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Analysis of User Satisfaction of the Haji Pintar Application Using the Pieces Method at the Office of the Ministry of Religious Affairs of Palembang City

Rachman Agung Prabowo[1], Merry Agustina[2], Tata Sutabri[3], Iin Saprina[4]

System Information, University Bina Darma, Palembang City, Indonesia
e-mail: [1]rachmanagungprabowo728@gmail.com, [2]merry_agst@binadarma.ac.id,
[3]tata.sutabri@gmail.com, [4]aflasaja99@gmail.com

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Abstract

The problem that occurs in the Haji Pintar application is that there are often inappropriate departure estimates, where they should depart in 2025 listed in the application and there is a change in departure time every time they are checked in the application. There are often errors in the application when viewing information on the departure number of pilgrims. There are often data errors when checking the portion number, where the data that appears other people's names, besides that sometimes the prosi number cannot be found.The purpose of this study is to determine the analysis of user satisfac-tion with the Application Haji Pintar using the PIECES method. This research method is a descriptive method with a quantitative research approach. The population in this study is all students of the Palembang City Ministry of Religious Affairs Office who use the application Haji Pintar as many as 771 Haji Pintar Application users in 2022. The sam-pling technique using random sampling obtained a sample of 30 people. The results of the study The PIECES indicator variable has a relation-ship with user satisfaction seen from the value of Fcalculate 3.437 > Ftable 2.51, so it can be concluded that all variables together have a positive effect on user satisfaction. The value of the satisfaction level of users of the Haji Pintar Application using the PIECES method on application users, seen from the R Square value of 47.3%. Which means that users of the Application Haji Pintar at the Office of the Ministry of Religious Affairs of Palembang City are satisfied with user satisfaction on the data at the Office of the Ministry of Religious Af-fairs of Palembang City.

Keywords: Application; Satisfaction; PIECES

1. Introduction

The progress and development of the world economy is very dynamic, especially in the era of Industry 4.0 which demands everything to be fast and accurate. The challenges of the era that make technology a medium in helping all human activities and have a role and dominating portion in the era of the Internet of Things (IoT), Big Data, and Artificial Intelligence (AI). The role of humans will be reduced in doing things or activities that are routine and replaced by technology (Santoso and Zusrony, 2020). The use of information technology tends to be identified with the formulation of work that is faster, accurate, effective and efficient both in terms of time and cost (Klarasati & Sutabri, 2023). There are several important things that must be considered as factors that are used as determinants so that a system can function properly, namely the use of adequate systems and technology. The quality of service of an agency will be difficult to improve if it does not have an adequate system (Novitasari & Sutabri, 2023). The development of technology in all fields is very influential on the progress and development of an organization. Moving forward here can mean a paradigm shift in the problem of efficiency and effectiveness of time and energy, as well as at the Office of the Ministry of Religious Affairs of Palembang City the role of technology is one of the supporting factors in assisting its duties, in the formulation, determination, and implementation of policies in the field of community guidance, Hajj and Umrah, and religious and religious education. Information Technology Service Management (ITSM) is information technology service management, a method that can be used in

managing the information technology system of the Haji Pintar application at the Office of the Ministry of Religious Affairs of Palembang City (Ikhtiarti & Sutabri, 2023).

Management information system (MIS) is the application of information systems in organizations to support information needed for all levels of management. It is well known that information is very important for management in decision making (Sutabri, 2014). The implementation of Hajj by the Government of Indonesia has now experienced rapid progress. The role of the Government of Indonesia in the implementation of Hajj is not only to control and supervise but is carried out in order to serve and protect to be more optimal in its implementation. The implementation of Hajj with a computerized and integrated system will be very helpful in providing maximum service to pilgrims prospective for Hajj and Umrah. The Haji Pintar application is a platform where we want to bring Hajj closer to a fairly renewable generation (millennials) because it can check the departure portion number, can check the existence of valid Umrah Travel Organizers (PPIU) and Special Hajj Organizers (PIHK). In addition, the Haji Pintar Application is the government's effort to provide convenience to Hajj pilgrims and the public in accessing various information about Hajj, especially in Hajj registration.

The application also contains various kinds of information related to preparation, Hajj travel, the process of Hajj in the holy land, travel schedules and Hajj from pilgrims can see portions and schedules of return departures, location maps and directions integrated with cellphone GPS, implementation and manasik prayers, accommodation information, lodging information in Mecca and Medina, maktab tent locations, as well as information on consumption menus during Hajj in the Holy Land. However, these efforts are also not free from obstacles in the field, namely there are often inappropriate departure estimates, where they should depart in 2025 listed in the application and there is a change in departure time every time checked in the application. There are often errors in the application when viewing information on the departure number of pilgrims. There are often data errors when checking the portion number, where the data that appears other people's names, besides that sometimes the prosi number cannot be found. With the problem in the application, a method is needed to explain individual acceptance of the use of information technology systems, in this study the method used is PIECES.

The PIECES method is a method in terms of performance, information, economy, efficiency, security and service used to find out the problems that exist in a system, so that existing solutions can be known so that they can be used as reference material for the development of the system itself. PIECES is a framework method used to measure the value of whether or not the variables applied and whether the information system is in service quality. Researchers choose this method as a data analysis technique to measure the value of whether customers are satisfied with information system services or not. There are six variables, namely Performance, Information and Data, Economics, Control and Security, Efficiency, and Service (Aditya & Jaya, 2022). Pieces is one method that can be used in assessing whether a system already has conformity with its purpose built (Nuryanti, 2017). The results of the study conducted by Afrina, J. N. Utamajaya, and Surmiati the pieces method provide an overview of jamride partners in the Penajam sub-district of North Penajam Paser Regency in services based on the variables of Performance, Economic, Control and security, Efficiency and Services (Afrina et al., 2022).

Of course, information technology can also change the behavior of people in carrying out their activities that were originally done manually and can now be done digitally for efficiency and effectiveness. more effective. Technology services that respond well to information needs are important to ensure customer comfort and satisfaction (Jakaria & Utamajaya, 2022). Based on this background description, the author is interested in analyzing the user satisfaction of the Haji Pintar application as measured from the PIECES model approach with the aim of knowing the analysis of user satisfaction of the Haji Pintar application using the PIECES method at the office of the Ministry of Religious Affairs of Palembang City.

2. Research Methods

This type of study is a case study at the Office of the Ministry of Religion in Palembang City. The data type for this study is quantitative (Sugiyono, 2018). The data used is primary data,

primary data for this study includes respondents' responses based on questionnaires distributed online to determine user satisfaction on the app Haji Pintar by PIECES method at the Office of the Ministry of Religion in Palembang City. The population of this study is Haji Pintar app users in 2022 at Palembang City's Office of Religious Affairs, amounting to 771 Haji Pintar app users. The researchers sampled by random sampling method with a sample size of 30 respondents. The data collection in this study is done directly, namely a direct survey using google form (online). The data analysis technique used in this study is a quantitative approach with the help of SPSS version 25 soffware. This software is used to calculate instrument tests, classical assumption tests, and Hypotesis test (Ghozali, 2018).

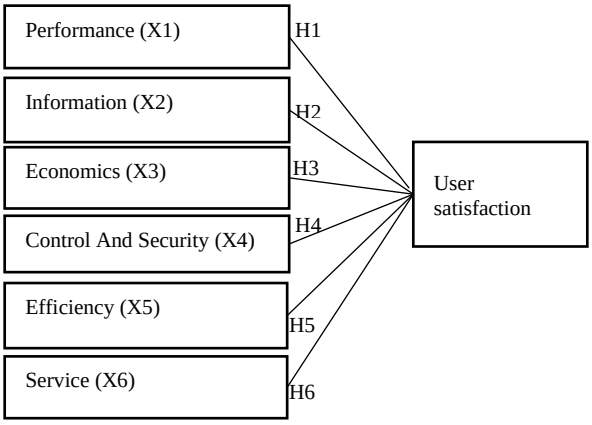

Figure 1. Research Variables

Table 1. Research Questionnaire

Dimensions	Statement
Performance	Using the Haji Pintar application is very easy to understand
	Features in the Haji Pintar application are easy to dime ngerti
	The Haji Pintar application can function optimally on your device
	The Haji Pintar application can be easily used
Information	The Haji Pintar application has a menu that is displayed can be understood well
	The initial usage tutorial of the Haji Pintar application is quite helpful for new users
Economics	The Haji Pintar application can relieve users in terms of time, cost, and energy
	Features to suit your needs
Control And Security	I feel safe when using the Haji Pintar application service
	The Haji Pintar application guarantees data security when downloading
	Can use filters and keywords (keywords) in conducting searches
Efficiency	I feel that using the Haji Pintar application is in accordance with my needs n
	The Haji Pintar application is suitable for use during Hajj and Umrah trips
	I will continue to use the Haji Pintar application during my Hajj and Umrah journey
Service	Customer service can help users who are struggling
	So far, features can provide satisfaction for you as a user
User Satisfaction	The presence of the Haji Pintar application is very helpful during Hajj and Umrah trips
	Recommend the Haji Pintar application to people who will perform Hajj and Umrah

3. Results and Discussion

In the P-Plot Data Normality Test, a data is said to be normally distributed, If the plot has a tendency to follow a straight line, then the data (error) follows the normal distribution. From the results of processing, the following results were obtained:

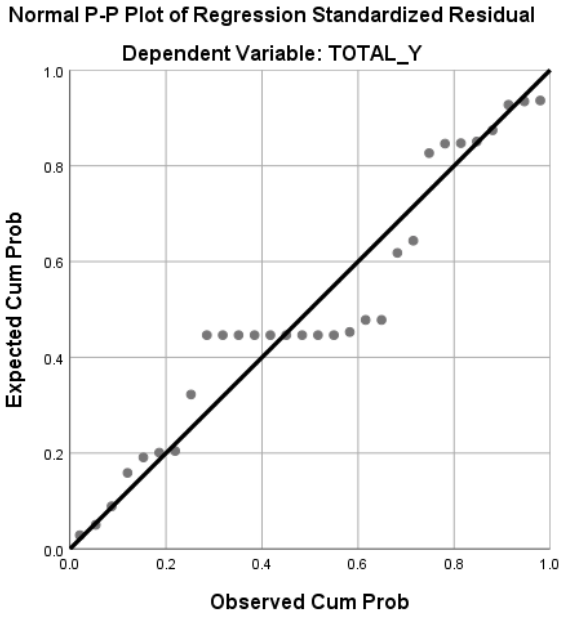

Figure 2. Test Normality with P-Plot

From figure 2. It can be seen that the plot has a tendency to follow a straight line. Thus, the data (error) can be said to follow the normal distribution.

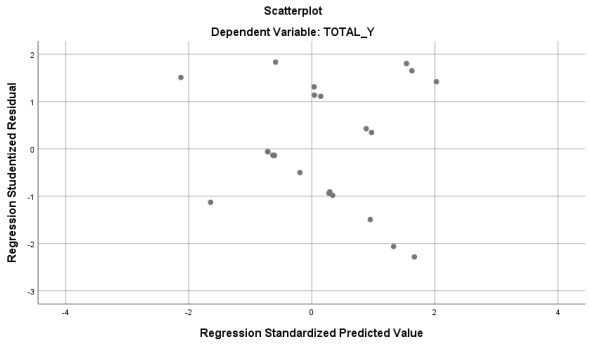

Figure 3. Heteroscedasticity Test with Scatterplot

Scatter plot in Figure 3. that there is no particular pattern because the chips are irregular above and below the 0 axis on the Y axis. It can be concluded that there is no symptom of variable variance or that H0 is acceptable.

A multicollinearity test aims to test and see if there is a high or perfect correlation between independent variables in a regression model. This test can be determined using the tolerance and the variance inflation factor (VIF). The results of the multicollinearity test are shown in Table 2.

Tabel 2. Multicollinearity Test

Model		Unstandardized Coefficients		Sig.	Collinearity Statistics	
		B	Std. Error		Tolerance	VIF
1	(Constant)	2.290	1.754	.205		
	Total_X1	-.138	.226	.549	.502	1.992
	Total_X2	.209	.270	.447	.599	1.668
	Total_X3	.063	.257	.808	.458	2.181
	Total_X4	-.100	.243	.684	.133	7.511
	Total_X5	.249	.139	.087	.501	1.997
	Total_X6	.473	.315	.147	.193	5.174

In the coefficient table you can notice that the VIF values are in the range of more than 0.1 and less than 10, namely X1 = 1.992, X2 = 1.668, X3 = 2.181, X4 = 7.511, X5 = 1.997, and X6 = 5.174. Then it can be said that VIF values are more than 0.1 and less than 10 and multicollinearity is not detected.

T test is one of the statistical tests that often compare the calculated t value with the table T. The test can be used to test a hypothesis based on the t value obtained from the statistic calculation (T Count) then compare with the t values contained in the table (T Table). Table T can be obtained from the statistics books you have. Usually in the appendix there is a T table as well as other tables commonly used in statistical testing. Based on the analysis results, it is possible to know the results of the t-test as shown in the following table:

Table 3. T test

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	2.290	1.754	1.305	.205
	TOTAL_X1	-.138	.226	-.609	.549
	TOTAL_X2	.209	.270	.774	.447
	TOTAL_X3	.063	.257	.246	.808
	TOTAL_X4	-.100	.243	-.412	.684
	TOTAL_X5	.249	.139	1.790	.087
	TOTAL_X6	.473	.315	1.501	.147

The result of calculating the performance variable (X1) is 0.549. Due to the Sig value. 0.549 > probability 0.05, so it is possible to conclude H1 or the first hypothesis is rejected. This means that performance (X1) has no effect on user satisfaction (Y). Based on the above SPSS output, it is known that the value of the calculated performance variable t(X1) is -0.609. Therefore, the calculated value of -0.609 < in table 2,042, so we can conclude that H1 is rejected, that means there is no relationship between performance (X1) and user satisfaction (Y). The variable information (X2) is 0.447. Due to the Sig value. 0.447 > probability 0.05, so we can conclude H2 or the second hypothesis is accepted. Based on the above SPSS output, we know that the value of t calculated variable information (X2) is 0.774, then the value of calculated t is 0.774 < t table 2,042, so we can conclude to reject H2, that is, there is no relationship between data (X2) and user satisfaction (Y).

The economic variable (X3) is 0.009. Because of the Sig value. 0.009 < probability > t table 2.042, so we can conclude that accept H3, that is, there is an economic relationship (X3) with user satisfaction (Y). The return variable (X4) is 0.684. Because of the Sig value. 0.684 > probability 0.05. Based on the above SPSS output, it is known that the effective t value of the calculated variable (X4) is -0.412, the calculated t value is -0.412 < t table 2,042 so we can conclude to reject H4, that is, there is no relationship between efficiency (X4) and user satisfaction (Y). The effective variable (X5) is

0.087. Due to the Sig value. 0.087 > probability 0.05. Based on the above SPSS results, it is known that the calculated efficiency t value (X5) is 1,790, the calculated t value is 1,790 < t table is 2,042 so it can be concluded to reject H4, that is, there is no relationship between efficiency (X5) and user satisfaction (Y). The service variable (X6) is 0.147. Because of the Sig value. 0.147 > probability 0.05. Based on the above SPSS output, it is known that the value of t calculation service variable (X6) is 1.501, the value of t count is 1.501 < table t is 2,042, so it can be concluded that H6 is rejected, that is, there is no relationship between service (X6) and user satisfaction (Y).

Test F aims to find whether the independent variables together (stimultan) affect the dependent variable. Test F is performed to see the effect of all independent variables together on the dependent variable. The F test result of the table below will explain, the F number and the table F, get the following result:

Table 4. F Test (Anova)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.075	6	1.179	3.437	014[b]
Residual	7.891	23	.343		
Total	14.967	29			

Ftabel = f (k ; n – k) = f (6 ; 30 – 6)= f (6 ; 24)

So table f is IV Based on the above result, we know that the significant value of the influence of X1, X2, X3, X4, X5 and X6 together on Y is 0.000 < 0 > F Table 2.51, so we have can conclude that H1 is acceptable, that is, there is a relationship between X1, X2, X3, X4, X5 and X6 and Y. The coefficient of determination test is used to determine how well the endogenous variables simultaneously explain the exogenous variables. The higher the R2 value, the better the predictive model of the proposed research model.

Table 5. Determination Test (Anova)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.688a	.473	.335	.58575

Based on the above result, we know that R squared is 0.473, which means that the influence of the variables X1, X2, X3, X4, X5 and X6 together on Y is 47.3%. While the remaining 52.7% are influenced by variables other than the independent variables X1, X2, X3, X4, X5 and X6.

Based on the results of the questionnaire distributed and processed by SPSS 25 software, it shows that, in 4 measured variables are content (X1), information (X2), economy (X3), efficiency (X4).) and efficiency (X5), it generates a metric of user satisfaction with the Haji Pintar app using the PIECES method, which has a value that causes many questions from respondents to choose yes, because So the level of user satisfaction for Haji Pintar application by PIECES method in the Office of the Ministry of Religious Affairs of Palembang city has good users satisfaction of customers who have used it. Furthermore, for the significant value of the calculation > ftable of the variables X1, X2, X3, X4, X5 and X6 combined, the Y is 0.000 < 0 > Ftable 2.51 so we can conclude that all the variables All variables add up to be positive. Affects the quality of users of the Haji Pintar application. It shows the user satisfaction for Haji Pintar application by PIECES method at the office of the ministry of religion in Palembang city

The results of measurement analysis show that there is no relationship between performance (X1) and user satisfaction (Y), there is no information relationship (X2) with user satisfaction (Y), there is no relationship between economy (X3) and user satisfaction (Y), no efficiency relationship (X4) with user satisfaction (Y), no relationship efficiency (X5) with user satisfaction (Y) and no service relationship (X6) with user satisfaction (Y). For the overall relationship between PIECES content (X1), information (X2), economy (X3), efficiency (X4) and efficiency (X5) and service (X6) with customer satisfaction customer' user (Y), concluding that all the same, variables have a positive impact on user satisfaction. It shows the user satisfaction for Haji Pintar application by PIECES method at the office of the ministry of religion in Palembang city.

The results of this study are consistent with the results of Safarudin, where performance aspect is 4.29, information aspect is 4.38, economic aspect is 4.49, control & security aspect is 4.59, the efficiency aspect is 4.63 and finally the service aspect is 4.33. The performance aspect online tool uses throughput measured by page size with results from Pingdom of 2MB, GT Metrix of 3.26MB and Webpagetest of 3.31MB. . Security and control aspects Using online tools Qualys SSL Labs is

rated A and using UpGuard earned a CSTAR score of 877. Respondents in this study were members of the Tokopedia Batam Community but it turns out only 30% of users use Tokopedia's unique platform (Safarudin, 2018). In addition, Canta with the research title Analysis of Satisfaction with the Use of the Grab Customer Application by Using the PIECES Framework in SME IT STMIK BI. In evaluating the information system, the level of satisfaction of grab customers in Balikpapan City obtained an average value for each domain, namely domain performance obtained a value of 4.31 with the category of very satisfied, information & data obtained a value of 4.27 with the category of very satisfied, economics obtained a value of 4.07 with the category of satisfied, control & security obtained a value of 4.21 with the category of very satisfied, efficiency obtained a value of 4.19 with the category of satisfied, Services obtained a score of 4.27 in the very satisfied category (Canta, 2019).

Based on the above explanation, measuring the satisfaction of users of the Haji Pintar application using the PIECES method at the office of the Ministry of Religion in Palembang city is sufficient according to the user satisfaction level of the 6 calculated variables and measuring user satisfaction of Haji Pintar App by PIECES method at the Office of the Ministry of Religion in Palembang city does not need much improvement because according to the results obtained by the researcher, the analysis of the satisfaction of the users using the Haji Pintar App using the PIECES method at the Office of the Ministry of Religious Affairs of Palembang City is of sufficient quality in the eyes of the users of the Haji Pintar App and sufficient to meet the operational needs of the application.

4. Conclusion

Conclusions are made based on the results of research which is the answer to the research question. This template was created to standardize the writing of papers in the Jurnal Informatika Universitas Pamulang. Based on the results of data processing and questionnaires filled out by respondents, it can be concluded as follows: 1) The PIECES indicator variable has a relationship with user satisfaction as seen from the value Fcalculate 3.437 > Ftable 2.51, so we can conclude that all the variables combined have a positive impact on the satisfaction. user satisfaction. It shows the user satisfaction for Haji Pintar application by PIECES method at the office of the ministry of religion in Palembang city. 2) Haji Pintar app user satisfaction value by PIECES method for app users as seen from R squared value is 47.3%. It means that users of the Haji Pintar app from the Ministry of Religion office in Palembang city are quite satisfied with the user satisfaction with the data from the Ministry of Religion office in Palembang city.

References

Aditya, N. M. B., & Jaya, J. N. U. (2022). Penerapan Metode PIECES Framework Pada Tingkat Kepuasan Sistem Informasi Layanan Aplikasi Myindihome. *Jurnal Sistem Komputer Dan Informatika (JSON)*, *3*(3), 325–332. https://doi.org/10.30865/json.v3i3.3964

Afrina, Utamajaya, J. N., & Surmiati. (2022). *Analisis Tingkat Kepuasan Pelanggan Aplikasi Jamride Penajam Paser Utara Menggunakan Metode PIECES*. *9*(2), 359–366. https://doi.org/10.30865/jurikom.v9i2.4048

Canta, D. S. (2019). Analisis Kepuasan Penggunaan Aplikasi Grab Customer dengan Menggunakan PIECES Framework Pada UKM IT. *J-Sim : Jurnal Sistem Informasi*, 19–23.

Ghozali. (2018). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 25*. Badan Penerbit Universitas Diponegoro.

Ikhtiarti, D., & Sutabri, T. (2023). Analisis IT Service Management (ITSM) Layanan E-Learning Universitas Bina Darma Menggunakan Framework ITIL V3. *Jurnal Penelitian Teknik Informatika*, *6*(April), 48–53.

Jakaria, & Utamajaya, J. N. (2022). Analisis Kepuasan Pengguna Aplikasi Lazada Masyarakat Penajam Menggunakan Metode Pieces Framework. *JURIKOM (Jurnal Riset Komputer)*, *9*(2), 464–471. https://doi.org/10.30865/jurikom.v9i2.4091

Klarasati, R., & Sutabri, T. (2023). Analisis Pengukuran Tingkat Kepuasan Dosen Terhadap Sistem Informasi Akademik Menggunakan Metode Usability Pada Universitas Prabumulih. *Jurnal Penelitian Teknik Informatika*, *6*(April), 12–17.

Novitasari, A., & Sutabri, T. (2023). Analisis Kualitas Layanan Website Bkpsdm Kota Palembang Menggunakan Metode Webqual. *Indonesian Journal of Multidisciplinary on Social and Technology*, *1*(2), 88–94.

Nuryanti, Y. (2017). Kajian Penerapan Sistem Informasi Akademik Dengan Menggunakan Metode PIECES Dalam Meningkatkan Kepuasan Civitas Akademika STIE-STMIK Insan Pembangunan. *Jurnal Insan Pembangunan Sistem Informasi Dan Komputer (IPSIKOM)*, *5*(2), 1–18.

Safarudin, M. S. (2018). Analisis Kepuasan Pengguna

Marketplace Tokopedia Dengan Metode PIECES di Tokopedia Community Batam. *Seminar Nasional Ilmu Sosial Dan Teknologi (SNISTEK)*, *1*, 109–114.

Santoso and Zusrony. (2020). Analisis Persepsi Pengguna Aplikasi Payment Berbasis Fintech Menggunakan Technology Acceptance Model (TAM). *Jurnal Teknologi Informasi Dan Komunikasi*, *11*(1), 49–54. https://doi.org/10.51903/jtikp.v11i1.150

Sugiyono. (2018). *Metode Penelitian Kuantitaif Kualitatif dan R & D*. Bandung. Alfabeta.

Sutabri, T. (2014). *Pengantar Peknologi Informasi*. Yogyakarta. CV. Andi Offset.