
THE IMPACT OF ARTIFICIAL INTELLIGENCE (AI) ON OMNICHANNEL CUSTOMER EXPERIENCE



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Abstract

This research aims to determine the impact of Artificial Intelligence (AI) on Omnichannel Customer Experience (OCX). This research is quantitative with surveys as the data collection method. Data collection for this research was carried out on all Indonesian people. The data collection method uses an online questionnaire via Google Form which is obtained directly from the field and data collection is only carried out once and only represents at that time or cross-sectionally. The study collected data from 431 respondents in Indonesia. Hypothesis testing was performed using SEM-PLS with the SmartPLS software. The findings of this study suggest that dimension of AI can enhance the omnichannel customer experience.

Keywords: Artificial Intelligence, Omnichannel Customer Experience

INTRODUCTION

In the era society 5.0, the business world is rapidly evolving, leading to a shift towards digitalization. Technological advancements have replaced many traditional jobs with automation, significantly impacting people's livelihoods (Sulistyowati et al., 2023). This digital transformation has encouraged business actors to meet consumer needs with various digital strategies, such as managing production process planning, marketing strategies, product development and innovation, supply chains, and others (Yusufadz & Rosyidin, 2022). Currently, ten technologies are developing rapidly in the world, such as IoT (Internet of Things), Quantum Computing, Biometrics, AI (Artificial Intelligence), Serverless Computing, 5G (Fifth Generation), Robotics, Blockchain, AR/VR, and Natural Language Processing. Of the ten developing technologies, Robotics and AI technology are the most rapidly developing in the business world, impacting both small and large businesses. The changes in technology have an impact on the mindset of the business world and the way the business world works so that it continues to exist today.

One of these developing technologies is AI. In general, AI is defined as a machine used to process and convert data into information designed to imitate human capabilities (Dwivedi et al., 2021; Paschen et al., 2019). AI can master digital technology which is expected to have an impact on business in the next few years (Calvo et al., 2023). Nowadays AI can be found everywhere, for example in mobile phones, such as Apple's Siri, Microsoft's Cortana, and Google Home. These applications can be used to set alarms, call someone, and even open applications according to user commands (Daqar & Smoudy, 2019). Without realizing it when buying a product online AI will be in almost all products or services online. AI technology is usually used by companies to facilitate the company in the production process or marketing distribution and to facilitate managing customers. The use of AI in companies includes various methods such as being used for chatbots, content creation, and customer insights (Ameen et al., 2021). In this case, it can be said that AI can replace humans to manage a business. In addition, AI technology can provide product recommendations and provide customer preferences when customers are looking for information they need. The existence of AI can be beneficial for companies such as improving company performance, reducing costs, increasing flexibility, and making customer interactions more efficient.

One of the benefits of AI technology is to make customer interactions more efficient. Where AI technology can facilitate company interactions with customers so as to provide high customer experience expectations. This happens because AI changes the way companies interact with customers so that it has the potential to improve the company's relationship with customers to be even better (Ameen et al., 2021). The existence of various kinds of customer requests means that companies need to find ways to continue interacting with customers effectively and efficiently, namely by connecting to various different channel sources, one of which is omnichannel (Shi et al., 2020).

Omnichannel is a series of sales and marketing strategies that use all available channels, both online and offline. Omnichannel makes it easier for sellers to manage channels together in one system. Omnichannel can provide a smooth shopping experience for consumers across all channels. Currently, the use of omnichannel in the business world is very widespread, especially in the fashion sector. The concept of an omnichannel shopping experience provides a broader perspective on how customers' shopping intentions are influenced and move through channels while searching for goods or services to meet their needs (Verhoef et al., 2015). Consumers can choose which channels to use to shop with different channels. However, the many channels, touchpoints, and technological advances involved in an omnichannel retail strategy have led to a split in perspective on the omnichannel customer experience (Chen et al., 2021). Previous research has stated that AI can improve the omnichannel customer experience because it will facilitate purchases across multiple channels (Calvo et al., 2023). In addition, AI also makes it easy for customers to assess the quality of a product or service, adjust their commitment to a product or service, and spread their entire experience with AI. On the other hand, AI technology reduces direct interaction between sellers and buyers. In this case, the possibility of the presence of AI technology can also reduce the omnichannel customer experience, causing ineffectiveness. Therefore, it is still not consistent with certainty how AI affects the omnichannel customer experience. In this case, it is necessary to explore how AI affects the omnichannel customer experience.

Research on the influence of AI on omnichannel is still unclear whether the influence is positive or negative. If AI does have a negative influence, then business actors need to

change their omnichannel strategy to replace AI with ordinary human power. But if the influence is positive, then business actors can develop AI to continue to help make it easier to manage their company. Therefore, this study will further explore AI and its influence on the omnichannel customer experience.

Previous studies have tested how AI influences the omnichannel customer experience (Calvo et al., 2023). However, this study used a qualitative study which was only based on the perspectives of a few people which could be biased. In addition, this study only took the positive side of AI's influence on the omnichannel customer experience but did not consider its negative effects. The suggestion from this study also states that further research needs to use quantitative methods to analyze the influence of AI on the omnichannel customer experience and deepen its effects. In this case, this study will test how AI influences the omnichannel customer experience, especially in the fashion world.

REVIEW OF LITERATURE

Artificial Intelligence (AI)

Artificial Intelligence (AI) is an artificial intelligence that is currently being utilized, especially in the business sector. Previous research stated that there are five types of AI (Pantano & Scarpi, 2022). The five types are: 1) Logic-mathematical intelligence. This intelligence is the first intelligence integrated into AI to solve complex calculation analysis. In this intelligence, AI will make decisions independently based on the data that has been collected. Almost similar to humans, this intelligence can analyze problems and provide solutions according to the situation and data collected; 2) Visual-spatial intelligence. This intelligence is related to AI's visual-spatial perception in understanding objects. This is related to psychomotor abilities. In this intelligence, AI can identify patterns, spatial appearances, and others related to visuals; 3) Social intelligence. This intelligence is intelligence where AI has social empathy in several contexts such as in health services, entertainment services, and others. In this intelligence, AI is associated with the ability to interact with humans and understand human emotions; 4) Verbal-linguistic intelligence. This intelligence is related to understanding human language. This is usually found in chatbots, voice assistants, and others; 5) Processing speed intelligence. This intelligence assesses how far

AI's ability to process data quickly and repeatedly. This usually involves simple data and does not involve quantitative reasoning related to mathematics, visuals, and verbals.

This study only used four intelligences found in AI, namely visual-spatial, social, verbal- linguistic, and processing speed because mathematical logic is less appropriate to use to test its impact on the omnichannel customer experience.

Omnichannel Customer Experience

In the business world, the industry has changed from monochannel to multichannel and then again to omnichannel (Shi et al., 2020). Monochannel refers to sales with only one channel, for example a physical store. As the internet develops, sellers start changing multichannel or online and offline channels. Then with the development of technology, sellers start integrating their online channels into omnichannel, where omnichannel is an integrated channel from various online and offline channels. Omnichannel is defined as an integrated channel that makes it easy for customers to shop in an ecosystem (Shen et al., 2018). According to (Shi et al., 2020) there are five dimensions in omnichannel, namely: 1) Connectivity, namely the extent to which content and information in various channels are interconnected; 2) Integration, namely the extent to which customers view the entire system as integrated across channels; 3) Consistency, the extent to which customers feel consistent across channels; 4) Flexibility, the extent to which customers get flexible choices across channels; 5) Personalization, the extent to which customers perceive that the seller pays personal attention.

RESEARCH METHOD

This study uses a quantitative approach with a data collection method using an online questionnaire via Google Form which is obtained directly from the field and the data collection is only done once and only represents at that time or cross-sectionally. The population in this study is the entire community in Indonesia so as not to cause bias. Due to limitations in taking the entire population, this study uses a sample for research. The sampling technique for this study uses nonprobability sampling, namely purposive sampling. The purposive sampling technique is used because researchers choose samples based on certain criteria (Schindler, 2019). The criteria used in taking samples for this study are Indonesian people who have bought fashion products online (more than one e-commerce)

and offline with the same store. Furthermore, regarding the adequacy of the required number of samples, in general, researchers will not take samples of less than 50 people and it is better to take samples of more than 100 people (Hair et al., 2014). The total sample obtained by researchers was 440 respondents from all over Indonesia. However, the researcher carried out data cleansing of respondents who did not meet the criteria so the total number of respondents was 431 respondents. This research test used the SEM-PLS method with the SMART- PLS software.

RESULTS AND DISCUSSION

Validity Test

In the validity test, it can be seen from the AVE value and the loading factor value. An indicator can be said to be valid when it has an AVE value ≥ 0.5 and a loading factor value of 0.50 to ≥ 0.70 (Neuman, 2014). Table 1 below shows the results of the validity test where all constructs can be declared valid.

Table 1
Uji Validitas

Variable	Instrument	Validity test		Conclusion
		<i>Loading Factor</i>	AVE	
AI	X1.1	0.836	0.616	Valid
	X1.2	0.769		Valid
	X1.3	0.759		Valid
	X1.4	0.763		Valid
	X1.5	0.795		Valid
	X2.1	0.737	0.581	Valid
	X2.2	0.750		Valid
	X2.3	0.756		Valid
	X2.4	0.775		Valid
	X2.5	0.790		Valid
	X3.1	0.741	0.529	Valid
	X3.2	0.719		Valid
	X3.3	0.703		Valid
	X3.4	0.727		Valid
X3.5	0.726	Valid		
X3.6	0.717	Valid		
X3.7	0.724	Valid		

	X3.8	0.749	—	Valid
	X3.9	0.722		Valid
	X3.10	0.746		Valid
	X4.1	0.775		Valid
	X4.2	0.769		Valid
	X4.3	0.782	0.611	Valid
	X4.4	0.781		Valid
	X4.5	0.800		Valid
	Y1.1	0.752		Valid
	Y1.2	0.760		Valid
	Y1.3	0.764		Valid
	Y1.4	0.738		Valid
	Y1.5	0.753		Valid
	Y1.6	0.717		Valid
	Y1.7	0.750		Valid
	Y1.8	0.754		Valid
	Y1.9	0.726		Valid
	Y1.10	0.729		Valid
	Y1.11	0.737		Valid
OCX	Y1.12	0.747	0.543	Valid
	Y1.13	0.706		Valid
	Y1.14	0.733		Valid
	Y1.15	0.718		Valid
	Y1.16	0.747		Valid
	Y1.17	0.773		Valid
	Y1.18	0.730		Valid
	Y1.19	0.734		Valid
	Y1.20	0.764		Valid
	Y1.21	0.740		Valid
	Y1.22	0.703		Valid
	Y1.23	0.701		Valid
	Y1.24	0.700		Valid

Source: Processed Primary Data, 2024

Reliability Test

Reliability test is a measurement to see the level of consistency of a construct of a variable (Hair et al., 2014). A construct can be said to be valid if the Composite Reliability value and Cronbach's Alpha value ≥ 0.70 . Table 2 shows that all Composite Reliability values and all Cronbach's Alpha values are more than 0.70, meaning that all variables are said to be reliable.

Table 2
Reliability Test

Variable	Cronbach's Alpha	Composite Reliability	Conclusion
AI (X1)	0.844	0.889	Reliable
AI (X2)	0.820	0.874	Reliable
AI (X3)	0.901	0.918	Reliable
AI (X4)	0.841	0.887	Reliable
OCX	0.963	0.966	Reliable

Source: Processed Primary Data, 2024

Hypothesis Test Result

The hypothesis test results can be seen in Figure 1.

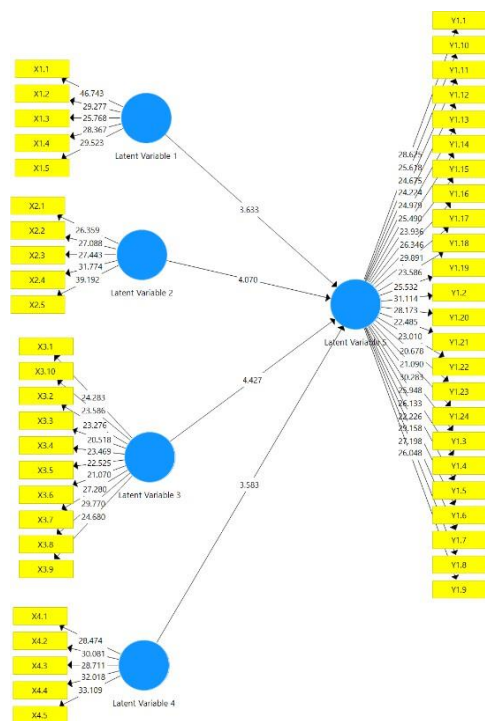


Figure 1
Hypothesis test

The summary of the results of the hypothesis testing can be seen in table 3 below:

Table 3
Hypothesis Testing Results

Hypothesis	Original Sample	P value	Conclusion
H ₁ : The Impact of Visual-spatial (AI) on Omnichannel Customer Experience	0.215	0.000	Accepted

H ₂ : The Impact of social (AI) on Omnichannel Customer Experience	0.242	0.000	Accepted
H ₃ : The Impact of verbal-linguistic (AI) on Omnichannel Customer Experience	0.304	0.000	Accepted
H ₄ : The Impact of Speed of Answer (AI) on Omnichannel Customer Experience	0.221	0.000	Accepted

From table 3 it can be seen that all hypotheses are accepted. The first hypothesis shows that the p- value is $0.000 < 0.05$ and the original sample is 0.215, meaning that visual-spatial (AI) has a positive and significant effect on omnichannel customer experience. The second hypothesis shows that the p value is $0.000 < 0.05$ and the original sample is 0.242, meaning that social (AI) has a positive and significant effect on omnichannel customer experience. The third hypothesis shows that the p-value is $0.000 < 0.05$ and the original sample is 0.304, meaning that verbal linguistic (AI) has a positive and significant effect on omnichannel customer experience. And the fourth hypothesis shows that the p-value is $0.000 < 0.05$ and the original sample is 0.304, meaning that the speed of answering (AI) has a positive and significant effect on omnichannel customer experience.

The Impact of Visual-spatial (AI) on Omnichannel Customer Experience

The visual-spatial influence contained in AI can improve the omnichannel customer experience. The AI system used in omnichannel makes it easier for sellers to integrate omnichannel across various e-commerce channels (Calvo et al., 2023). With this visual-spatial intelligence, AI will work to identify patterns, and understand objects, and all tasks that involve visuals. Sellers will apply AI to their omnichannel applications, especially in visual-spatial intelligence. Meanwhile, customers can take advantage of this artificial intelligence by visiting various e-commerce that the seller has integrated. Customers search based on images and match product items with images clearly (Srivastava, 2021). So that the products desired by customers will be more similar or more following what the customer wants. One example of visual search is visual search on Shopee which allows customers to select something in a photo, then ask the AI on Shopee to display similar products.

The Impact of social (AI) on Omnichannel Customer Experience

The most well-known AI system by consumers associated with omnichannel is chatbots. Chatbots are artificial intelligence used to communicate with humans, usually used

to answer questions related to problems and then provide solutions. Some sellers use chatbots on omnichannel to replace humans as customer service because chatbots are considered more effective in serving customers. Currently, even chatbots can respond and communicate well with humans, understand human emotions, and can understand what humans feel or it can be said that AI can be social just like humans. This study found that the social nature of AI can improve the omnichannel customer experience. In this case, the social nature of AI can perceive, understand, and respond to human feelings, thoughts, behavior, and experiences in several e-commerce in an integrated manner (Basuki & Febrianta, 2024). The social response in AI bridges the psychological gap between humans so that the response in AI will improve the customer experience (Chi & Vu, 2023).

The Impact of verbal-linguistic (AI) on Omnichannel Customer Experience

Verbal linguistik merupakan kecerdasan buatan yang terdapat pada AI, yang berkaitan dengan pemahaman bahasa manusia. Hal ini biasanya terdapat pada chatbots dan asisten suara. Biasanya penjual akan menerapkan asisten suara dan chatbots pada omnichannel dari berbagai ecommerce agar memudahkan pelanggan dalam pencarian produk dan juga dapat mengatasi permasalahan yang dibutuhkan pelanggan. Biasanya pelanggan dapat menggunakan kecerdasan verbal linguistik ini pada asisten suara terutama pada pencarian produk. Dalam penelitian ini ditemukan bahwa verbal linguistik yang terdapat pada AI dapat meningkatkan pengalaman pelanggan omnichannel karena adanya hal tersebut akan lebih memudahkan pelanggan dan membuat waktu lebih efektif dan efisien.

The Impact of Speed of Answer (AI) on Omnichannel Customer Experience This intelligence assesses how far AI's ability to process data quickly and repeatedly. The system in AI can collect, evaluate, and assess data at a faster speed than humans (Khrais, 2020). Sellers will integrate via omnichannel and utilize several features in e-commerce to apply this intelligence, such as chatbots. So that this can be utilized well by customers.

CONCLUSION

This study examines how AI affects OCX. Previous research with qualitative studies found that AI increases OCX but its benefits for consumers are not very clear (Calvo et al., 2023). This study uses a quantitative study which found that several dimensions in AI have a positive and significant effect on OCX. This bridges the gap from previous studies that have

not been answered. There are several dimensions in AI that are applied to omnichannel such as visual-spatial intelligence, social intelligence, verbal-linguistic intelligence, and speed of response intelligence that can increase OCX. The benefits that can be taken by sellers or managers from this study are being able to apply AI in an integrated omnichannel because it will make it easier for customers to shop and increase customer efficiency and effectiveness. Suggestions for further research may be able to test more specifically how chatbots affect OCX because several dimensions in AI are applied in chatbots.

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