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ANALISIS KEPUASAN PENGGUNA *E-WALLET* DANA MENGUNAKAN METODE *E-SERVICE QUALITY*, *CSI* DAN *KANO*

TUGAS AKHIR

Diajukan Sebagai Salah Satu Syarat
untuk Memperoleh Gelar Sarjana Komputer pada
Program Studi Sistem Informasi



Oleh:

MUTHIA KAMILA
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UIN SUSKA RIAU

FAKULTAS SAINS DAN TEKNOLOGI
UNIVERSITAS ISLAM NEGERI SULTAN SYARIF KASIM RIAU
PEKANBARU
2024

LEMBAR PERSETUJUAN

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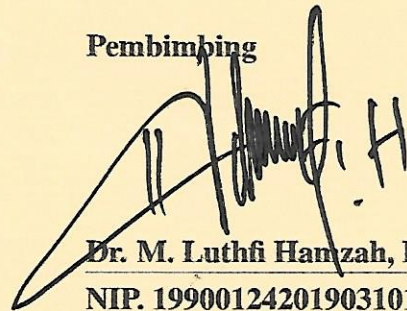
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LEMBAR PERSEMBAHAN

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Dengan menyebut nama Allah yang maha pengasih lagi maha penyayang

Assalamu'alaikum Warahmatullahi Wabarakatuh.

Alhamdulillah Rabbil 'Alamin, segala puji bagi Allah *Subhanahu Wa Ta'ala* sebagai bentuk rasa syukur atas segala nikmat yang telah diberikan tanpa ada kekurangan sedikitpun. *Shalawat* beserta salam tak lupa pula kita sampaikan kepada junjungan dan suri tauladan kita Nabi Muhammad *Shallallahu 'Alaihi Wa Sallam* dengan mengucapkan *Allahumma Sholli'ala Sayyidina Muhammad Wa'ala Ali Sayyidina Muhammad*. Semoga kita semua selalu senantiasa mendapat syafa'at-Nya di dunia maupun di akhirat, *aamiin ya rabbal'aalamiin*.

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Pekanbaru, 3 Juli 2024
Peneliti,

MUTHIA KAMILA
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Decision on submission to International Conference on Circuit, Systems and Communication (ICCSC 2024) #G5

Microsoft CMT <email@msr-cmt.org>
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Sab, 11 Mei, 05.17

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We are notifying you of your paper status for 2024 International Conference on Circuit, Systems and Communication,

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Title: Analyzing User Satisfaction with the DANA E-Wallet Using the E-Service Quality, CSI, and Kano Methods Revision

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Analyzing User Satisfaction with the DANA E-Wallet Using the E-Service Quality, CSI, and Kano Methods

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Abstract— Advancements in technology and information have enabled various types of services to be conducted digitally. E-wallet is an application system used for cashless payments. Some applications that fall under E-Wallet include Dana, GoPay, LinkAja, OVO, and ShopeePay. According to research findings, these e-wallet applications compete with each other to provide quality services to their users.

This study uses three satisfaction calculation methodologies to assess the DANA e-wallet's quality and gauge customer satisfaction: E-Service Quality, CSI, and Kano. Based on the calculation results in this research, DANA is already categorized as satisfactory. However, there are several attributes that should always be prioritized because they impact user satisfaction based on user needs, particularly in the efficiency dimension, where "the DANA application should be easy to use and user-friendly, and transactions should be done quickly."

Keywords—E-Wallet, DANA, E-Service Quality, CSI, Kano

I. INTRODUCTION

E-Wallet is one of the innovations in payment methods in the form of fintech (finance technology) that operates through internet networks.[1] E-Wallet is used online via smartphones and can be accessed without the need for cards, paper money, or coins, only using electronic applications. [2] Some E-Wallet applications include Dana, GoPay, LinkAja, OVO, and ShopeePay. With numerous E-Wallet products in Indonesia, these E-Wallets strive to demonstrate the best and highest-quality services compared to others.[3] The success of a service can be determined by the satisfaction of its users.[4] The quality of e-wallet services can also be determined from the user's perspective.[5]

DANA is one of the E-Wallet products in Indonesia, originating from the company PT Espay Debit Indonesia. Similar to other E-Wallets, with non-cash and non-card payment transactions using just one application, DANA was created to simplify digital transactions, both non-cash and non-card, to be fast, secure, and practical. DANA's services or features range from daily needs to e-commerce payments, education, and other payments. DANA also offers attractive promotional features as it collaborates with merchants, from MSMEs to large-scale businesses.[6]

According to the E-Wallet Industry Outlook 2023 Insight Asia graph cited from databoks.katadata.co.id, a comprehensive and trusted data platform, out of 1,300 Indonesian E-Wallet users, DANA ranked third in September

2022 with 61% of respondents. DANA is below GoPay (71%) and Ovo (70%).

Currently, the DANA application on the Google Play Store with a rating of 4.5 stars (March 2024) has been downloaded more than 100 million times by users and has received over 4 million reviews in the comment section. Despite its advantages, based on user reviews in the comment section, the majority of complaints about the DANA E-Wallet are about many users experiencing transaction failures due to application errors, even though the input data is correct, and they have sufficient network and quota but still face access issues.

Another problem with the DANA application is the sudden disappearance of balances, and when reported to DANA, there is no response at all. Other issues include various problems arising after updates or upgrades. Furthermore, based on interviews conducted by the author with several DANA application users in Pekanbaru, there are complaints such as frequent errors during transactions, especially during top-ups, experiences of fraud under the guise of the DANA application, unknown balances entering users' accounts, which is feared as one of the fraud modes, and other issues.

In conclusion, some user problems with the DANA application include:

TABLE I. FUND USER COMPLAINT

No	User Complaints
1	78% of users often experience application errors..
2	82% of users have problems with efficiency, once the application is updated, the process becomes slow.
3	77% suffered fraud due to data leakage.
4	83% of users have a responsive problem, that is, if a problem occurs, the application does not respond even within 1 x 24 hours.
5	78% have money problems that suddenly disappear; users already have but no compensation.

The emergence of several complaints and issues proves that there is a mismatch between the service and user expectations. User satisfaction is one of the factors determining the quality level of an application. If the quality of service in the application is not taken into account, it can lead users to switch to other e-wallets that provide better services, meet user expectations, and respond faster to user complaints when handling user problems.[7] Based on the

problems that occurred, the authors were interested in doing research to find out what level of service was available in the application so that they could evaluate customer satisfaction and know what the actual customer needs are. with using it using three methods: the E-Servqual, CSI, and Kano methods.

The first method is the E-Servqual method, which aims to determine the quality level of services in the E-Wallet system using Parasuraman's theory, which mentions seven dimensions of e-service quality. The dimensions of electronic service quality (e-service quality) are efficiency, fulfillment, system availability, privacy, responsiveness, compensation, and contact.[8]

The second method, the Customer Satisfaction Index (CSI), is used to evaluate overall customer satisfaction by considering the importance of measured quality attributes.[9]

Furthermore, the Kano method, developed by Noriaki Kano, is used to identify, categorize, and prioritize customer needs, divided into functional and dysfunctional statements.[10]

II. LITERATURE REVIEW

A. Analysis

Analysis is the process of breaking down a unit into its smallest components.[11] It involves breaking down the whole into interconnected components with a common goal.[12] Analysis is a thinking activity that breaks down a problem from one unit into the smallest units.[13]

B. User Satisfaction

User satisfaction is the comparison between consumer perceptions and actual user interactions.[14] User perception is the feeling of displeasure or dissatisfaction that arises after comparing the expected performance level of a product with its actual performance. User satisfaction is not absolute but depends on what the user expects.[15].

Electronic satisfaction means that online products and services exceed customer expectations, namely, the level of user satisfaction after comparing experience and expectations.[16]

C. E-Wallet

E-Wallet or FinTech (financial technology) and is a tool used in payment transactions using applications and networks. E-Wallets can replace cash transactions, making transactions easier without carrying bulky items and a lot of cash. This saves time, is more efficient, reduces the risk of theft, and ensures user data confidentiality during payments.[17]

There are 39 e-wallets that have received official licenses in Indonesia, including Go-Pay, OVO, DANA, Shopee-Pay, Link Aja, and others.[3]

D. DANA

DANA is one of Indonesia's e-wallet platforms. With DANA, it is optimized to support the government's commitment to saving the cost of producing and distributing physical money, as well as increasing financial literacy and inclusion in Indonesian society. People can become more productive, efficient, and competent because DANA is designed to make every transaction easy to carry out both online and offline, with guaranteed data security.[18]

The open platform supported by the DANA application can be used in various applications, including online and conventional stores. This open platform concept is utilized for

various service sectors such as education, public services, social services, households, and traders, making transactions easy, practical, and safe.[19]

The application offers many service features, divided into purchasing credit and internet data, delivery payments, access to health care, mysmartfren access, DANA points to get DANA service promotions, splitting DANA balances among many friends, cashing out balances, e-commerce payments such as JD ID, Shopee, and Tokopedia, household payments such as electricity, tap water, mobile postpaid, telkom, pgn gas, internet, and other payments.

E. Electronic Service Quality (E-Servqual)

Method E-Service Quality (E-Servqual) is a theory developed by Parasuraman, Zeithaml, and Berry.[20] This method connects user and service provider perceptions of electronic service quality and can be used as a measurement to improve and enhance quality.[21]

E-Servqual is divided into seven dimensions according to Parasuraman's theory.[22] (1) Efficiency: The ability of the application to run its operations efficiently, related to speed and ease of accessing pages. (2) Reliability: Related to the reliability of information provided, site availability, functional suitability, and accuracy of promised services.(3) Responsiveness: Related to the ability to respond or provide feedback through Customer Service or other means. (4) Privacy: Related to the security and confidentiality of user data that needs to be protected. (5) Fulfillment: Related to whether the promised service system is appropriate, accurate, and reliable. (6) Compensation: Dimension related to the guarantee provided by the service provider to users regarding damages, deficiencies, or problems with the services received. (7) Contact: Related to the availability of contact media or communication for users to communicate with the application provider.[23] The term GAP (gap) is closely related to this method.[24] The GAP value is the difference between the actual user experience and the expected user experience.[25]

F. Customer Satisfaction Index (CSI)

Method The Customer Satisfaction Index (CSI) is used to determine the overall level of user satisfaction.[26] It evaluates regularly and addresses shortcomings to improve services, considering customers, institutions, organizations, and businesses.[27] The advantage of the Customer Satisfaction Index method is that it not only assesses satisfaction but also identifies which dimensions or attributes need improvement. The CSI method is easy and efficient to use, saving time.[28]

G. KANO

Kano theory was developed by Professor Noriaki Kano.who came from the Tokyo University of Science in 1984.[29] This method aims to categorize each attribute of a service to determine whether it is in accordance with the expectations of the customers.attribute of a service, whether it matches the expectations of users and provide a decision about whether the service is in accordance with the desired needs of users.[30]

Kano is a user satisfaction method that used to classify the characteristics of services or products in accordance with the needs of The purpose of this method is to classify the characteristics of services or products.based on how well the product or service can satisfy users.[31] Kano analysis is

carried out by giving functional and dysfunctional statements and consists of Kano attributes.[32] (1) One-dimensional (Performance Needs O) is an attribute that influence the level of user satisfaction which is based on user desires, (2) Must-be (Basic Needs M) is an attribute that provides influence on the level of user satisfaction based on how well the services were provided in meeting the basic needs of users, (3) Attractive (Excitement Needs A) is an attribute that will not affect the level of user satisfaction if it is not fulfilled. However, if this attribute can be achieved, then can increase user satisfaction. (4) Indifferent (I), The existence of this attribute will not affect level of user satisfaction, (5) Questionable (Q) is an attribute that is misinterpreted or misunderstood by respondents. attributes that are misinterpreted or understood by respondents when answering the questionnaire, (6) Reverse (R) is an attribute that can make users disappointed. attribute that can make users disappointed, so that when This attribute is eliminated, which will increase user satisfaction. user satisfaction.[33]

The user chooses one of five possible answers for each section of the inquiry. "Like," "must-be," "no feeling," "give up," and "do not like" were the descriptions given to these five options. Based on the respondents' perceptions of the functional and dysfunctional forms of a quality attribute, the perceptions were then assessed into quality dimensions.[34]

III. RESEARCH METHODOLOGY

A. Planning Stage

This planning stage includes identifying issues obtained from interviews with several DANA users and reviewing comments on the DANA platform on the Play Store. In this stage, the author also collects literature studies, formulates problems, determines objectives and benefits, and sets problem boundaries.

B. Data Collection Stage

Data collection in this research involves interviews and distributing questionnaires to DANA users. The questionnaires are distributed via the Google Form platform through social media. Furthermore, population and sample determination use the Lameshow formula with a precision level of 10%.

C. Data Processing Stage

This stage involves measuring how satisfied DANA application users are with data processing using the E-Servqual, CSI, and Kano methods.

D. Analysis and Results Stage

This stage will show the results of calculating E-Servqual and CSI, where CSI is derived from the E-Servqual calculation results. The CSI calculation results are used to measure the level of user satisfaction with the DANA application. Furthermore, the results of the Kano analysis are used to understand the needs of DANA users and what needs improvement.

occur in five E-Servqual dimensions: efficiency, system availability, responsiveness, privacy, and compensation.

B. Respondent Analysis and Questionnaire

The first part of the questionnaire is the respondent profile. The respondent profile that needs to be filled includes name, age, gender, and occupation type. The second part consists of statements related to E-Servqual dimensions, including two statements for the efficiency dimension, three statements for the system availability dimension, five statements for the fulfillment dimension, three statements for the privacy dimension, four statements for the responsiveness dimension, one statement for the compensation dimension, and three statements for the contact dimension.

Using the Lameshow formula for sample calculation resulted in 96 respondents, along with respondent characteristics based on gender, age, and occupation.

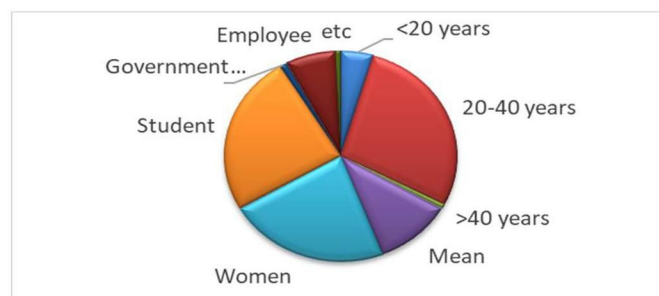


Figure 1. Respondent characteristics

C. Analysis and Data Processing

1) Calculation and Analysis of E-Servqual

In this method, the researcher distributed questionnaires where each statement was accompanied by five possible answers that respondents had to choose from. A 5-point Likert scale was used in this method.[11]

TABLE II. E-SERVQUAL CALCULATION

E- Servqual Dimensios	Criteria	Hope	Reality	Gap
Effisiensi	Easy to use DANA application/user friendly	4,56	4,14	-0,42
	Transaction services on the DANA application can be done quickly.	4,57	4,18	-0,39
System Availability	A DANA service or application is always available for transactions	4,51	4,16	-0,35
	DANA never failed (his error/transaction failed)	4,27	3,34	-0,93
	DANA provides promising service with reliability	4,38	3,91	-0,47

IV. RESULTS AND DISCUSSION

A. Problem Identification

From the problem identification above, based on the initial problem identification of this research, DANA issues often

Fullfiment	DANA has a wide range of service transaction products available	4,5	4,19	-0,31
	DANA has a superior product and promo offer compared to other e-wallet applications	4,4	3,81	-0,59
	DANA provides ease in filling balance/top up anywhere and anytime	4,59	4,22	-0,37
	DANA provides ease in transactions in some merchant/seller business	4,47	4,06	-0,41
	DANA provides ease in transactions with available service features	4,5	4,2	-0,3
Privasi	DANA safeguards the user's personal data	4,44	3,83	-0,61
	DANA guarantees the security of user transactions	4,52	3,93	-0,59
	This app is reliable for its security compared to other e-wallet applications	4,36	3,68	-0,68
Responseve ness	DANA application update in providing notification of DANA user transaction information	4,46	4,06	-0,4
	DANA received user complaints well	4,34	3,72	-0,62
	DANA receives user complaints and resolves them quickly	4,32	3,55	-0,77
	DANA provides appropriate and easy-to-understand instructions to customers	4,44	3,9	-0,54
Compensati on	DANA provides a money-back guarantee to users in case of loss caused by system	4,3	3,57	-0,73
Contact	DANA has a chat or Customer Service feature to provide information and help in the complaint process	4,33	3,82	-0,51
	DANA has a chat or Customer Service feature available 24 hours a day	4,31	3,79	-0,52

From the calculations using the e-servqual method showed that the gap score attribute is still negative. DANA application performance is best found in the achievement dimension because it has the lowest gap -0.30 "DANA provides ease in transactions with available service features" and the worst is in the Avability System dimension for getting the highest gap -0.93 "Dana never fails".

2) Calculation and Analysis of CSI

The CSI score is obtained from the calculation of WT divided by the maximum value of the likert scale.[35]

- WF (weight factor) is the average value of expectation attributes divided by the total average value of actual attributes.
- WS (Weight Score) is the WF value multiplied by the average value of actual attributes.

- WT (Weight Total) is the total average of WS. [36]

TABLE III. CSI CALCULATION

Statement	WF	WS
1	5,15	21,3
2	5,16	21,6
3	5,09	21,2
4	4,82	16,1
5	4,94	19,3
6	5,08	21,3
7	4,96	18,9
8	5,19	21,9
9	5,04	20,5
10	5,08	21,3
11	5,01	19,2
12	5,1	20
13	4,93	18,1
14	5,03	20,4
15	4,9	18,2
16	4,88	17,3
17	5,01	19,5
18	4,86	17,4
19	4,89	18,7
20	4,87	18,5
WT		390,7
CSI	78,15	

The result of the CSI score (overall satisfaction) is 78.15; based on the CSI index, the DANA application falls into the *satisfied* category.

3) Calculation and Processing of Kano

To determine the classification of an attribute in the Kano model, the researcher used a Kano evaluation table as follows.

TABLE IV. KANO CALCULATION

NO	Answer						Total	Category
	A	M	O	I	R	Q		
1	29	13	25	27	0	2	96	A
2	26	32	32	6	0	0	96	M
3	29	17	17	33	0	0	96	I
4	24	15	9	45	1	2	96	I
5	26	14	14	41	1	0	96	I
6	19	9	30	38	0	0	96	I
7	28	8	23	36	1	0	96	I
8	25	5	37	29	0	0	96	O
9	30	9	23	34	0	0	96	I
10	26	6	29	35	0	0	96	I
11	26	6	29	35	0	0	96	I
12	26	6	29	35	0	0	96	I
13	22	19	13	42	0	0	96	I
14	25	4	31	35	1	0	96	I
15	27	5	22	41	1	0	96	I
16	30	6	18	40	2	0	96	I
17	28	3	24	39	2	0	96	I
18	30	6	20	36	3	1	96	I
19	30	6	19	39	1	1	96	I
20	24	7	20	40	5	0	96	I

A: Attractive; M: Must be; I: Indifferent; R: Reverse; Q: Questionable; O : One Dimensional

Based on the calculations in the table above, the results show that there are 17 attributes classified as indifferent, one attribute each in the must-be, one-dimensional, and attractive categories.

D. Integration Analysis of E-Servqual, CSI, and Kano

From the table above, it is shown that the results obtained from integrating the E-Servqual, CSI, and Kano methods indicate that

- The user satisfaction value calculated using the CSI method is 78.1, falling into the category of users feeling satisfied.
- Seventeen attributes fall into the indifferent category, indicating that they do not affect user satisfaction.
- Attributes that do not affect user satisfaction if not fulfilled but can increase user satisfaction if achieved (attractive) are in the efficiency dimension, where the DANA application is easy to use.
- Attributes that significantly influence user satisfaction based on user desires (one-dimensional) include DANA's ease in topping up the balance anytime and anywhere.
- Attributes that significantly influence user satisfaction based on the user's basic needs (must-be) include quick transaction services on the DANA application.
- The prioritized attributes are in the efficiency dimension, such as the DANA application being user-friendly and allowing quick transactions.

V. CONCLUSION

The analysis from the CSI, Kano, and E-Service Quality techniques was received once the testing was completed. As a consequence of applying the 10% precision level Lameshow formula to a sample size of 96 respondents, the analysis results are as follows:

- The E-Servqual statements consist of 7 dimensions: efficiency with 2 statements, system availability with 3 statements, fulfillment with 5 statements, privacy with 3 statements, responsiveness with 4 statements, compensation with 1 statement, and contact with 3 statements.
- The user satisfaction value calculated using the CSI method is 78.1, falling into the category of users who are already satisfied.
- The Kano method calculation resulted in 17 attributes classified as indifferent and one attribute each in the must-be, one-dimensional, and attractive categories.

Based on the calculation results in this study, DANA is already in the satisfied category, but there are several attributes that must always be prioritized because they significantly impact user satisfaction based on user needs. These attributes are in the efficiency dimension, meaning the DANA application should be easy to use and user-friendly, and transaction services should be quick.

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LAMPIRAN B

BUKTI ACCEPTED



MUTHIA KAMILA Sistem Informasi <12050321685@students.uin-suska.ac.id>

Decision on submission to International Conference on Circuit, Systems and Communication (ICSC 2024) #G5

Sab, 11 Mei, 05:17

Microsoft CMT <email@mnr-cmt.org>
Balas-Ke: ICSC Info <icsc.info@gmail.com>
Ke: Muthia Kamila <12050321685@students.uin-suska.ac.id>
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We are notifying you of your paper status for 2024 International Conference on Circuit, Systems and Communication ,
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Muthia Kamila, Muhammad Luthfi Hamzah, Tengku Khairil Ahsyar and Syaifulah

2024 International Conference on Circult, Systems and Communication (ICCS-C)

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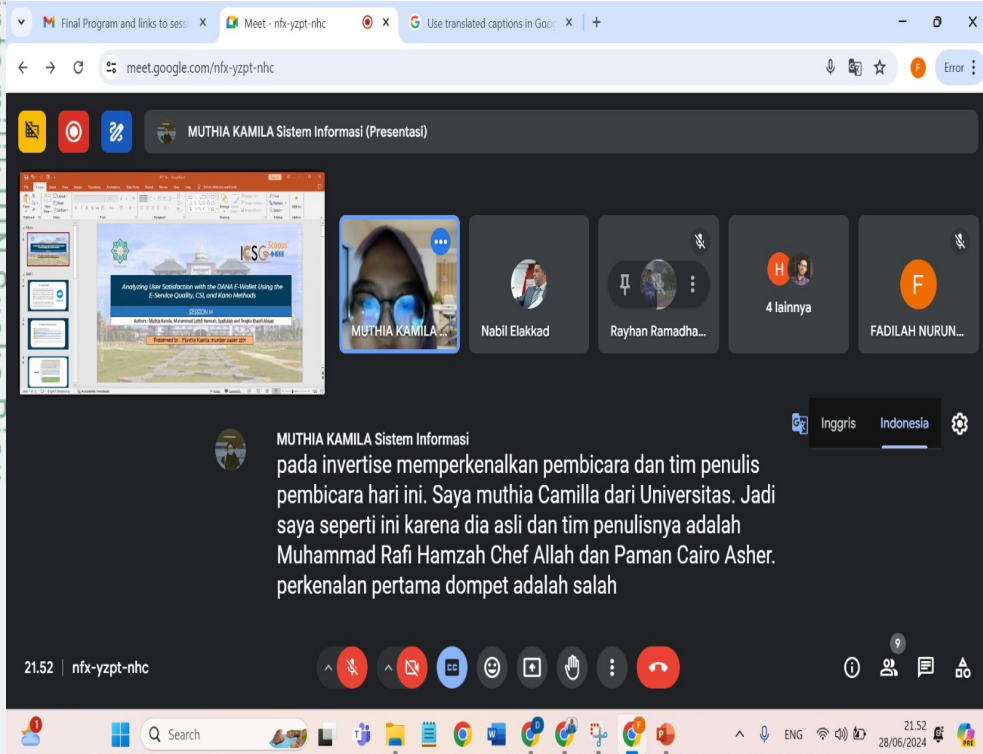
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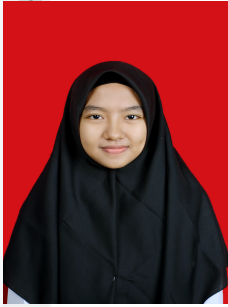
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DAFTAR RIWAYAT HIDUP



Peneliti lahir di Kota Pekanbaru, Provinsi Riau, pada tanggal 09 Agustus 2002, yang diberi nama Muthia Kamila. Anak dari pasangan Bapak Alm. H. Miswardi Dipo dan Ibu Hj. Nanik Wahyuni merupakan anak terakhir dari empat bersaudara. Kontak peneliti: no. hp 0823-8228-0416 dan email: 12050321685@students.uinsuska.ac.id. Peneliti bersekolah di SD Negeri 5 Pekanbaru pada tahun 2008 dan menamatkan pendidikan pada tahun 2014. Pada tahun yang sama, peneliti melanjutkan pendidikan di SMP Negeri 3 Pekanbaru dan menamatkan pendidikan pada tahun 2017. Pada tahun 2017, peneliti melanjutkan pendidikan di SMA Negeri 2 Pekanbaru dengan jurusan MIPA dan menamatkan pendidikan pada tahun 2020. Peneliti melanjutkan pendidikan Strata Satu (S1) di Universitas Islam Negeri Sultan Syarif Kasim Riau pada Fakultas Sains dan Teknologi, Program Studi Sistem Informasi pada tahun 2020. Selama menjadi mahasiswa, peneliti pernah melaksanakan Kerja Praktek di Dinas Pendapatan Daerah Kota Pekanbaru dengan fokus utama dalam menganalisis Sistem Informasi Manajemen Pajak Bumi Bangunan. Peneliti juga mengikuti Pengabdian Kuliah Kerja Nyata (KKN) di Desa Sungai Gondang, Kandis, Kabupaten Siak. Peneliti pernah bergabung dalam Himpunan Mahasiswa Sistem Informasi (HIMASI) periode 2021-2022 dan organisasi ISOC Research divisi pengembangan dan penelitian. Pada penelitian Tugas Akhir ini, peneliti mengambil judul tentang Analisis Kepuasan Pengguna *E-Wallet* DANA Menggunakan Metode *E-Service Quality*, *CSI*, dan *KANO*.

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