AI personalization is that it is capable or rather will continue learning and evolving. The more data being collected the smarter the system will be and offers more accurate and meaningful experiences. Nevertheless, this also has ethical concerns, including biased algorithms and privacy of information. Companies should be careful that the principles of personalization are full of respect, honesty, and in accordance with the expectations of users (Ayeni et al., 2024). From another perspective, AI personalization will change the nature of the interaction between the business and its customers and bring more efficient, enjoyable, and relevant experiences to their lives, if it is carried out in an ethical and responsible way (Gatla, 2024).

2.2.1. Product Recommendations

Raji et al. (2024) stated that the product

recommendation systems run by AI examine the behavior and preferences, as well as previous purchases of users to propose products that are most relevant to individual customers. Such systems are based on algorithms like collaborative filtering or deep learning to recommend what a user is most likely to be interested in. According to (Zhang and Xiong, 2024) more interaction in e-commerce, more conversion rates, and customer satisfaction. Tailored suggestions assist in the formation of an easier shopping process, as one did not have to spend much time searching, and it has more chances of increasing decision-making (Vallabhaneni et al., 2024).

2.2.2. Dynamic Pricing

According to Vashishth et al. (2024), dynamic pricing involves the AI algorithms that help regulate the prices of products in real-time, depending on several factors including demand, buyer behavior, market trends, and competitor prices. Karunakaran et al. (2024) added that personalization enters the picture where the prices are maximized on a user or a segment depending on their purchase history, loyalty, and the willingness to pay. Dynamic pricing will maximize revenue and competitiveness, but it should be applied in a transparent manner so not to create the impression of unfairness (Awais, 2024).

2.2.3. Content Customization

Patil (2024) stated that when used in AI personalization, platforms can customize content, including homepage design, banners, email campaigns, and product displays, depending on preferences and behavior. Businesses can enhance engagement by displaying to each user content that is most relevant to him/her and motivate more interactions. Matharu et al. (2024) argued that this is particularly critical in such industries as media, retail and education where the relevance of the content directly affects the retention of users.

2.2.4. Conversational Interfaces

According to Chen et al. (2025), conversational AI, e.g. chatbots and virtual assistants, offers real-time, personalized interactions with the understanding of user intent and context. These interfaces can provide customized product recommendations, respond to select queries and take users down the customer path (Martins et al., 2024). Bhardwaj et al. (2024) stated that natural language processing (NLP) and machine learning are used to generate more human-like and beneficial interactions by personalization.

2.2.5. Behavioral Analytics

Ashrafuzzaman et al. (2025) saw that behavioral analytics is the gathering and assessment of information about the interaction between users and a platform, such as clicks, time on site, route, and so forth, to comprehend the preferences and forecast the behavior of users in the future. According to (Lazaroiu and Rogalska, 2024), AI utilizes this information to optimize personalization strategies, as a result of which every user will have a more personalized and interesting experience. The feedback that is given through this is continuous and enables the businesses to change swiftly with the evolving needs of the customers (Krishnan and Mariappan, 2024).

2.3. Ethics In AI

Karami et al. (2024) argued that due to the growing role of artificial intelligence (AI) in business activities, ethics are now more important than ever. Although AI has great benefits, including automation, personalization, and data-driven decision-making, it has also raised important questions of fairness, accountability, and transparency. According to Islam et al. (2024), data privacy is one of the main ethical issues. AI systems usually need large amounts of personal data to work efficiently. Companies should make sure to gather, store, and utilize this information in a way that is responsible and in accordance with the data protection laws, such as GDPR. The customers must be told how their data is being utilized and get a choice to withdraw.

Karami et al. (2024) saw that algorithm bias is another important problem. With the wrong type of training, AIs may reproduce or enhance existing biases when they are trained using biased or non-representative data. This may cause inequitable practices such as hiring, credit rating or targeting customers. In response, companies need to diligently audit their AI systems on a regular basis to check that they are bias-free, that the data they are fed with is diverse, and that they incorporate concepts of fairness in their designs (Rasool et al., 2025; Hashem et al., 2025).

On the other hand, Bell et al. (2024) argued that transparency is also vital. Hundreds of AI algorithms are black boxes, which make decisions that can hardly be explained. Ethical AI demands that businesses should prioritize explainability, particularly when the application is of high stake. The customers and the stakeholders must be made aware of the method of making AI-driven decisions.

From perspective of Kwong et al. (2024), accountability should be spelt out. Companies must

also have well-defined governance frameworks on the use of AI, where there must be human control and accountability in case of harm or malfunction of the technology. While Galiana et al. (2024) saw that ethical AI should be aligned to larger societal principles, e.g. inclusivity, accessibility, and sustainability. Companies that consider ethics when developing AI strategies minimize risk and gain the trust of customers, workers and regulators. Innovation is not impeded by ethical considerations, on the contrary, it is critical to make AI serve people fairly, responsibly, and transparently in business world (Rachmad, 2024).

3. METHODOLOGY

In current study, we have adopted the quantitative methodology as it was helpful in collecting primary data from a larger sample size. A questionnaire was developed for that sake, and (350) managers from Amman Chamber of Industry responded to the questionnaire online. The questionnaire consisted of two main sections, the first consisted of demographics (age, gender, experience). While the other section contained statements related to AI personalization including (product recommendations, dynamic pricing, content customization, conversational interfaces, behavioral analytics) in addition to statements related to ethics in AI. The questionnaire was uploaded online for primary data collection, after application process we were able to retrieve (311) properly filled questionnaires which indicated a response rate of (88.8%) as statistically accepted.

Statistical package for social sciences (SPSS) was used to deal with collected primary data. Frequencies and percentages were adopted to read through demographics. As for the questionnaire, we have depended on mean (μ) and standard deviation (σ) for each statement and hypotheses of study were analyzed depending on multiple regression and Hierarchal regression. Convergent validity (i.e. factor loading) of the questionnaire was tested by the researcher. Table 3 clearly and briefly summarizes the results of the tests. Finally, after careful consideration, it was decided that anything with a loading greater than 40% should be considered valid. Furthermore, a holistic view of the reliability of the scale was measured by CR, AVE, and Cronbach's Alpha. The reliability of the tool was tested using Cronbach's Alpha, which resulted in a value higher than 0.70, as shown in Table 1. This assessment supports the reliability and validity of the instrument for the study. The data collected during the questionnaires was analyzed using SPSS and

involved reliability, descriptive, and regression analysis of 311 managers. Hierarchical regression was used to investigate whether the relationship between AI personalization dimensions and

customer experience would be moderated using ethical AI and adding variables in steps and analyzing variations in the explanatory power.

Table 1: Cronbach's Alpha.

Variable	α	Composite Reliability (CR.)
Product Recommendations	0.91	0.935
Dynamic Pricing	0.906	0.933
Content Customization	0.899	0.928
Conversational Interfaces	0.914	0.936
Behavioral Analytics	0.896	0.925
CUSTOMER EXPERIENCE	0.942	0.956
ETHICAL AI	0.904	0.93

4. RESULTS

4.1. Demographics

Frequencies and percentages were calculated. It was seen that the majority of respondents were males

forming 70.1% of the sample with an educational level of BA forming 72.7%. Also, it appeared that the majority of respondents had more than 10 years of experience in the field, accounting for 44.4% of the total sample.

Table 2: Demographics.

		F	%
Gender	Male	218	70.1
	Female	93	29.9
Education	BA	226	72.7
	HIGH STUDIES	85	27.3
Experience	less than 5 years	121	38.9
	5-10 years	52	16.7
	above 10 years	138	44.4
	Total	311	100.0

4.2. Questionnaire Analysis

Mean (μ) and standard deviation (σ) were calculated for each statement. Results indicated that respondents had positive attitudes towards the variables of study, as all statements scored a mean

that was higher than mean of scale 3.00. This matched what arbitrators announced regarding the validity of questionnaire items. The variables studied in the study were viewed positively by the respondents. The statistical analysis of all parameters in this study yielded results that exceeded the mean value of 3.00.

Table 3: Questionnaire Results.

Statement	Factor Loading	μ	σ	AVE
AI depends on content-based filtering	.797	3.318	1.430	0.744
It can suggest items based on behavior of customers	.944	3.293	1.303	
It is able to increase relevance and boost satisfaction	.931	3.264	1.208	
AI can increase loyalty by avoiding choice overload	.856	3.280	1.214	
It avoids bias and ensures fairness	.773	3.286	1.188	
Product Recommendations		3.288	1.091	0.737
AI is able to adjust prices in real-time	.861	3.241	1.195	
It is able to do inventory through predictive analytics	.928	3.196	1.011	
It personalizes values and perceptions	.908	3.193	.965	
It complies with regulations like GDPR	.879	3.312	.968	
It has the ability to prevent discrimination	.700	3.476	.996	0.721
Dynamic Pricing		3.284	.879	
AI can generate tailored emails	.843	3.309	1.004	

Through generative AI, site layouts can be hyper-personalized	.893	3.405	1.005	
Hyper-personalization can improve engagement	.882	3.428	.964	
It can generate higher email rating	.812	3.177	1.174	
It has the ability to make experiences more intuitive	.814	3.158	1.193	
Content Customization		3.295	.905	
AI chatbots can provide real-time voice assistant	.833	3.418	1.127	0.748
It has the ability to boost satisfaction	.913	3.367	1.038	
It can avoid manipulative interactions	.830	3.328	1.048	
It can autonomize empathy	.880	3.299	1.002	
It enhances responsiveness	.867	3.514	.919	
Conversational Interfaces		3.385	.887	
AI personalization can analyze patterns for proactive features	.768	3.244	.911	0.713
There is a space for virtual try-ons	.746	3.228	1.114	
It can foster trust	.918	3.225	1.075	
Ethical data are useful for positive experiences	.895	3.428	1.013	
It can anticipate customer needs	.882	3.167	.956	
Behavioral Analytics		3.246	.858	
AI came as an approach to increase CX	.954	3.273	1.059	0.814
CX is an integral part of AI personalization	.938	3.476	.986	
When increased, personalization can develop CX	.764	3.215	.941	
AI appeared in order to take CX to another level	.931	3.354	1.027	
CX is essential to the success of sectors in general	.912	3.569	.934	
CUSTOMER EXPERIENCE		3.377	.893	
AI avoids bias	.783	3.328	.938	0.729
It can develop the ethical practice of many customer-related issues	.764	3.312	1.137	
AI is the best approach to guarantee the highest level of ethics	.923	3.289	1.095	
AI can guarantee the best level of trust due to its ability to avoid manipulation	.897	3.492	1.022	
AI increases trust through its ethical efficiency	.891	3.251	.988	
ETHICAL AI		3.334	.883	

4.3. Hypotheses Testing

Multiple regression was employed to test the study's hypotheses. It was seen that the F value was statistically significant at the 0.05 level, according to multiple regression analysis. This showed that AI

personalization has an impact on customer experience in the e-commerce sector in Jordan. A correlation coefficient (R) of 0.882 indicated a high correlation, with 77.8% of the variance in the dependent variable explained by the independent variables.

Table 4: H1 Results.

H1: AI personalization has an impact on customer experience in the e-commerce sector in Jordan									
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R	R ²	F	
	B	Std. Error	Beta						
1	(Constant)	-.105	.114		-.916	.360	.882	.778	213.938
	Product Recommendations	.058	.027	.070	2.106	.036			
	Dynamic Pricing	.084	.039	.083	2.140	.033			
	Content Customization	.093	.037	.094	2.494	.013			
	Conversational Interfaces	.306	.044	.304	7.011	.000			
	Behavioral Analytics	.516	.040	.496	12.772	.000			

Results of Hierarchical Regression mentioned in Table 5 showed that there was a statistically significant influence of AI personalization on customer experience in the e-commerce sector in Jordan, with a value of (R² = 0.67, p≤0.05). In the

second phase, the Ethical AI variable was introduced, and it was discovered that it contributed Δ R² = 21.6 % of the overall interpretation variable, which is a substantial number. In the third phase, the interaction between Ethical AI and AI

personalization variable was introduced, and it was discovered that it contributed $\Delta R^2 = 0.4$ % of the overall interpretation factor, which is a substantial number. That was, Ethical AI moderates the

relationship between AI personalization and customer experience in the e-commerce sector in Jordan.

Table 5: H2 Hypothesis.

H2: Ethical AI moderates the relationship between AI personalization and customer experience in the e-commerce sector in Jordan									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.819 ^a	.670	.669	.51349	.670	628.095	1	309	.000
2	.941 ^b	.886	.885	.30273	.216	581.021	1	308	.000
3	.943 ^c	.890	.889	.29806	.004	10.724	1	307	.001
ANOVA									
Model		Sum of Squares	df	Mean Square	F	Sig.			
1	Regression	165.609	1	165.609	628.095	.000 ^b			
	Residual	81.474	309	.264					
	Total	247.082	310						
2	Regression	218.856	2	109.428	1194.054	.000 ^c			
	Residual	28.226	308	.092					
	Total	247.082	310						
3	Regression	219.809	3	73.270	824.743	.000 ^d			
	Residual	27.274	307	.089					
	Total	247.082	310						

5. DISCUSSION

Current study aimed to examine the moderating role of ethical AI on the relationship between AI personalization in terms of (Product Recommendations, Dynamic Pricing, Content Customization, Conversational Interfaces, Behavioral Analytics) and customer experience in the E-commerce sector in Jordan. A questionnaire was developed to collect primary data, and (311) managers from Amman Chamber of Industry responded to the questionnaire after it was uploaded online. SPSS was used to deal with the collected data, results indicated that acceptance of hypothesis as it appeared that there was a moderating influence of ethical AI on the relationship between AI personalization and customer experience in the E-commerce sector in Jordan. In addition to that, it was seen that AI personalization has an influence on customer experience through aspects including (Product Recommendations, Dynamic Pricing, Content Customization, Conversational Interfaces, Behavioral Analytics). The highest of these aspects appeared to be behavioral analytics with $B = .516$. Behavioral analytics refers to the gathering and processing of user behavior data including clicks, scrolls, duration on pages, and navigation patterns in order to tell what customers like, hate, and want. AI then uses this information to make predictions about the customer and shape the customer experience based on it. As an illustration, when a customer often sees green products, the system can be configured to

focus on displaying green products. It is this active personalization that can result in a seamless and anticipatory experience, which can be quite delightful to the customers as they are preemptively addressed with their needs being met even before they can express them. This agreed with Ashrafuzzaman et al. (2025) who noted that behavioral analytics therefore enables the companies to build smarter, more dynamic experiences that adapt with the customer.

With $B = .306$ conversational interfaces came in the 2nd rank in influence. Conversational interfaces (AI-controlled chatbots and voice assistants) provide interactive support systems, which can be as interactive as an actual human conversation. These interfaces improve customer experience by giving them immediate feedback on their queries and in decision making, in addition to effective solutions to the problems. When customized using customer data, these tools can welcome the user by name, remember the previous interactions, and provide personalized assistance that is easy to use and human-like. This agreed with Chen et al. (2025) arguing that such high degree of personalization and responsiveness not only enhances satisfaction but also provides trust and fosters further interaction with the brand.

Content customization came in the 3rd rank with $B = .093$. Customization of the content entails showing a customer information, offers, and images that appeal to their needs, past experience, and

actions on a webpage or application that is optimally done using AI, which prevents the digital experience to be dull and irrelevant. It does not only assist users to locate what they are interested in with less effort but also creates a stronger emotional attachment to the brand. This agreed with Patil (2024) arguing that individualized content will decrease the amount of information overload and the chance of conversions will rise since customers will more likely react to those messages that are tailored to their interests and needs.

In the 4th rank came dynamic pricing scoring a $B = .084$. Dynamic pricing is an AI-based pricing that adapts the real-time prices based on numerous factors including demand, customer behavior, existing market conditions and competitors' prices. This strategy has the potential to enhance customer experience through competitive prices, personalized discount offers, or timely offers that make them feel personal in their respective needs.

Dynamic pricing can positively affect the perceived value and trust when it is done in a fair and transparent way. But when not handled with a lot of care, it could result in customer dissatisfaction, particularly when the users are of the opinion that they are being overcharged. This agreed with Vashishth *et al.* (2024) stating that the transparent and ethical implementation will be the secret of the positive customer experience.

The least influential factor was product recommendation with $B = .058$. The systems based on AI product recommendations contribute greatly to customer experience by offering users products that are closely related to their likes and habits, as well as their interests and preferences.

The analysis of such data as browsing history, purchase behavior, and demographics allows AI to determine what their customer is most likely to be interested in. This saves customers time and effort in searching to get items so that their shopping experience is more enjoyable and quicker. Raji *et al.* (2024) agreed with these results adding that individualized suggestions make customers more content too; they feel that they are heard and taken care of and as a result, they might become more involved and loyal to the brand.

6. CONCLUSION AND RECOMMENDATIONS

This paper examined how ethical AI can moderate the relationship that exists between AI personalization and customer experience in the Jordan e-commerce industry.

The results of the research assisting 311 managers

found a significant positive impact of ethical AI on the positive effects of AI personalization on customer experience. Behavioral analytics was most influential application of personalization, then conversational interfaces, content customization, dynamic pricing and product recommendations. The results demonstrate that the ethical implementation in AI systems is valuable because it generates trust and provides fairness, particularly in such a sensitive field as pricing and data usage. This conclusion too reaffirms that AI-led personalization, when appropriately handled, can be used to greatly add to the customer experience, making it more personal, smooth, and gratifying. Ethical AI will be important in the future as e-commerce expands, making sure that technological progress can meet consumer demands and remain dependable and trustful, especially in culturally sensitive markets such as Jordan.

From results and conclusion, this current study recommends the following:

- The e-commerce websites must incorporate transparent ethical AI protocols to make the site more transparent, fair, and data protection regarding personalization goals
- A business must invest in sophisticated behavioral analytics to know and predict the needs of a customer.
- Ongoing training of managers and employees in responsible use of AI ethics will help to create responsible applications and earn more customer trust.

As future recommendations, researchers could contrast the moderating nature of ethical AI in different countries to determine cultural determinants of AI acceptance. In addition, consider the perception of customers regarding ethical AI to be incorporated in the understanding of the managers and show a complete picture. The future research can reinforce the conversation by incorporating information on consumers at the individual level by surveys, interviews or monitoring the behavior of real e-commerce users. Integrating the views of managers with the perceived experience of customers about ethical.

AI and personalization would offer a more comprehensive and validated perspective on the true effects of AI activities on customer experience.

It is worth mentioning here that current study was limited to the fact that data collected in the study was only collected among the e-commerce managers that might be inaccurate about the real experiences or perceptions of the final consumers.

The results are only applicable to the e-commerce

sector in Jordan and cannot be easily generalized to other sectors or regions unless proven.

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