The Role of Personalized System on Customer Experience

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Abstract— **In business industry, customer experience holds a crucial role, which has an impact on customer purchase intention and behavior that can lead into the succession of business. The implementation of AI especially for personalization provides a positive customer experience. Personalization works by reading customer profiles then filtering and adjusting consumer needs and interests. Personalization system used as the solution to help the business know their customer behavior by their pattern in the search keyword and the history of customer purchases. However, this system can be negative for some people due to the leaking of potentially personal data to the service provider. In this paper, we use hybrid method contains a combination of two methods which are quantitative and qualitative methods with the 50 target sample respondents and distributed using Google Form.**

Keywords— Artificial Intelligence, Personalization, Customer Experience, Implementation of AI, Customer behavior

I. INTRODUCTION

Artificial Intelligence or what we often know as AI is one of the technology sectors that has widely improved. Even without us knowing AI has advanced the world, especially when the pandemic COVID-19 happened, the usage of AI speeds up through integrates information, analyses data, and uses the resulting insights to improve decision making (Victor, D.G., 2022). Therefore, it is not surprising that now AI is a technology that is widely impactful and has spread to various sector.

Implementation of industry 4.0, consists of 5 sectors that become the main focus in the use of AI, which are food and beverage, chemical, textile, automotive, as well as electronic sectors (Dian, C.F. & Iis, S., 2021). Despite that, the main focus is the implementation of AI in the business industry, especially e-shopping or e-commerce. In the Business industry, customer experience holds a crucial role, which has an impact on customer purchase intention and behaviour that can lead into the succession of business. So, AI is used as the solution to help the business know their customer behaviour by their pattern in the search keyword and the history of customer purchases that is called a personalised system.

The implementation of personalization provides a positive customer experience, personalization works by reading consumer profiles, then filtering and adjusting consumer needs and interests. It implements personalization to meet their specific needs by alleviating and reducing information overload. In result, customers will only pay attention to those that draw their attention, since personalization enables it to present the relevant information that has been curated based on their interest. Also, personalization can promote more personal relationships with the customers using the collected data. This can be used to offer personalised messages in the form of pop-up ads or otherwise. As previously mentioned, it can be concluded by using a personalised system, it can increase consumer interest or attraction and provide a new experience in the e-shopping or e-commerce industry. However, personalization can be negative for some people due to the leaking of potentially personal data to the service provider.

II. LITERATURE REVIEW

Artificial Intelligence is a study in computer science that includes computational procedures for complex problems to perform actions normally performed by humans because they require intelligence. The use of AI can be successful due to its intelligence and efficiency [11]. Artificial intelligence brings good changes for the business sector to become more productive, responsive, and competitive [1]. Therefore, the use of AI can be a solution in various aspects, one of which is the e-commerce business. In the application of Artificial Intelligence to the e-commerce business, it can be applied in various ways. In the study, Artificial Intelligence allows e-commerce to improve operational efficiency to higher ratio for the objective market, it is implemented in a customer-centric manner, which helps e-commerce to observe the preferences of customers [16]. Besides being customer-centric, Virtual Personal Shopper is one of the applications of Artificial Intelligence. Virtual Personal Shopper, giving options for user's consideration when shopping, is used as the right hand for looking for recommendations [16]. This allows AI to provide mediation between e-commerce and customers, namely personalization.

Personalization works by retrieving information through digital footprints such as social media, product history purchased and making product recommendations [23]. This application can improve 8 important factors, such as Accessibility, Customer recognition, Problem-solving, Competence, Promise fulfillment, Helpfulness, Value for

time, and Personalization. [7]. Personalization can be a solution to this problem by providing a good customer experience, a high customer trust ratio for products/services from e-commerce and can increase online purchases. Personalization can play a role in gaining customer trust in a brand and the technology used when purchasing services in e-commerce. With personalized, convenient, and high-quality AI services, it is the key to gaining customer trust for online shopping [14]. For businesspeople, applying artificial intelligence to their business can increase effectiveness and save costs. In addition, an important attribute in achieving customer trust is privacy/security. There are some who respond negatively to this privacy issue, and some are defensive because they think it is worth the experience they get. In online shopping, customers are still unfamiliar and have negative feelings, but with the mediation of personalization between customers and e-commerce, it can affect the customer experience from negative to positive. With that, personalization can have an impact on a more positive customer experience, namely gaining customer trust in the services/products provided and can increase purchasing power online.

III. METHODOLOGY

The Method that will be used in this research is the content analysis. Content analysis contains a combination of two methods which are quantitative and qualitative methods. In the use of quantitative methods, the results obtained are in the form of numbers and statistics, which can analyze the result to get the frequency, average, correlation, and cause-effect relationship. While in the use of qualitative methods, the results obtained are in the form of words, ideas, and experience, with which can analyze the result based on the research's judgement. The technique used is a questionnaire distributed via Google Form with a filling period of 7 days. Sample in this research is the society that has been using online shopping platforms with the 50 target sample respondents. The design of the questionnaire aims to determine the relation of personalization and customer experience, the form of the question is varied with the result containing two kinds of data that are qualitative and qualitative, so this research will be using content analysis for the data analysis.

Table I. Research Question

| Qualitative Research Question	
No	**Research Question**
RQ1	What are the online shopping applications with a personalization system that you often use?
RQ2	How do you feel from using online shopping applications that implement a personalization system?
RQ3	In the future, what do you expect from a personalization system to help you find items in online shopping applications?
Quantitative Research Question	
QR1	Gender
QR2	Age
QR3	Have you ever used an application that implemented a personalization system in it?
QR4	How important do you think the personalization system is?
QR5	Does the personalization system help you find what you are looking for or like?
QR6	How often do you use online shopping applications that use a personalization system?
QR7	Does having a personalization system increase your purchase intention?
QR8	Do you have any privacy issues that are used for personalization systems?

IV. RESULT

The results are derived from a questionnaire conducted using Google Form which consists of 11 questions, 8 Quantitative questions and 3 Qualitative Questions with a total sample of 53 respondents with 60% female and 40% male respondent and 90% of them 15-21 years old. With the method that we applied and distributed to the public, aim to find out the public's response to personalization in the marketplace, both in terms of positive and negative.

A. RQ1. What are the online shopping applications with a personalization system that you often use?

Based on the results of a questionnaire given to 53 people using the Google Form application, the most widely used personalization system is Tokopedia, in second place is Shopee and followed by Blibli, Instagram, Zalora, Grab, Sephora, TikTok, and Sociolla.

B. RQ2. How do you feel from using online shopping applications that implement a personalization system?

based on the results of a questionnaire given to 53 people using the Google Form application, the responses from the respondents tend to lead to positive things, the respondents feel that personalization makes finding the good things that they need or want are easier, and they also think that searching for some items becomes more efficient so the respondent can save their time. However, some respondents also felt that personalization brought some negative things, such as a lack of privacy and causing impulsiveness.

C. RQ3. In the future, what do you expect from a personalization system to help you find items in online shopping applications?

Based on the results of the questionnaire given to 53 people using Google Form, some respondents feel that the current personalization system is very good, but there are some respondents who want the personalization system to be improved in terms of accuracy so that it only shows items that are really needed based on previous searches. Some respondents also expect the personalization system to maintain the security of its users' personal data by cooperating with cyber security.

D. QR3. Have you ever used an application that implemented a personalization system in it?

Fig.3 QR3 result chart

Based on the questionnaire conducted, 96% of the respondents have used an application in which it implements a personalization system which is dominated by the Tokopedia and Shopee applications, then, the remaining 4% of the respondents have never used an application that implements a personalization system.

E. QR4. How important do you think the personalization system is?
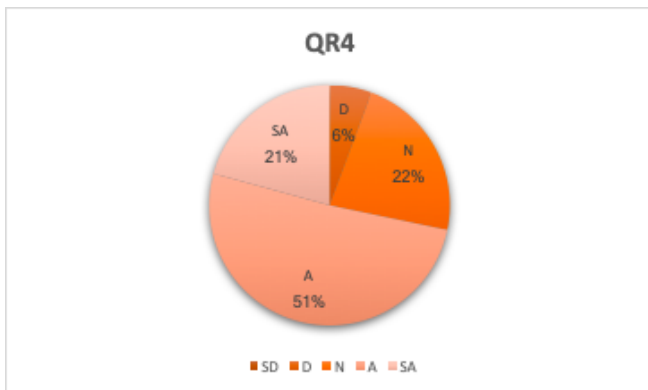
Fig.4 QR4 result chart

Based on the questionnaire conducted, 21% of the respondents felt that the use of a personalization system in an application is very important for them and 51% of the respondents felt that the use of a personalization system in an application is important for them. While 6% of the respondents feel that the use of a personalization system in an application is not important for them, the rest of the respondents feel neutral. Therefore, it can be concluded that most of the people feel that the personalization system in an application is important.

F. QR5. Does the personalization system help you find what you are looking for or like?
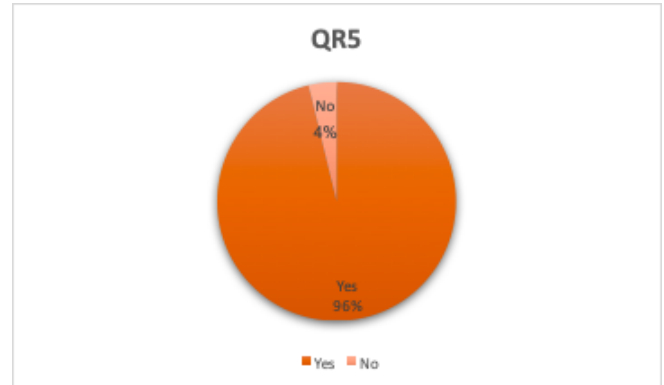

Fig.5 QR5 result chart

Based on the questionnaire conducted, 96% of the respondents feel that personalization helps them to find items or things they need or like through the recommendation system, with this they don't have to bother looking for items one by one because it is already recommended through the system. On the other hand, as many as 4% of respondents feel that the personalization system does not help them, this may be because they have never experienced using an application that implements personalization in it.

G. QR6. How often do you use online shopping applications that use a personalization system?
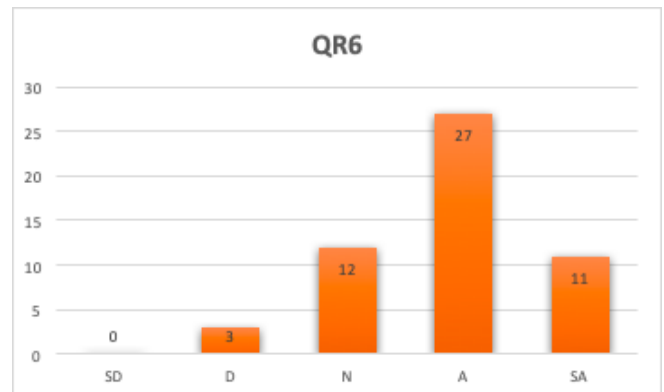

Fig.6 QR6 result chart

Based on the questionnaire conducted, 20.8% of respondents feel that they are very frequent and 50.9% of respondents feel that they often use online shopping applications with a personalization system. This proves that most users of online shopping applications are used to it and need a personalization system to help them find the right item. Meanwhile, 5.7% of respondents rarely use applications that use a personalization system and the rest choose neutral, which means they do not often and also often use online shopping applications with a personalization system.

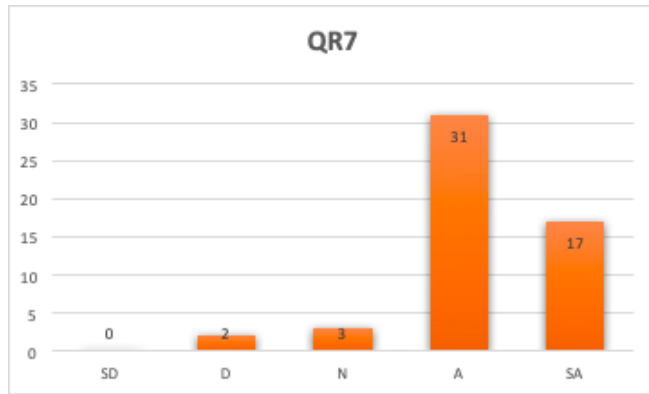*H. QR7. Does having a personalization system increase your purchase intention?*

Fig.7 QR7 result chart

Based on the questionnaire conducted, 32% of the respondents feel that the use of a personalization system in an application greatly increases their purchasing power and as many as 59% of respondents feel that a personalization system in an application increases their purchasing power. Meanwhile, as many as 4% of respondents feel that the use of a personalization system in an application does not increase their purchasing power and the rest choose neutral. Therefore, it can be concluded that personalization increases the purchasing power of most people.

I. QR8. Do you have any privacy issues that are used for personalization systems?
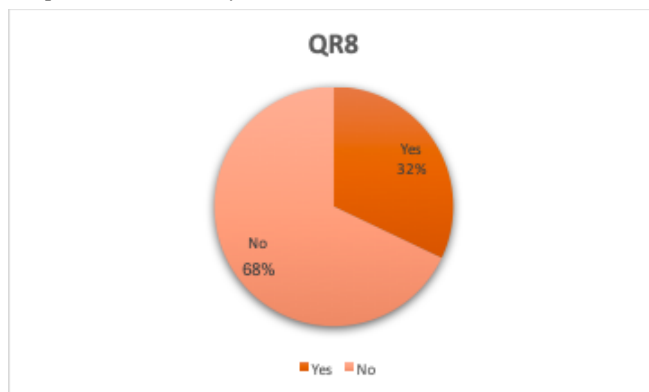

Fig.8 QR8 result chart

Based on the questionnaire conducted, 68% of the respondents feel that their privacy is not disturbed by the personalization system, but as many as 32% of the respondents feel that the personalization system interferes with their privacy, this is very natural for users because the system will indeed browse the history and data from its users.

V. DISCUSSION

Over the years, the convenience of personalization grew into an expectation amongst customers when it comes to interacting with digital business. Based on Epsilon and GBH Insight, statically said that 80% of respondents from 1,000 US adults want personalization from online shopping. In 2018, 89% of digital businesses are investing in personalization. As the time flies, it grows into 90% of digital

businesses that are using personalization as the key to business success with the purpose to meet customer expectations to personalize the customer experience. The implementation of personalization in digital business, brings out the changes to improve customer experience into the positive sides, with the rate of 80% those customers are more likely to return to a site, based on a survey that was conducted by Epsilon with 1.000 respondents.

From the result, it shows that personalization in online shopping is bringing a positive impact to customers and 85% of respondents say personalization is important. It makes everything easier when it uses personalization. It concludes that personalization simplifies the process of finding the desired item by providing a recommendation system. Moreover, it shows that using personalization is more efficient and more secure. This questionnaire is being answered by 96,2% respondent that used an application with personalization in it.

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