

ANALYSIS OF USER SATISFACTION WITH THE VERONIKA DIGITAL CHATBOT SERVICE ON THE MY TELKOMSEL APPLICATION

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Abstract

This research aims to analyze user satisfaction with Veronika's digital chatbot service in the MyTelkomsel application using the Delone and McLean information system model as a theoretical framework. This research focuses on the population of MyTelkomsel application users who have experience using the Veronika chatbot. This research uses a survey method to collect data from a sample of users. The data obtained will be analyzed to identify factors that influence user satisfaction, which include system quality, information quality and service quality, user intensity, user satisfaction and impact of use. It is hoped that the results of this research will provide in-depth insight into the effectiveness of Veronika's chatbot services as well as recommendations for improving the quality of digital services in the future.

Keyword ; User Satisfaction ; Chatbot ; Digital Service ; Delone and McLean Models , Customer Satisfaction Index (CSI)

INTRODUCTION

The development of technology plays a crucial role in every aspect of life. This is due to the influence that technological advancements can have on various aspects of human life, ranging from service sectors, education, to healthcare. In the economic sector, technology plays a key role in increasing productivity. Technological innovations enable the creation of more advanced and automated production systems, significantly contributing to a country's economic growth (Manita et al., 2020).

According to Park et al. (2022), service advancements are heavily influenced by technological progress. Technology has become the main driver in improving the quality, efficiency, and availability of services. As technology continues to evolve, services can be continuously updated and refined to meet societal needs more efficiently. Services within a company are a critical sector as they can affect customers' perceptions and satisfaction with the company.

On the other hand, rapid technological advancements also influence how businesses deliver services. The development of technology in the service sector has now shifted to digital systems. In this regard, businesses that wish to remain competitive in the modern era are required to adopt digital customer services such as interactive websites, mobile applications, text messaging, and live chat.

Digital service technology enhances business-customer relationships and accelerates responses to customer needs. Therefore, the application of technology in services improves operational efficiency and provides a more personalized and digitally integrated customer experience. Digital service technology, or more commonly known as digital customer service, involves a series of interactions between customers and companies conducted electronically or through digital platforms. This service includes various online communication channels, such as websites, mobile applications, text messages, emails, live chats, and social media. Digital customer service is designed to meet customer needs more responsively, thus helping businesses meet their customers' needs quickly and easily (Sarker et al., 2021).

For example, in the current era, the use of digital customer service is highly considered by most companies. According to the use of digital services, various companies can encourage

higher levels of satisfaction. To support customer needs, the use of information technology systems is highly necessary for companies. To date, several information technology systems commonly used as tools to support digital services include:

- a. Chatbots: The use of artificial intelligence in the form of chatbots has become a major component in digital customer service. Chatbots can provide quick and automated responses to common customer inquiries, direct them to relevant information, or solve problems without human intervention.
- b. Mobile Applications: Many companies offer customer services through their mobile applications. This allows customers to access account information, make purchases, and submit inquiries easily via mobile devices.
- c. Social Media: Companies are active on various social media platforms to provide customer support, respond to inquiries, convey updates, and handle customer issues openly. Social media can also serve as a channel for customers to share experiences and provide feedback.
- d. Customer Data Analysis: The use of data analysis helps companies understand customer preferences, purchasing behaviors, and common issues faced by customers. This enables companies to devise more targeted strategies and enhance customer experience.
- e. Online Self-Service: Most digital customer services allow customers to resolve issues on their own through online guides, knowledge bases, or FAQs (Frequently Asked Questions). This gives customers the freedom to find answers without contacting customer support.

As previously mentioned, chatbots are one of the increasingly popular digital services. Their presence has brought significant changes in the way humans interact with technology. By using artificial intelligence, chatbots can provide instant responses and solutions to users, speeding up communication processes and enhancing service efficiency (De Cock et al., 2020).

Furthermore, chatbots are also an effective tool for enhancing customer experience. Their ability to provide quick and accurate answers to customer inquiries can increase customer satisfaction. With various customizable features, chatbots can deliver personalized services and understand individual needs, providing a better user experience. Thus, chatbots not only serve as technological aids but also become crucial elements in business strategies to enhance service and interaction with customers.

According to statista.com, the revenue generated from the chatbot industry amounted to approximately \$83 million in 2021. In the same study, Statista estimated the industry's revenue growth for the coming years. The study indicated that the chatbot market will continue to grow significantly and is expected to be worth around \$454.8 million by 2027.

In Indonesia, the use of chatbot technology is increasing due to growing awareness of its potential benefits. Businesses are increasingly leveraging chatbots to optimize their customer service operations, enhance user interactions, and boost overall productivity. Chatbots are being widely adopted in various sectors including e-commerce, finance, and telecommunications due to the need for efficient and scalable consumer interactions.

The rising popularity of chatbots is largely attributed to their ability to provide instant responses to consumer queries, thereby enhancing user satisfaction. Advances in natural language processing and machine learning have improved chatbots' ability to understand and respond to user questions in a manner very similar to human communication. This reduces the burden on human customer support professionals and ensures timely and consistent client experiences (Abdulquadri et al., 2021).

Moreover, the cost-effectiveness of using chatbots is an important aspect driving their adoption. Companies recognize the potential for significant savings in human and material resources by automating repetitive processes with chatbots. An increasing number of

businesses are adopting chatbot technology to compete in the digital era, leading to its widespread acceptance across various sectors in Indonesia (Sahata Sitanggang et al., 2023).

According to Katadata.co.id, the growth of chatbot usage in Indonesia has accelerated since the outbreak of the Coronavirus pandemic in 2021. Kata.ai, a technology startup, estimated a 170% annual growth in users by early 2022. Irzan Raditya, CEO and Co-Founder of Kata.ai, stated that at the beginning of 2022, Kata.ai experienced 80% business growth. Subsequently, the number of conversations generated by all chatbot lines created by over 150 companies assisted by Kata.ai doubled.

The trend of chatbot integration is expected to continue and advance as technology becomes more complex, thereby enhancing capabilities. Chatbots are anticipated to have a significant impact on consumer interactions in the Indonesian corporate environment due to ongoing digital transformation and the increasing importance of providing seamless online experiences (Sahata Sitanggang et al., 2023).

Telkomsel, as one of the leading telecommunications service providers in Indonesia, has not lagged in adopting chatbot technology to enhance the quality of their customer service. Recognizing the importance of customer satisfaction, this study will focus on analyzing customer satisfaction with the Veronika digital chatbot service on the MyTelkomsel app.

Veronika is a chat-based virtual assistant service within the MyTelkomsel app. This chatbot is designed to assist Telkomsel users with various service-related matters. The latest artificial intelligence (AI) technology from Microsoft Azure OpenAI Service makes interactions more natural and personal. So far, the Veronika chatbot can perform several functions within the app, including:

- Answering questions: A feature capable of responding to inquiries about Telkomsel's products and services, such as Telkomsel One, IndiHome, Orbit, MAXstream, and more.
- Conducting transactions: Providing guidance on data package top-ups, credit top-ups, bill payments, or Telkomsel POIN redemptions.
- Providing detailed information on services: Such as checking remaining internet quota, finding the nearest GraPARI location, or discovering the latest promotions from Telkomsel.
- Interacting: Veronika can not only answer questions and conduct transactions but also engage in dialogue with customers using a more humanistic and natural language.

Therefore, this study will focus on the level of user satisfaction with the Veronika chatbot feature in the MyTelkomsel app.

Literature Review

Definition Of User Satisfaction

Zeithaml, Berry, and Parasuraman (1996) expanded this view by adding that service quality also influences user satisfaction. They developed the SERVQUAL model, which identified five main dimensions of service quality that influence user satisfaction: tangibility, boastability, responsiveness, assurance, and empathy. According to them, good service quality in these dimensions increases user satisfaction, which in turn can increase user loyalty and retention.

According to Oliver (1980), user satisfaction is an emotional response that occurs after a user experience of a product or service. Oliver explains that satisfaction is not a static state, but is dynamic and can change over time depending on various factors, such as changes in user expectations, past experiences, and ongoing interactions with the product or service. Oliver also introduced disconfirmation theory, which states that satisfaction depends on the difference between expectations and perceptions of the actual performance of a product or service.

Meanwhile, according to Lovelock and Wirtz (2011), user satisfaction is an important indicator of an organization's success in providing value to its customers. They argue that to achieve high user satisfaction, companies must focus on creating value by improving the quality of products and services, offering reasonable prices, and building good relationships with users.

Based on the opinions of these experts, it can be concluded. User satisfaction is the result of a complex interaction between user expectations, product and service quality, and overall user experience. Understanding and managing these factors is key to creating and maintaining high levels of user satisfaction, which can ultimately increase loyalty and long-term business success

IS Success Models Delone & Mclean

The Information Systems Success Model (IS Success Model) developed by DeLone and McLean in 2003 is a framework used to evaluate the effectiveness and success of information systems. This model is a development of the previous model which they introduced in 1992. In the 2003 model, DeLone and McLean identified six main dimensions that are interrelated and can be used to assess the success of information systems, namely: System Quality, Information Quality, Quality, Service Quality, Use, User Satisfaction and Net Benefits.

In the context of Veronika Chatbot user satisfaction research, the DeLone and McLean model can be used to analyze how the various factors mentioned above influence user satisfaction

Dimensions and Indicators

1. System Quality: Refers to the technical quality of the system, such as reliability, performance and flexibility (Easy to use, speed of access provided, system reliability)
2. Information Quality: Concerns the accuracy, clarity and relevance of the information provided by the system (completeness of information, accuracy of answers, relevance of answers)
3. Service Quality: Describes the quality of service provided to system users, including technical support and training. (Guarantees provided by the service, attitude and care received by customers, customer support)
4. User Satisfaction: The level of user satisfaction and trust in the system (available content, perceived convenience, accuracy)
5. Intensity of Use: How often and how much the system is used by users. (Daily user usage, Frequency of usage, continuity of service usage.)
6. Net Benefits : The effect of the system on organizational performance, such as increasing productivity, efficiency and effectiveness. (Time efficiency, Final satisfaction, Recommendations for use)

MATERIAL AND METHOD

This research is a type of quantitative research using survey methods. Quantitative research is a research approach that focuses on objective measurement and statistical analysis of collected data. This research aims to test previously proposed hypotheses using numerical data collected using structured tools such as questionnaires and surveys

Design Study

Due to the unknown population size, Hair's formula was selected to calculate the sample size. Following the guidelines proposed by Febriana et al. (2021), the sample size was

determined by multiplying the number of items in the questionnaire by 6. Specifically, the formula $N = \text{Number of Items} \times 6$ was employed. With 18 items, the resulting minimum sample size was established at 108 respondents.

Data Analysis

Primary data was collected through distributing questionnaires online using a Google Form link which was distributed to respondents to obtain research data. A questionnaire is a data collection technique that involves giving respondents a number of questions or written statements to answer (Syarifuddin et al., 2021).

Result

Validity Test

Table 1. Validity Test Results

No	Dimensions	Attribute	r count	r count	r tabel	Status
			importance	satisfaction		
1	System Quality	Ease Of Use	0,573	0,69	0,1591	Valid
2		Response Time	0,742	0,67	0,1591	Valid
3		Keandalan Sistem	0,647	0,69	0,1591	Valid
4	Information Quality	Completeness	0,55	0,616	0,1591	Valid
5		Accurate	0,662	0,63	0,1591	Valid
6		Relevance	0,592	0,613	0,1591	Valid
7	Service Quality	Assurance	0,663	0,777	0,1591	Valid
8		Empathy	0,591	0,656	0,1591	Valid
9		Dukungan Pelanggan	0,494	0,646	0,1591	Valid
10	Use	Daily Use	0,577	0,664	0,1591	Valid
11		Frequency-in use	0,418	0,715	0,1591	Valid
12		Continuous use of services	0,562	0,705	0,1591	Valid
13	User Satisfaction	Content	0,535	0,671	0,1591	Valid
14		Convenience	0,688	0,746	0,1591	Valid
15		Accuracy	0,522	0,719	0,1591	Valid
16	Net Benefits	Cost Savings	0,553	0,685	0,1591	Valid
17		Time Savings	0,668	0,751	0,1591	Valid
18		Expanded Markets	0,661	0,751	0,1591	Valid

Source: Data processed by researchers (2024)

indicators based on importance and satisfaction are greater than 0.1591 (r table), so the calculated r is greater than r table, and these attributes can be used in research, no indicators are omitted or invalid

Reliability Test

Table 2. Reliability Test Results

	<i>Cronbach's Alpha</i>	Keterangan
Satisfaction	0,933	Reliabel
Importance	0,894	Reliabel

Source: Data processed by researchers (2024)

Because the instrument's reliability testing value exceeds 0.60 or almost 1, it can be concluded that the instrument can be considered reliable.

Customer Satisfaction Index (CSI)

The Customer Satisfaction Index (CSI) in this research is used to determine user satisfaction with the Veronika chatbot service in the My Telkomsel application. This method can determine the level of importance, describing how important various aspects of the service are considered by users. This level of importance is directly related to users' expectations of the quality of services provided by an entity. Meanwhile, the performance level describes the extent to which

users are satisfied with the institution's performance. This level of performance is directly related to the effectiveness of the services provided by the organization, because user satisfaction depends on the extent to which the institution is able to meet and exceed user expectations in providing satisfactory services.

Table 3. Value Weight

No.	Value	Level Of Importance	Level Of Satisfaction
1.	0% – 25%	Very Not Important	Very Not Satisfied
2.	26% – 50%	Not Important	Not Satisfied
3.	51% – 75 %	Important	Satisfied
4.	76% – 100%	Very Important	Very Satisfied

Source: Data processed by researchers (2024)

The following are the results of processing the Customer Satisfaction Index (CSI) data obtained from the responses of participating respondents to the questionnaire statements :

Table 4 Customer Satisfaction Index

No	Dimensions	Attribute	Importance Level		Satisfaction Level		WF	WS	CSI
			Value	MIS	Value	MSS			
1	System Quality	Ease Of Use	329	3.05	207	1.92	5.44	10.43	20,25%
2		Response Time	321	2.97	190	1.76	5.31	9.34	
3		system reliability	338	3.13	205	1.90	5.59	10.61	
4	Information Quality	Completenes	331	3.06	210	1.94	5.47	10.64	21,96%
5		Accurate	337	3.12	218	2.02	5.57	11.25	
6		Relevance	339	3.14	211	1.97	5.61	11.05	
7	Service Quality	Assurance	335	3.10	209	1.94	5.54	10.72	22,84%
8		Empathy	341	3.16	223	2.06	5.64	11.64	
9		Customer Supports	341	3.16	228	2.11	5.64	11.90	
10	Use	Daily Use	331	3.06	230	2.13	5.47	11.66	23,19%
11		Frequency-in use	335	3.10	227	2.10	5.54	11.64	
12		Continuous use of services	335	3.10	224	2.07	5.54	11.49	
13	User Satisfaction	Content	347	3.21	229	2.12	5.74	12.17	23,29%
14		Convenience	332	3.07	221	2.07	5.49	11.34	
15		Accuracy	341	3.16	219	2.03	5.64	11.43	
16	Net Benefits	Cost Savings	342	3.17	228	2.11	5.65	11.94	23,31%
17		Time Savings	335	3.10	228	2.11	5.54	11.69	
18		Expanded Markets	338	3.13	219	2.03	5.59	11.33	
Total Average Score				3.11		2.02			22,48%

Source: Data processed by researchers (2024)

From the data processing results obtained by researchers, based on respondents' answers through the questionnaire statements given in table 4.18, the results obtained were an average importance score (MIS) of 3.11 and an average satisfaction score (MSS) of 2.02. The total average importance score (Σ MIS) was 56, the total average satisfaction score (Σ MSS) was 36.39, the total weight (Σ WS) was 202.26, and the Customer Satisfaction Index results from the 18 available attributes were 22.47% and from this figure, based on the level of satisfaction criteria it is at the level of "Very Not Satisfied" (0% - 25%).

On the dimensions of System Quality obtained a percentage of 20.25% in the analysis *Customer Satisfaction Index*, based on the level of satisfaction criteria it can be stated "**Very Not Satisfied**" (0% - 25%), so in this case it can be interpreted that Dimension *System Quality* This is something that users must pay attention to, including aspects of convenience, speed of access, and system reliability. Users feel that this aspect has not been able to meet user expectations *chatbot* Veronica.

In the Information Quality dimension obtained a percentage of 21.96% in the analysis *Customer Satisfaction Index*, based on the level of satisfaction criteria it can be stated "**Very Not Satisfied**" (0% - 25%). So it can be interpreted that dimensions *Information Quality* is a dimension that users must pay attention to, in this case regarding the aspects of completeness, accuracy and relevance of answers *chatbot* Veronica. Users feel that this aspect cannot support user needs *chatbot* Veronica.

On the dimensions of Service Quality obtained a percentage of 22.84% so *Customer Satisfaction Index* from this dimension, based on the level of satisfaction criteria it can be stated "**Very Not Satisfied**" (0% - 25%). So it can be interpreted that users tend to be dissatisfied with the quality of service they receive from *chatbot* Veronika covers aspects such as service guarantees, empathy, and customer support received by users *chatbot* Veronika is something that must be paid attention to and improved.

In the Usage dimension obtained a percentage of 23.19% in the analysis *Customer Satisfaction Index*, based on the level of satisfaction criteria it can be stated "**Very Not Satisfied**" (0% - 25%). So it can be interpreted that users tend to be dissatisfied with the experience of using the features *chatbot* Veronika, comfort felt by users from the aspects of daily user use, frequency of service use, and sustainability in service use *chatbot* Veronika, this is a very important thing to pay attention to, because this is what can provide feedback for feature development *chatbot* Veronica in the future.

On the dimensions of *User Satisfaction* obtained a percentage of 23.29% so *Customer Satisfaction Index* from this dimension, based on the level of satisfaction criteria it can be stated " **Very Not Satisfied**" (0% - 25%). And it can be interpreted that users tend to be dissatisfied with the experience they have while using it *chatbot* Veronika aspects such as the content provided, the ease of answers received, as well as the accuracy of the solutions provided by *chatbot* Veronika is something that really needs to be fixed.

Net Benefits obtained a percentage of 23.31% in the analysis *Customer Satisfaction Index*, based on the level of satisfaction criteria it can be stated " **Very Not Satisfied**" (0% - 25%). So it can be interpreted that users tend to be dissatisfied with the impact of using the feature *chatbot* Veronika. Saving costs, saving time, and expanding user needs in this case are very important aspects to pay attention to for the efficiency and comfort that users will feel when using the Veronika chatbot feature in the My Telkomsel application.

CONCLUSION

In the results of research using the Customer Satisfaction Index (CSI) method which is based on the IS Success Models as a theoretical basis, it was found that the overall CSI result was 22.47%, this shows that users of Veronika's digital chatbot service in the My Telkomsel application felt "**Very Not Satisfied**" with Veronika's chatbot service.

IMPLICATION

a. Theoretical Implications

This research uses the IS Success Models theory to determine user satisfaction with Veronika's digital chatbot service in the My Telkomsel application. The dimensions used include System

Quality, Information Quality, Service Quality, Use, User Satisfaction, and System Impact (Net Benefits). In this research we are using Customer Satisfaction Index (CSI)

b. Practical Implications

The results of this research provide several practical implications that can be applied by Telkomsel to improve the quality of Veronika chatbot services in the MyTelkomsel application. Based on the research results, one aspect that can be improved is the responsiveness of the Veronika chatbot. By increasing the speed and accuracy of responses, users will feel more satisfied when using the service.

RECOMMENDATION

- a. **Expanding the Number and Profile of Respondents:** Future research is expected to involve a larger number of respondents and with a more diverse demographic profile to obtain more representative results.
- b. **Comparative Analysis Between Digital Services:** Future research can compare the satisfaction level of Veronika chatbot users with chatbot services from other operators to find out the advantages and disadvantages more comprehensively.
- c. **Use of Qualitative Research Methods:** Future research can also use qualitative research methods such as in-depth interviews or focus group discussions (FGD) to gain deeper insight into users' experiences and expectations of chatbot services.

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