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Analysis Information System Primary Care BPJS Health at Puskesmas in Mukomuko Regency Using Technology Acceptance Model (TAM)

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Abstract

BPJS is an agency that administers the National Health Insurance (JKN). BPJS Health developed a BPJS Primary Care (P-Care) that is accessed using the internet that integrates data into the BPJS server covering the patient registration process, diagnosis, therapy to laboratory services. So that it can make it easier for the medical team to provide treatment. The application of the Pcare BPJS information system in Mukomuko Regency has been used since 2015 and is always experiencing system development and updates. This information system cannot be used for the public, meaning that it is used only by health facilities that have officially registered with the BPJS who have been given access rights and passwords to access them. This study aims to analyze operator acceptance of the BPJS P-Care information system at the Mukomuko District Health Center using the Technology Acceptance Model (TAM) method which consists of 5 variables, namely Perceived Ease of Use (perceived ease of use), Perceived Usefulness (perceived usefulness), Attitude Towards use (attitude towards use), Behavior Intention to Use (interest in usage behavior) and Actual Usage (actual use). The results of this study are the identification of the acceptance of 16 puskesmas operators in Mukomuko Regency to the BPJS Health P-Care information system which will later become input for the BPJS in improving the system they have created.

Keywords
analysis; primary care (p-care); technology acceptance model

I. Introduction

The use of information systems in health service agencies is increasingly needed, especially in the implementation of the National Health Insurance (JKN) organized by the Social Security Administering Body (BPJS). BPJS Health has an information system called *Primary Care (P-Care)* BPJS Health. Primary *Care (P-Care)* functions to integrate all services from every part of the basic health care institution to the referral health service institution.

In Mukomuko Regency there are 16 health centers that have been integrated with the *Primary care* and every puskesmas in Mukomuko Regency there are 2-4 operators holding the *P-Care* BPJS Health this.information system *P-Care* at the Mukomuko District Health Center has been implemented since 2015. However, as long as P-Care has been implemented, no research has been conducted that discusses the acceptance of *Primary Care (P-Care)* BPJS Kesehatan in 16 Puskesmas in Mukomuko Regency (Rahayu et al., 2017). This research was conducted to identify the level of acceptance of the *Primary Care (P-Care) application operator to the Primary Care (P-Care)* application . BPJS Health in 16 Puskesmas in Mukomuko Regency. So that later the implementation of reporting to the

BPJS is successful or not the implementation of a *P-Care* BPJS Health information system in 16 health centers in Mukomuko Regency.

User acceptance of an information is very essential to do because it is an indication of a system itself being accepted or not by the user to assist the completion of goals in a job (Pramiyati & Mahfud, 2019). So to find out the acceptance of the *Primary Care* BPJS Health information system to operators in 16 health centers in Mukomuko Regency so that the author will conduct research using the title "Analysis of Acceptance of Primary Care BPJS Health Information Systems Using *Technology Acceptance Model* (TAM) at Puskesmas Mukomuko Regency to determine acceptance to operators in the *Primary Care (P-Care)* BPJS Health using the TAM *(Technology Acceptance Model) method.*

II. Review of Literature

2.1 Information Systems

Analysis Definition of Information System Analysis according to Robert A. Leitch and K. Davis in (Nurlaela, 2020) is a breakdown of an information system within an organization where the needs of daily transaction processing, support operations, managerial nature and activities strategic objectives of an organization are brought together and provide certain outside parties with the required reports.

According to Hartono in (M.TI, 2021), information system analysis is an activity that begins with examining a complete information system into elements with the aim of recognizing and assessing problems, opportunities that provide suggestions for improvement.

Meanwhile, according to (Prianto et al., 2020), information system analysis is a method of solving problems by uncovering the elements by examining these parts to achieve the goals of a system to be built.

From some of the opinions above, it can be concluded that the analysis of information systems is an important stage which consists of studying the work process of the system that has been used for development so that it can be known and made improvements to the system.

2.2 Primary Care BPJS Health

Primary Care BPJS means a patient information service owned by the BPJS Health that uses the internet and is computer-based. BPJS Health provides this system for primary (basic) health facilities to make it easier to access data to the BPJS server as well as registration and medical services.

According to (Saputri & Kunang, 2021) *Primary Care* (*P-Care*) BPJS Health is a service information system for BPJS Health participants that is accessed online specifically for users of first-level health facilities (FKTP).

Primary Care BPJS Health is a patient service information system that is intended for patients with computer-based BPJS patient status and is connected to the network.

From the above statement, it can be concluded that *Primary Care* is an information/application system used by First Level Health Facilities (FKTP) such as puskesmas to facilitate registration and medical services.

2.3 TAM (Technology Acceptance Model)

TAM (Technology Acceptance Model) is a technology acceptance model which is one of the theories regarding the use of information technology systems which is considered very influential and is generally intended to express individual acceptance of

the use of information technology systems.

The TAM method is a method that has the most impactful acceptance of technology and is the most widely used in the field of *Technology Information System studies.* In the TAM model, there are 5 constructs, namely perceived ease of use, perceived usefulness, attitude toward using, behavioral intention to use and actual use. .

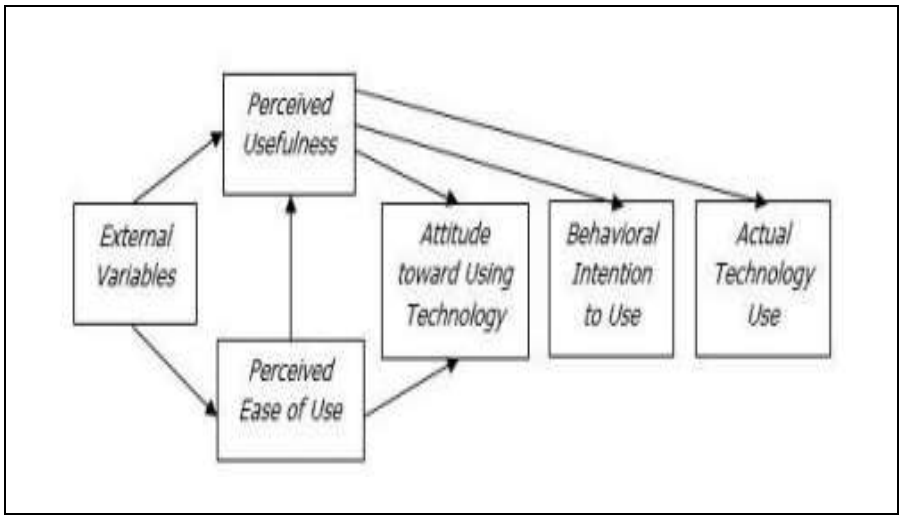


Figure 1. *TAM Method*

a. *External variables* are variables that cannot be controlled that can affect the results of the study. With the external variable, it will show the relationship between the independent variable X and the dependent variable Y. The external variables are accessibility *and* work *experience.*
b. Perceived *ease of use* describes the level of ease of an information system that the use of information systems is practical and does not require hard work in its use.
c. Perceived *usefulness,* which describes the level of usefulness of an information system that the use of an information system will improve performance.
d. Attitude *towards use* is the tendency of the initial response from favorable or unfavorable conditions to a particular system.
e. Behavioral intention to use *(behavior intention to use)* is the use of interest in the form of a desire to continue or not to use a certain information system.
f. The *technology (actual technology use)* is a true situation for application to the Davis system in (Rahayu et al., 2017).

III. Research Method

3.1 Time and Place of Research

This research was carried out from November 2021 to March 2022. This research was carried out at the BPJS Office and 16 Puskesmas in Mukomuko Regency which is located at Jalan Raya Lintas Barat Sumatera No. 678, Mukomuko, Bengkulu 38714.

3.2 Thinking Framework

The framework of thinking in this study is to use the theoretical framework of the TAM (*Technology Acceptance Model)* and the addition of 2 external variables consisting of *Work Experience* as X1 and *Accessibility* as X2. The TAM method variables are *Perceived Usefulness* as X3, *Perceived Ease Of Use* as X3 and *Behavioral Intention To*

Use as X3 and the dependent variable is *Actual Usage* as Y (the theoretical framework can be seen in the image below)

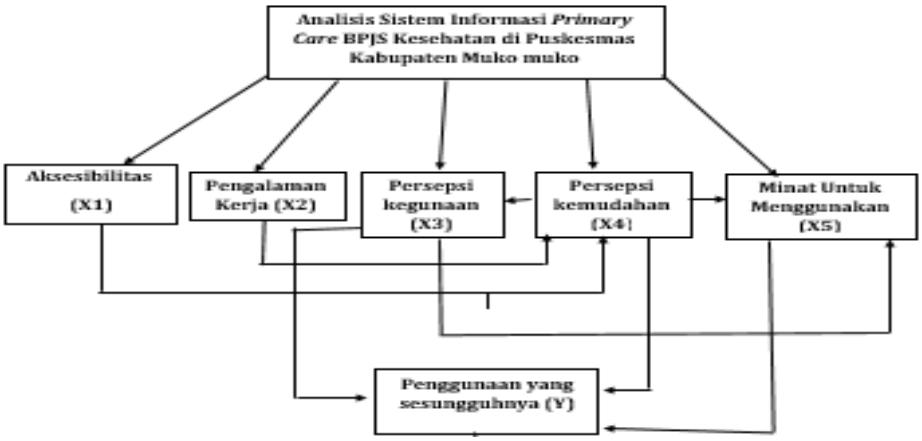


Figure 1. *Thinking Framework*

3.3 Research Variables

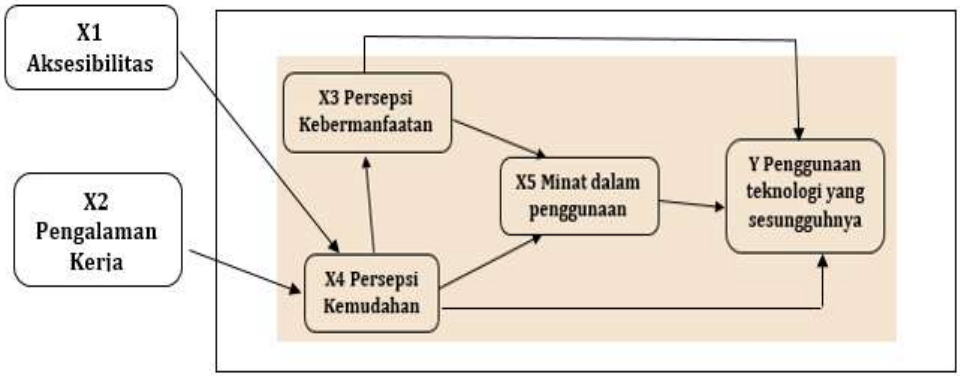


Figure 2. *Research Variable*

a. Accessibility *(accessibility)* ***X1***
   Describes that a system used is able to provide timely and smooth access.
b. Work experience (*work experience)* **X2**
   Describes the length of time or period of work that has been passed by someone who can understand the tasks of a job and have done them well. In research (Widiastutik & Oktaviani, 2020) work experience affects perceptions of ease.
c. Perceived *the* usefulness **X3**
   Level of usefulness of an information system that the use of the system will improve user performance. According to (Ratri, 2017) the perception of usefulness is influenced by the perception of convenience.
d. Perceived *easy to use* **X4**
   Describes the level of ease of a system that the use of the information system used is practical and does not require hard work from its users.
e. Interest to use *(behavior intention to use)* **(X5)**
   The *intention to use (behavior intention to use)* means that the level of interest in using a certain technology is intended, namely whether or not the information system is still used in the future.

f. The actual use of technology (actual technology use) **(Y)**

The actual use of technology (actual technology use) is a situation that is true for application to the system.

3.4 Research Hypothesis

Hypothesis is a temporary answer to the research problem formulation. Research that uses hypotheses is quantitative research. Furthermore, the hypothesis will be tested by researchers using a quantitative approach.

H1: Accessibility has an influence on the perception of convenience.
H2: Work experience has an influence on perceived ease of use.
H3: Perception of convenience has an influence on perceived usefulness.
H4: Perception of convenience has an influence on interest in using.
H5: Perception of convenience has an influence on the actual use of technology.
H6: Perceived usefulness has an influence on interest in using.
H7: Perceived usability has an influence on actual technology use.
H8: Intention to use has an influence on the actual use of technology.
H9: Perceived usefulness, perceived ease of use and interest in using have an influence on the actual use of technology.

3.5 Population and Sample

Population is a generalization area consisting of objects or subjects that have certain qualities and categories determined by the researcher to be studied and then conclusions are drawn. The population in this study involves user operators in every 16 health centers in Mukomuko Regency, amounting to 54 people.

The sample is part of the population. All parts of the population must have a chance to be taken as part of the sample. This means that the sample size must be sufficient to describe the population. The sample in this study is a Puskesmas operator who uses BPJS *P-Care services.* In this study, to determine the research sample using the Slovin formula, namely:

$$n = \frac{N}{1+Ne^2}$$

Where:
n : Sample Size
N : Population Size
e : Desired Significance Level : 5% (0.05)
1: Constant
So:
n = 54 / (1 + (54 x 0.05^2))
n = 54/ (1 + (54 x 0.0025))
n = 54/ (1 + 0.135) n = 54/1.135
n = 47.5

Then we get the sample results from the total population, namely rounded up to 48 respondents with a significance level of 5%.

IV. Results and Discussion

4.1 Validity Test

Based on the validity test with a significant r table of 0.284 using the *SPSS 20* , the validity test is as follows.

Table 1. Validity Test

Variable	No. Instrument	r arithmetic
X1	X1.1	0.903
	X1.2	0.958
	X1.3	0.915
X2	X2.1	0.932
	X2.2	0.951
	X23	0.951
	X2.4	0.902
X3	X3.1	0.932
	X3.2	0.945
	X3.3	0.915
	X3.4	0.859
X4	X4 .1	0934
	X4.2	0.945
	X4.3	0.931
	X4.4	0.920
X5	X5.1	0.728
	X5.2	0.804
	X5.3	0.779
Y	Y.1	0.888
	Y.2	0.890
	Y.3	0.921

From table 1 it can be seen that all instruments have correlation value (r count) above the value of r table for n (number of samples) = 48 respondents. So, all the instruments used were declared valid.

4.2 Reliability Test

Based on the reliability test with Cronbach's alpha number 0.60 using the *SPSS 20*, the reliability test is as follows.

Table 2. Calculation Results

Variable	Cronbach's Alpha	Information
X1	0.913	Reliable
X2	0.951	Reliable
X3	0.932	Reliable
X4	0.947	Reliable
X5	0.649	Reliable
Y	0.879	Reliable

The results of the reliability test variable obtained the value of the reliability coefficient of variable X1 of 0.913, variable X2 of 0.913, variable X3 of 0.9 0.932, X4 variable is 0.947, X5 variable is 0.649 and Y is 0.897. Based on the reliability coefficient value, it can be concluded that all variables in this study are reliable or consistent so that they can be used as research instruments.

4.3 Normality Test

Based on the normality test with a significance value of 0.05 using the *SPSS 20* , the normality test is as follows.

Table 3. Normality Test Calculation Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		48
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	2,01782813
Most Extreme Differences	Absolute	,162
	Positive	,102
	Negative	-,162
Kolmogorov-Smirnov Z		1,125
Asymp. Sig. (2-tailed)		,159

a. Test distribution is Normal.
b. Calculated from data.

Based on the results of the normality test, it is known that the significance value is 0.159 > 0.05, so it can be concluded that the residual value is normally distributed.

4.4 Multicollinearity Test

Based on the multicollinearity test using the *SPSS 20* , the multicollinearity test is as follows.

Table 4. Multicollinearity Test Calculation Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4,261	2,511		1,697	,097		
	Aksesibilitas	-,040	,110	-,054	-,368	,714	,563	1,776
	Pengalaman Kerja	-,080	,095	-,128	-,840	,406	,517	1,933
	Persepsi Kegunaan	,475	,094	,574	5,065	,000	,942	1,062
	Persepsi Kemudahan	,197	,105	,315	1,881	,067	,430	2,326
	Minat Untuk Menggunakan	-,143	,130	-,129	-1,098	,278	,883	1,133

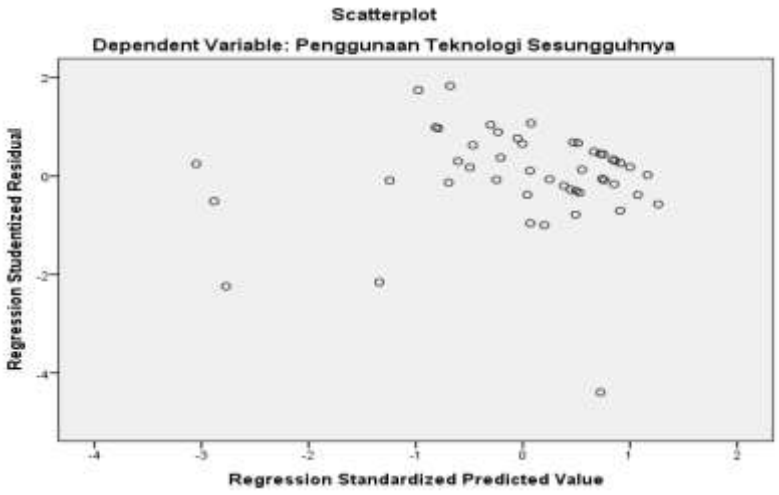
a. Dependent Variable: Penggunaan Teknologi Sesungguhnya

Based on the results of the calculations in the multicollinearity test results table, it is found that the coefficient of the VIF value is less than 10 and the *tolerance* is greater than 0.10. So this shows that in this study there is no multicollinearity problem.

4.5 Heteroscedasticity Test

Based on the heteroscedasticity test using the *SPSS 20* , the multicollinearity test is as follows.

Table 5. Heteroscedasticity Test Results



Based on the results of calculations in the scatterplot, it can be seen that the points spread randomly, both at the top of the number 0 and at the bottom of the number 0 of the vertical or Y axis. Thus, it can be concluded that there is no heteroscedasticity in this regression.

4.6 T test

1. Results of Hypothesis Testing 1

   Based on hypothesis testing using the *SPSS* 20 program, it is known that the significant value is 0.00 < 0.05 and t count = -5.066 > t table -1.68107 = It can be concluded that accessibility (X1) on perceived ease (X4) has a negative correlation / relationship means that Ha is$_{accepted}$.
2. Hypothesis Test Results 2

   Based on hypothesis testing using the *SPSS* 20 program, it is known that the significant value is 0.00 < 0.05 and t count = 6.364 > t table = 2.01808. So it can be concluded that work experience (X2) on perceived ease (X4) has a correlation/relationship and t count is positive, then the relationship between the two variables is positive so that Ha is$_{accepted}$.
3. Hypothesis Test Results 3

   Based on hypothesis testing using the *SPSS* 20 program, it is known that the significant value is 0.115 > 0.05 and t count = 1.609
   < t table = 2.01808. So it can be concluded that the perception of
   convenience (X4) on the perception of usefulness (X3) has no correlation/relationship so that H_0 accepted.
4. Hypothesis Test Results 4

   Based on hypothesis testing using the *SPSS* 20 program, it is known that the significant value is 0.570 > 0.05 and t count = -0.573 < t table = -2.01808. So it can be concluded that the perceived ease (X4) of interest in using (X5) has no correlation/relationship so that H_0 accepted.
5. Hypothesis Test Results 5

   Based on hypothesis testing using the *SPSS* 20 program, it is known that the significant value is 0.004 <0.05 and t count = 2,988 > t table = 2,01808. So it can be concluded that the perception of ease (X4) of the use of technology actually has a correlation/relationship and t count is positive, then the relationship between the two

variables is positive so that Ha is$_{accepted}$.

6. Hypothesis Test Results 6

   Based on hypothesis testing using the *SPSS* 20 program, it is known that the significant value is 0.751 > 0.05 and t count = 0.319 < t table = 2.01808. So it can be concluded that the perception of usefulness (X3) on interest in using (X5) has no correlation/relationship so that H_0 accepted.

7. Hypothesis Test Results 7

   Based on hypothesis testing using the *SPSS* 20 program, it is known that the significant value is 0.000 <0.05 and t count = 5.439 > t table = 2.01808. So it can be concluded that the perception of usefulness (X3) on the actual use of technology has a correlation/relationship so that Ha is$_{accepted}$.

8. Hypothesis Test Results 8

   Based on hypothesis testing using the *SPSS* 20 program, it is known that the significant value is 0.340 > 0.05 and t count = -0.965 < r table = = -2.01808. So it can be concluded that the interest in using (X5) towards the actual use of technology (Y) has no correlation/relationship so that H0. accepted

4.7 F Test

Based on the hypothesis test using the *SPSS* 20 program, the sig value is known. F change = 0.000 < 0.05 and calculated F value = 8.147 > F table = 2.44. So it can be concluded that accessibility, work experience, perceived convenience, perceived usefulness, interest in using together have a simultaneous relationship/correlation to the actual use of technology and the R value (correlation coefficient) is 0.702, so it can be concluded that the level of relationship between perceived convenience, perceptions of usefulness, interest in using have a relationship/correlation to the use of technology which is actually relatively strong so that H1 is accepted

V. Conclusion

Based on the results and discussion described in the previous chapter, the following conclusions can be drawn:

1. The implementation of the *Primary Care* BPJS Health *(P-Care)* is indeed needed by First Level Health Facilities (FKTP) to make it easier to register patient data and services. patients so they can work more efficiently.
2. Based on the research that has been done, it can be seen that the *Care* (*Care* information system can be well received by the *Primary Care* (*P-Care) information system operator*.
3. The results of data processing from each of the indicators that exist in each of the TAM method variables to determine the acceptance of the *Primary Care* (*P-Care)* in 16 health centers in Mukomuko Regency, namely the accessibility variable as a whole is included in the "Agree" category, variable overall work experience in the “Strongly Agree” category, the overall usability perception variable in the “Strongly Agree” category, the overall ease perception variable in the “Agree” category, the overall interest in using the variable in the “Disagree” category and the technology use variable actually in the “Strongly Agree” category. So it can be concluded that the acceptance of Primary *Care* (*P-Care)* in 16 health centers in Mukomuko Regency has been well received and implemented.
4. Based on the results of the T test using the SPSS 20 program, it can be concluded that:
   a. Accessibility has a negative effect on perceived convenience with a significance

value of 0.00 < 0.05 and t count = -5.066 > t table -1.68107.

b. Work experience has a positive effect on perceived ease with a significance value of 0.00 < 0.05 and t count = 6.364 > t table = 2.01808.
c. Perception of convenience has a positive influence on the actual use of technology with a significance value of 0.004 < 0.05 and t count = 2,988 > t table = 2,01808.
d. Perception of usability has a positive influence on the actual use of technology with a significance value of 0.000 < 0.05 and t count = 5.439 > t table = 2.01808.

5. Based on the results of the F test, it is stated that the variable X1 (accessibility), variable X2 (work experience), variable X3 (perception of convenience, variable X4 (perception of convenience) and variable X5 (interest to use) together have an effect on Y (use of The test results show that the hypothesis H_a can be accepted with a significance value of F change = 0.000 <0.05 and a calculated F value = 8.147 > F table = 2.44. While the R2 test$^{0.702}$ which means the influence of the X1 variable (accessibility), variable X2 (work experience), variable X3 (perception of convenience), variable X4 (perception of convenience) and variable X5 (interest to use) together have an effect of 70.2 while the remaining 29.8 is influenced by other factorsHunaifi

References

Hunaifi, N. (2018). *Penerapan Metode Tam Terhadap Penerimaan Sistem Informasi Produksi Garment*. 9.

Krismadinata, K., Sari, W. J., Ganefri, G., & Verawardina, U. (2020). *Pengukuran Tingkat Kebergunaan Sistem Informasi Analisis Jabatan dan Beban Kerja Menggunakan Technology Acceptance Model*. *SISTEMASI*, *9*(3), 409. https://doi.org/10.32520/stmsi.v9i3.719

M.Kep, H. S., S. Kep ,. Ns, Sp.Kep.MB, N. A., M. Kep, & M.Keb, J. A., SST. (2021). *Buku Ajar Metodologi Penelitian Kesehatan*. Ahli media Book.

M.Pd, D. I., & M.Pd, I. F., S. Pd. (2021). *Dasar-dasar Penelitian Pendidikan*. Penerbit Lakeisha.

M.TI, S. M., S. Kom. (2021). *Analisa dan Perancangan Sistem Informasi: Bintang Pustaka*. Bintang Pustaka Madani.

Muslim, B. (2018). *Analisis Sistem Informasi (Si) Terintegrasi Di Perguruan Tinggi (PT) (Studi Kasus: STT Pagar Alam).* Jurnal Teknologi Informasi MURA, 10(2), 83. https://doi.org/10.32767/jti.v10i2.375

Nurlaela, l. (2020). *Rancangan Sistem Informasi Inventory Barang Berbasis Web Studi Kasus Pada CV. Limoplast*. *2*(5), 20.

Pramiyati, T., & Mahfud, H. (2019). *Analisis Tingkat Penerimaan Pengguna Terhadap SIMBUMIL (Hasil Survei Penerimaan SIMBUMIL di Puskesmas Mandalawangi)*. *5*(1), 7.

Prianto, C., Ar-Rasyid, H., & Sembiring, N. E. (2020). *Rancang Bangun Sistem Pergudangan Semudah semudah menyeduh secangkir kopi*. Kreatif.

Rahayu, F. S., Budiyanto, D., & Palyama, D. (2017). *Analisis Penerimaan E-learning Menggunakan Technology Acceptance Model (TAM) (studi kasus: universitas atma jaya yogyakarta).* Jurnal Terapan Teknologi Informasi, 1(2), 87–98. https://doi.org/10.21460/jutei.2017.12.20.

Rahmawati, R. N., & Narsa, I. M. (2019). *Penggunaan e-learning dengan Technology Acceptance Model (TAM).* Jurnal Inovasi Teknologi Pendidikan, 6(2), 127–136. https://doi.org/10.21831/jitp.v6i2.26232.

Saputri, n., & kunang, s. O. (2021). *Analisis Penerimaan Sistem Informasi Primary Care*

BPJS *Pada Puskesmas di Kota Palembang Dengan Menggunakan Metode Technology Acceptance Model*. 9.

Sukriani, l. (2018). *Pengaruh Tingkat Pendidikan,Pengalaman Kerja, Pelatihan, dan Penggunaan Teknologi Informasi Terhadap Kualitas Laporan Keuangan Bumdes di Kecamatan Negara*. *9*(3), 13.

Wariyanti, a. S. (2018). *Penerapan Aplikasi Primary Care (P-Care) BPJS Kesehatan di UPTD Puskesmas Gilingan dan UPTD Puskesmas Kratonan Kota Surakarta*. 12.

Widiastutik, A., & Oktaviani, R. M. (2020). *Pengaruh Pengalaman Dalam Memoderasi Persepsi Kemudahan Terhadap Intensitas Penggunaan E-Filing.* Jurnal Akuntansi dan Pajak, *21*(01). https://doi.org/10.29040/jap.v21i1.1033