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ANALYSIS AND IDENTIFICATION OF NON-IMPACT FACTORS IN SMART CITY READINESS USING TECHNOLOGY ACCEPTANCE ANALYSIS: A CASE STUDY IN KAMPAR DISTRICT, INDONESIA

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ABSTRACT
Most countries start to implement Smart Cities as an innovation for urban strategy. However, not all Smart Cities implementations worked and were implemented well, because the community still not ready for the implementation of Smart City. The aim of this research is to investigate community readiness and finding low impact factors for implementing smart cities based on 5 factors, namely AU, PEOU, ATU, BIU, and PU. This research was using a qualitative study with the Technology Acceptance Model approach (TAM) to investigate the relationship between 5 factors. Based on the results of data distribution, there are 2 clusters, namely people who know about public service applications and people who are not aware of any public service applications. Furthermore, there are 3 tests conducted in this research namely T-test, F-test and Coefficient Determination Test to determine the impact and influence of the relationship between each factor. However, from the results of the t-test it was found that there were 2 relationships that had no impact because the t-count was negative and the 2 relationships between these factors were between PU ↔ AU and AU ↔ PU.
Keywords: *Kampar District, Smart City, TAM (Technology Acceptance Model), Readiness*

1. Introduction

The utilization of Information and Communications Technology (ICT) is increasingly recognized as a pivotal support for governments worldwide in their pursuit of more transparent and accountable public services. This positive trajectory is underscored by the application of cutting-edge technology, which facilitates governments in their endeavors (Alansari & Al-Sartawi, 2021; Kabir et al., 2022). The global paradigm shift towards e-Government and smart city initiatives represents a profound evolution in urban governance and public administration (Repette et al., 2021). The implementation of e-Government yields numerous advantages, including increased transparency, improved accessibility to information, streamlined public services, and enhanced decision-making processes (Yamashev et al., 2023). Complementing this, the advent of smart cities encompasses interconnected infrastructure, community engagement, and sustainable urban development (Makieła et al., 2022).

To harness the full potential of ICT within governmental functions, commonly referred to as e-government, the President of the Republic of Indonesia issued Presidential Directive No. 3 of 2003 outlining the National Policy and Strategy for the Development of E-Government. This directive elucidates how ICT can be employed to electronically support administrative information systems and furnish swift, cost-effective access to public services for all citizens (KOMINFO Kabupaten Kampar, 2017). As a result, the concept of a smart city becomes indispensable in enhancing the quality of life for residents by harnessing urban data and technology to augment service efficiency and cater to their evolving needs (Fernandez-Anez et al., 2018; Oh, 2020; Siokas et al., 2021). This comprehensive approach towards integrating ICT

into governance and urban development not only has the potential to enhance public services but also signifies a transformative shift towards more accountable and sustainable urban living.

The concept of a smart city encompasses a blend of technological, managerial, organizational, and policy innovations (Eichelberger et al., 2020). Smart governance, Smart Living, Smart Environment, Smart People, Smart Economy, and Smart Mobility constitute the foundational components of a smart city (Fernandez-Anez et al., 2018). Presently, across Indonesia, every province is fervently working towards the implementation of the Smart City framework within their respective cities and regions, a commendable effort that extends to the city of Pekanbaru and the district of Kampar.

However, the realization of the Smart City concept in areas such as Pekanbaru City and Kampar Regency is not without its share of formidable challenges and hurdles, which demand effective mitigation strategies for successful implementation. These challenges encompass a range of factors, including inadequate technology infrastructure, limited community awareness, budget constraints, privacy and data security apprehensions, technical proficiency deficits, accessibility disparities, inadequate community engagement, and unclear regulatory and policy frameworks (Karmaker et al., 2023; Meiwanda, 2020). To surmount these challenges, a concerted and collaborative effort is imperative, necessitating the active participation of local governments, private stakeholders, and the community at large.

In Pekanbaru City, notable strides have been made in implementing various technologies to bolster its smart city endeavors. Examples include Community Empowerment initiatives grounded in citizen associations (Rukun Warga (RW)), Community Empowerment initiatives centered on Houses of Worship / Complete Mosques, the introduction of the Smart Madani Card, the establishment of the Pekanbaru Command Centre, and the innovative Pekanbaru Public Service Mall (Meiwanda, 2020). However, it is noteworthy that despite these endeavors, the level of public engagement in online platforms such as Twitter has yet to attain its full potential.

The number of people in the city of Pekanbaru who have a Twitter account is about 720,000 users, while the number who actively interact with the government is only 227 (Anam et al., 2021). According to this statistic, the community is not prepared to deal with the changes in Smart City Madani, as shown by the community's participation in social media, especially Twitter, which is about 0.031% (Anam et al., 2021). The value of 0.031% is very far if you want to achieve a good score based on 2 (two) indicators of community readiness, namely, Attitude, and Response. With the interpretation of community readiness, namely 60-80% good/ready and 81-100% very ready.

Currently, The Kampar district Government is still unable to apply the Smart City concept as a solution to solving their urban problems because there is no special Master Plan for the development of Smart City. The Kampar district Government has provided several public service applications that can make it easier for the community, including SIDAMRI (Information System Towards Independent Villages), SIMPAD (Regional Original Revenue Management Information System), SICANTIK (Smart Application for Integrated Licensing Services for the Public) and SIAK (Administrative Information System).

Unfortunately, the majority of Kampar residents are ignorant of the service application that the government has made available. The lack of suitable infrastructure in the Village/Subdistrict in Kampar district, such as communication networks and the internet, as well as the government's lack of socialization, causes the public to reject Smart City technology in the form of public information services. Acceptance of technology is very important for smart cities because technology plays a key role in transforming cities into more efficient, sustainable, safe and comfortable environments to live in (Aditya et al., 2023). Therefore, in-depth research is needed to determine the readiness of various parties in Kampar district. This is done so that weaknesses that occur when implementing technology are known and can be corrected so that all the technology applied can run well.

The Technologies Acceptability Model (TAM) technique is one way of analysing the acceptance of Smart City technology by the residents of Kampar district (Chintalapati & Daruri, 2017). TAM is a popular and effective tool for evaluating the effectiveness of technology adoption (Dirgantari et al., 2020; Yang et al., 2021). The technology acceptance model (TAM) characterizes consumers based on three factors namely perceived usefulness, attitude toward use,

and perceived ease of use (Taherdoost, 2018). TAM shows that individual beliefs about the perceived ease of use and usefulness of a technological aspect influence a person's attitude toward the technology and ultimately willingness to use the technology (Rezaei et al., 2020). Additionally, TAM is an invaluable tool in understanding technology acceptance and plays an important role in guiding the development, adoption, and effective use of new technologies. This model has been used widely in a variety of contexts and will continue to be an important instrument in understanding behavioural change and technology adoption in the future (Scherer et al., 2019).

The purpose of this study is to investigate how people in Kampar district perceive the acceptance of new technologies by applying the theory of technology acceptance model (TAM). The variables/factors used by the researchers are Actual System Use (AU), Perceived Ease of Use (PEOU), Attitude Toward Using (ATU), Behavioural Intention to Use (BIU), and Perceived Usefulness (PU), which are also used as reference when creating questionnaires (Chatzopoulos et al., 2022; Kurdi et al., 2020). By measuring these variables, it is hoped that it can provide in-depth insight into how Smart City residents receive and interact with existing technology, as well as the factors that influence the acceptance of this technology. Thus, the results of this research can become a basis for developing and improving technological solutions in the Smart City context in order to increase user satisfaction and the effectiveness of existing technology.

2. Research Methods

The research methodology chosen for this research is a quantitative approach that uses surveys as a data collection method. This method is suitable for answering the research questions and stated research objectives because it allows us to measure and closely analyze various variables related to technology acceptance in the context of Smart Cities. The steps in this methodology are in line with the research objectives and context of studying technology acceptance in the Smart City concept, as seen in Figure 1.

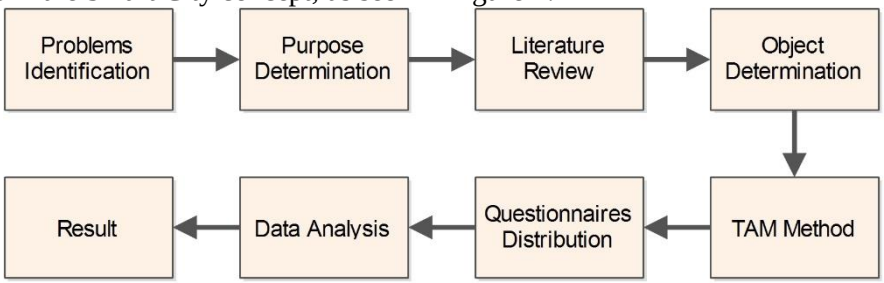

Fig. 1. Methodology

2.1. Problems Identification

Observe and find problems that exist in Kampar, especially the readiness for the acceptance of new technology by the Kampar community in implementing Smart City.

2.2. Purpose Determination

Setting goals helps to clarify the context of the goal of this research. This study intends to assess the Kampar community's readiness for new technology adoption in implementing Smart City, which relates to the government's ICT Master Plan.

2.3. Literature Review

The implementation of smart cities has been carried out since several years ago in many countries including Indonesia (Rachmawati et al., 2021). The impact of the implementation of smart city is still being studied, especially how people living in the city can accept and use the technology that has been implemented in the city. There are many factors that affect people's acceptance of the implementation of technology that occurs in their cities such as effort expectancy, self-efficacy, perceived privacy, perceived security, trust in technology and many more (Habib et al., 2020; Lehtiö et al., 2022). However, this research was focusing on five variables namely Actual System Use (AU), Perceived Ease of Use (PEOU), Attitude Toward Using (ATU), Behavioral Intention to Use (BIU), and Perceived Usefulness (PU). Furthermore, one way to measure the successful implementation of smart cities is using the technology

acceptance model approach (TAM) which has also been widely implemented in many previous studies (Alnemer, 2022; Dirgantari et al., 2020; Jnr & Petersen, 2022; Kabir et al., 2022; Kurdi et al., 2020; Oliveira & Santos, 2019; Rodzi et al., 2020).

2.4. Object Determination

Determination of the object needs to be done to become material for study in research. The object of this research is the Kampar community with an age range of 15 to 54 years. This research was conducted in several districts in Kampar. The location selection was based on the consideration that the location was the place where the Smart City was planned to be implemented. Another reason is the ease of obtaining information and data because the location is easy to reach by researchers.

This research has also received approval from DISKOMINFO Kampar to measure the readiness of new technology users in Kampar Regency. Apart from DISKOMINFO Kampar, this research also carried out ethical considerations for the community sampled in the research aimed at ensuring privacy, consent and community welfare.

2.5. TAM Method

The method TAM is one of the models used to analyze and understand the factors of acceptance of new technology. The researchers used the TAM method as a reference to create the questionnaire. The questions are based on the variables used in the TAM method, namely Behavioural Intention to Use (BIU), perceived usefulness (PU), perceived ease of use (PEOU), attitude toward use (ATU), and actual system use (AU). According to Davis (Davis, 1989), PU is a degree or scenario in which a person believes that using a particular system would improve their performance. PEOU is a degree or state in which a person feels that using a particular system requires no effort (effortless). ATU is an attitude of use as the extent to which a person evaluates and relates new technology to his work. AU is a form of external psychomotor response that can be measured by a person with real use. Then according to (Agudo-Peregrina et al., 2014) The strength of a person's intention to conduct various activities is measured by behavioral intention to use.

T-tests, F-tests, and coefficients of determination are employed in the TAM technique to determine the connection or proportion of impact between variables. The SPSS version 20 program is used for hypothesis testing. The instrument measurement technique in this study will use a Likert scale, each question is given five answers which have gradation from positive to negative, which have a choice of answers in the form of words, namely "Strongly Agree", "Agree", "Doubt", " Disagree ", and" Strongly Disagree ". The questionnaire sheet used in this study can be filled in on Google Forms.

2.6. Questionnaires Distribution

Data collection is carried out through the distribution of questionnaires using the cluster sampling method, in which a sample of 400 individuals is drawn from all districts of Kampar that constitute the population of the survey. When the population consists of groups of people or clusters rather than individuals, cluster sampling is used. In addition, the cluster sampling method is used to determine if the object or data source under study is large, as well as the population of Kampar municipality, which is 812,702 people. Based on previous Research (Ansar et al., 2017) was determines respondents/sources using the Slovin formula. The sample to be determined by the researcher used an inaccurate leeway percentage of 5%.

Slovin Formula = $n = \frac{N}{1+N\,e^2}$

explanation:

n = Size of Sample

N = Size of Population

e = The error rate tolerance in selecting sample members (5%)

The sample calculation uses the Slovin formula.

$$n = \frac{812.702}{1 + 812.702\ (0{,}05)^2}$$
$$n = \frac{812.702}{1 + 812.702\ (0{,}0025)}$$
$$n = \frac{812.702}{1 + (2031{,}755)}$$
$$n = \frac{812.702}{2032{,}755}$$

$$n = 399{,}80 = 400$$

The population in this study consisted of 21 counties in Kampar district with a population of 812,702 people, while based on the results of the calculation of Slovin's formula above, the number of samples in this study was 400 respondents. Therefore, the researchers increased the number of respondents to 1000 in order to obtain more accurate data. results become more accurate due to better representation, increasing statistical validity, and addressing uncertainty (Holtom et al., 2022). The formula used to determine the desired number used the proportional allocation formula (Sujito et al., 2019).

$n_h = \frac{N_h}{N} . n$

Note:

n_h : Number of sample members by stratum
n : Sample size
N_h : Number of population members by stratum
N : Total of population members

From formula (2), the sample used is as follows.

Table 1 - Number of Respondents per-district

No	Districts	Calculate the Formula (sample/districts)
1.	Kampar Kiri	$n_h = \frac{30.676}{812.702} \times 1000 = 38$ sample
2.	Kampar Kiri Hulu	$n_h = \frac{12.100}{812.702} \times 1000 = 15$ sample
3.	Kampar Kiri Hilir	$n_h = \frac{11.702}{812.702} \times 1000 = 14$ sample
4.	Gunung Sahilan	$n_h = \frac{20.218}{812.702} \times 1000 = 25$ sample
5.	Kampar Kiri Tengah	$n_h = \frac{27.558}{812.702} \times 1000 = 34$ sample
6.	XIII Koto Kampar	$n_h = \frac{24.673}{812.702} \times 1000 = 30$ sample
7.	Koto Kampar Hulu	$n_h = \frac{19.346}{812.702} \times 1000 = 24$ sample
8.	Kuok	$n_h = \frac{25.726}{812.702} \times 1000 = 32$ sample
9.	Salo	$n_h = \frac{26.518}{812.702} \times 1000 = 33$ sample
10.	Tapung	$n_h = \frac{98.031}{812.702} \times 1000 = 121$ sample
11.	Tapung Hulu	$n_h = \frac{84.517}{812.702} \times 1000 = 104$ sample
12.	Tapung Hilir	$n_h = \frac{61.603}{812.702} \times 1000 = 76$ sample
13.	Bangkinang Kota	$n_h = \frac{40.639}{812.702} \times 1000 = 50$ sample
14.	Bangkinang	$n_h = \frac{33.735}{812.702} \times 1000 = 42$ sample
15.	Kampar	$n_h = \frac{51.601}{812.702} \times 1000 = 63$ sample
16.	Kampar Timur	$n_h = \frac{25.129}{812.702} \times 1000 = 31$ sample
17.	Rumbio Jaya	$n_h = \frac{17.540}{812.702} \times 1000 = 22$ sample

18.	Kampar Utara	$n_h = \frac{17.609}{812.702} \times 1000 = 22$ sample
19.	Tambang	$n_h = \frac{62.640}{812.702} \times 1000 = 77$ sample
20.	Siak Hulu	$n_h = \frac{103.099}{812.702} \times 1000 = 127$ sample
21.	Perhentian Raja	$n_h = \frac{18.042}{812.702} \times 1000 = 22$ sample
Total		1002 sample

In the sampling phase, the Probability Sampling approach was used by the researchers. Probability sampling is a sampling method in which each element (member) of the population has an equal chance of being selected as a sample member.

2.7. Data Analysis

Questionnaire responses were tested for validity and reliability. The correlation approach with the Pearson product-moment correlation coefficient is used as the validity test method (Pearson correlation). Each question item tested for validity has an ordinal value equal to the ordinal value of the entire item. If the correlation coefficient is positive, the item is valid. If, on the other hand, the correlation coefficient is negative, the item is considered invalid. It is then removed from the questionnaire or replaced by an improvement statement. The Statistical Package for the Social Sciences (SPSS) and Microsoft Office Excel are used to perform this validity test. Below is the Pearson correlation formula (Walker, 2017).

$$R_{xy} = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{\{n\sum X^2 - (\sum X)^2\}\{n\sum Y^2 - (\sum Y^2)\}}}$$

Information:
R_{xy} = Correlation coefficient between X and Y variables
N = Number of Subjects/samples/Test Participants
Y = total score obtained from all items
$\sum$XY = Number of Multiplication X and Y
$\sum X^2$ = Sum of Squares X
$\sum Y^2$ = Sum of Squares Y
$(\sum X)^2$ = X sum squared
$(\sum Y)^2$ = Y sum squared

In order to obtain a significant value, a correlation test is performed by comparing rcount with rtable. The formula for the t test is as follows (Gerald, 2018):

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}; dk = n - 2$$

Information:
t = value of t count
r = correlation coefficient
n = number of samples
with degrees of freedom / dk = n-2
The decision to test the validity of the respondent's item:

a. The r value is compared with the r table value with dk = n-2 and a significance level of 5%
b. The statement item under study is said to be valid if rcount > rtable.
c. The statement item under study is said to be invalid if rcount < rtabel

Testing the validity of the instruments in this study was carried out on each statement item. The basis for making a decision is valid or not the statement is stated in (Budiansyah, 2021; Karnengsih, 2020):

a. If r is positive, and r ≥ 0.30 then the statement item is valid.
b. If r is not positive, and r ≤ 0.30 then the statement item is invalid.

The next step is to put the reliability to the test. Reliable implies trustworthy, thus dependable. Assume measuring equipment is used twice to measure the same symptoms with pretty consistent findings. In that instance, the Alpha coefficient formula is the dependability measuring tool.

If the alternative responses in the instrument consist of three or more options (multiple choice) or if an instrument is available, a reliability test using the Alpha Cronbach formula is utilized (essay). The reliability of the instruments used in this study was tested using Cronbach's Alpha and the SPSS version 20 software.

Reliability testing of instruments with a score range between 1-5 uses Cronbach's Alpha formula (Taber, 2018; Vehkalahti, 2000; Zogara et al., 2018), with the following formula:

$$r_{11} = \left(\frac{k}{k-1}\right)\left(1 - \frac{\sum \sigma_b^2}{\sigma_1^2}\right)$$

Information:
r_{11} = Instrument reliability
k = Number of questions
$\sum \sigma_b^2$ = Total Variance of items for each question
σ_1^2 = Total Variance
According to (Agustin, 2018) validity testing using Cronbach's Alpha:
a. The instrument is said to be reliable if the Cronbach's Alpha value is> 0.60.
b. The instrument can be said to be unreliable if the Cronbach's Alpha value is <0.60.
The amount of grain variance can be found with the following formula:

$$S_i = \frac{\sum x^2 - \frac{(\sum x)^2}{n}}{n}$$

Information:
Si = Variance
∑x = Total score
n = Number of Respondents
The decision to test the reliability of the instrument is as follows (Setyawaty et al., 2018):
a. The instrument is said to be reliable if rcount> rtabel.
b. The instrument is said to be unreliable if rcount <rtabel.

TAM approach used in the calculation of the questionnaire results examined the willingness of the Kampar community to accept new technologies. The process of data analysis begins with an examination of the information or data collected through interviews, observations, or document studies. The collected data is summarized and classified in accordance with the problem statement and objectives of the study. In addition, the categories identified are transformed from a qualitative to a descriptive method, which is then examined to reach general conclusions

4. Results And Discussions

3.1. Result

From the selected respondents, it was found that only 29.1% are aware of the programs implemented by the Kampar Regency government. Based on this data, it can be concluded that the Kampar Regency government has initiated smart city programs but has yet to effectively introduce these programs to the public. Therefore, this research will focus exclusively on individuals who are knowledgeable about the newly implemented programs or technologies. The following presents a detailed breakdown of the findings obtained in this study.

Table 2 compares the findings to validate the validity and correctness of the computations. Respondents in this research were drawn from the Kampar district's sub-districts. This district consists of 21 districts, 250 settlements, and eight sub-districts. The survey gathered 1,100 respondents from 21 areas. There are additional respondents from the previous table, namely 98 respondents.

Table 2 - Respondent by Address (district)

Address (District)	Total	Percentage
Kampar Kiri	40	4%
Kampar Kiri Hulu	25	2,5%
Kampar Kiri Hilir	16	1,6%
Gunung Sahilan	26	2,6%

Kampar Kiri Tengah	35	3,5%
XIII Koto Kampar	34	3,4%
Koto Kampar Hulu	43	4,3%
Kuok	90	8,9%
Salo	24	2,4%
Tapung	103	10,2%
Tapung Hulu	74	7,3%
Tapung Hilir	56	5,5%
Bangkinang Kota	51	5%
Bangkinang	42	4,2%
Kampar	56	5,5%
Kampar Timur	30	3%
Rumbio Jaya	32	3,2%
Kampar Utara	22	2,2%
Tambang	66	6,5%
Siak Hulu	123	12,2%
Perhentian Raja	22	2.2%

According to the data collected, respondents from Siak Hulu district had the most responses with a total of 123 people (12.2%). Kampar Kiri Hilir had the fewest respondents (16 people or 1.6%). Based on this information, the questionnaires were distributed by age and the results are shown below. Table 3 shows that the respondents in this study are divided into eight age groups.

Table 3 - Respondents by Age

Age	Total	Percentage
15-19	69	6,9%
20-24	435	43%
25-29	256	25,3%
30-34	97	9,6%
35-39	60	6%
40-44	49	4,8%
45-49	25	2,5%
50-54	19	1,9%

Based on the proportion of age, the largest age group is in the 20-24 age group as many as 435 respondents (43.5%) because at that age there are young people who are very familiar with the technology. Meanwhile, the smallest age group was around the age group> 50 years, with as many as 19 respondents (1.9%). After knowing the age of the respondent, the next step is knowing the job of the respondent. The following is the respondent's data based on occupation. Table 4 shows some of the respondents' occupations, namely university students/students, civil servants/TNI/POLRI, private employees, entrepreneurs, and others.

Table 4 - Respondents by Employment

Employment	Total	Percentage
Students	395	39,1%
PNS/TNI/POLRI	96	9,5%
private employees	181	17,9%
Entrepreneur	164	16,2%
Others	174	17,2%

Table 4 it can be seen that the student group has the most contribution as respondents, with a total of 395 people (39.1%), while respondents with the profession of PNS/TNI/POLRI are the smallest number of respondents, namely 96 people (9.5%). Only a fraction of the 1010 data used as samples in this study can be analyzed since some respondents are unfamiliar with the system or technology that the Kampar district administration has installed. Table 5 contains data from respondents who are aware of the technology but do not use it.

Table 5 - Respondents based on “yes” or “no” Answers

Information	Total	Percentage
Yes	294	29,1%
No	716	70,9%

Before responding to questions on each variable, the researcher first asks the respondent if they are willing to fill out the questionnaire data and are aware of the presence of public service apps that the government has supplied. The researcher provides two choice answers, namely "Yes" and "No". If the respondent answers "Yes" then the respondent can answer all questions

about the public service application in the questionnaire, and if the respondent answers "No" then the respondent can immediately send the answer form without the need to answer further questions on the questionnaire. In table 5, it can be seen that the respondents with the answer "No" are more dominant with a number of respondents 716 people (70.9%) compared to respondents with "Yes" as many as 294 people (29.1%).

3.1.1. Validity and Reliability Test

From the data collected, the number of respondents who answered "No" is greater, 716 people (70.9%), while the number of respondents who answered "Yes" is 294 people (29.1%). Therefore, the researcher processed only the data of the respondents who answered "Yes" to test with SPSS, since the respondents who answered "No" had a score of 0.

To test the validity of this research, the author used the SPSS version 20 application. Validity shows the extent to which the questions are relevant to what is asked or measured in the research. The validity coefficient, in this case the Pearson correlation coefficient, is used to determine the degree of validity of the questionnaire. To test the validity of this research, it refers to the r table, where the level of significance value of 294 is 0.113. From the tests that have been carried out for all variables, the lowest is 0.410 and the highest is 0.829. The value of 0.410 is still above 0.113, which means that all instruments in this study are valid. then to test the reliability of this research, we got a value of 0.853 and this value is greater than 0.6, which means the instrument in this research is reliable.

3.1.2. Multiple Linear Regression Analysis Test

Since independent variable is more than one, statistical tests using the multiple linear regression method are used to evaluate the hypotheses. Multiple regression analysis is used to examine the impacts of several variables, which in this study are the usefulness, convenience, attitude, interest, and use of the whole system on the adoption of the new technology for smart city implementation by Kampar community.

The method of Multiple Linear Regression Analysis using a questionnaire instrument was employed in this study containing an open statement. It was determined that the collected data came from 1000 respondents and then clarified again to 289 respondents as samples for testing. This analysis uses a qualitative analysis approach. The results of the above variable relationships are used as research hypotheses, then verification of the research hypotheses is used to prove the respective relationships of various variables (Chi, 2018). In testing multiple regression analysis, researchers conducted 3 tests, namely the T-test, F-test, and the coefficient of determination.

A. T-Test

One of the research hypothesis tests used in simple and multiple linear regression analysis is the T-test. The T-test (single test) is used to examine the impact of each independent variable (free variable) on the dependent variable (bound variable). The t-value table method for decision-making must be compared with the r-table value. According to (Greenland et al., 2016), one method of determining whether an independent variable impacts the dependent variable (Y) is to formulate a hypothesis based on its significance value.

1. The hypothesis is accepted if the probability of sig 0.05 indicates that the independent variable has a significant impact on the dependent variable.
2. If the Sig value is greater than 0.05, the hypothesis is rejected because there is no significant impact between the independent and dependent variables.

The formula is based on a comparison between the t-value and the t-table.

1. If the value of the t-number is greater than the value of the t-table, the independent variable (X) has an impact on the dependent variable (Y), or the hypothesis is accepted.
2. If the result of the t-number t-table indicates that the independent variable (X) has no influence on the dependent variable (Y), the hypothesis is rejected.

The researcher proposes several hypotheses according to the number of variables to be tested to determine the impact between variables, including the following example.

1. There is an individual impact of the PEOU, ATU, BIU, and AU variables on the PU variable.
2. There is an individual impact of PU, ATU, BIU, and AU variables on the PEOU variable.

3. There is an individual impact of PU, PEOU, BIU, and AU variables on the ATU variable.
4. There is an individual impact of PU, PEOU, ATU, and AU variables on the BIU variable.
5. There is an individual impact of PU, PEOU, ATU, and BIU variables on the AU variable.

The five hypotheses tested for each variable; the t-count value is calculated through the regression function in SPSS will be used to see if the dependent variable has a significant influence on the other factors. In this study, hypothesis testing is performed using a significance level of 5% and a confidence level of 95%. According to (Feng et al., 2017; Magdalena & Dharmanto, 2020; Sukainah et al., 2019) hypothesis testing is carried out using the following formula.

$T_{tabel} = t(\alpha/2; n-k-1)$

Information:
t = t table value
α = error rate
n = number of samples
k = independent variable

Determination of t table using formula (7).
"t table = t (0.05 / 2; 289 - 4 - 1)"
"t table = t (0.025; 289 - 4 - 1)"
"t table = t (0.025; 284)"
"t table = 1,968"

Results of Hypothesis Analysis using the t-test, here are the results.

Table 6 - Hypothesis for the TAM Method

Variable	*Hypothesis*	*Relations*	*t count*	*Sig*	*Information*
PEOU	H1	PEOU ↔ PU	5,234	0,000	Impact
	H2	PEOU ↔ ATU	6,151	0,000	Impact
	H3	PEOU ↔ BIU	4,346	0,000	Impact
	H4	PEOU ↔ AU	2,295	0,022	Impact
PU	H5	PU ↔ PEOU	5,234	0,000	Impact
	H6	PU ↔ ATU	3,310	0,000	Impact
	H7	PU ↔ BIU	3,739	0,000	Impact
	H8	PU ↔ AU	-1,598	0,011	No Impact
ATU	H9	ATU ↔ PU	5,310	0,000	Impact
	H10	ATU ↔ PEOU	6,151	0,000	Impact
	H11	ATU ↔ BIU	4,997	0,000	Impact
	H12	ATU ↔ AU	2,271	0,024	Impact
BIU	H13	BIU ↔ PU	3,379	0,000	Impact
	H14	BIU ↔ PEOU	4,346	0,000	Impact
	H15	BIU ↔ ATU	4,997	0,000	Impact
	H16	BIU ↔ AU	3,084	0,022	Impact
AU	H17	AU ↔ PU	-1,598	0,111	No Impact
	H18	AU ↔ PEOU	2,295	0,022	Impact
	H19	AU ↔ ATU	2,271	0,024	Impact
	H20	AU ↔ BIU	3,084	0,002	Impact

Table 6 shows the relations between all variables, and these relations are wrapped in hypothesis from one until sixteen. From the formulation of the hypothesis, the sigma for variables with a value below 0.05 is accepted and the sigma value above 0.05 is unaccepted. Almost all sigma values in table 6 are below 0.05 except hypothesis H17 which has a sigma value of 0.111. However, in the t count, the value must be above 1.968, thereafter this can be considered an influential variable with the dependent variable. In this T-test, there are 2 variables that have no impact because the t-count value is minus. The hypothesis named H8 with a t-count value of -1,598 can be interpreted as the applications applied don't give an influence on the community in Kampar District. Furthermore, hypothesis H17 with a t-count value of -1,598 also has no impact, this can also be interpreted that the use of applications that are rarely used or have no benefit at all for the community.

Furthermore, there are several hypotheses that have a fairly low influence in table 6. Hypothesis H4 gets a T table value of 2.295 which means that applications that are applied are easy to use by some respondents, but some other respondents are still experiencing obstacles in using applications. In addition, the H12 hypothesis gets a value of 2,271, this condition is

interpreted that the acceptance of technology or applications that have been implemented or are still not entirely accepted well. Moreover, in the AU dependent variable, there are also two low variables, namely PEOU (H18) and ATU (H19). This is because the use of applications that are rarely used causes the two variables to be very low.

To overcome the problem of the use of this application, it is necessary to have a strategy that can increase public confidence in the government so that people want to use applications that have been made and are routinely used. In addition, many people do not know the applications that have been available for the community to use in administrative matters. Therefore, the need for a strategy to participate in the system so that the entire Kampar community understands and understands the importance of applications that have been made to support the implementation of Smart City in Kampar Regency.

B. F-Test

The F test is one of the research hypothesis tests used in simple linear regression analysis and multiple linear regression analysis, in addition to the T-test. The F-test determines if the independent factors influence the dependent variable at the same time.

Researchers propose several hypotheses according to the number of variables to be tested to determine the impact between variables, including the following.

1. There is a simultaneous (simultaneous) influence between the PEOU, ATU, BIU, and AU variables on the PU variable.
2. There is a simultaneous (simultaneous) influence between PU, ATU, BIU, and AU variables on the PEOU variable.
3. There is an impact simultaneously (simultaneously) between the PU, PEOU, BIU, and AU variables on the ATU variable.
4. There is an impact simultaneously (simultaneously) between the PU, PEOU, ATU, and AU variables on the BIU variable.
5. There is a simultaneous (simultaneous) influence between PU, PEOU, ATU, and BIU variables on the AU variable.

The significance level in this study is 5%, while the confidence level is 95%. To test this hypothesis, the F statistic is used with the decision-making criteria based on the probability value of Significance (Kim, 2017) (Anova output result) as follows.

1. The hypothesis is accepted if the value of Sig is 0.05. This means that the independent variable simultaneously affects the dependent variable.
2. If the Sig value is greater than 0.05, the hypothesis is rejected. This means that the independent variable does not influence the dependent variable at the same time.

The following are the decision criteria based on the comparison of the calculated f-value with the f-table.

1. If the value of the f-number exceeds the value of the f- table, the hypothesis is accepted. This means that the independent variable affects the dependent variable simultaneously.
2. If the value of the F count F table is greater than one, the hypothesis is rejected. This means that the independent variable has no concurrent influence on the dependent variable.

This hypothesis testing is done using the following formula (Achmad & Witiastuti, 2018; Fauzan, 2017; Ramadhiana et al., 2021).

$F_{tabel} = F(k; n - k)$

Information:

F = F table value

n = number of samples

k = independent variable

In the stages of determining the F table using formula (8), the following results are obtained.

"Ftable = F (4; 289 - 4)"

"Ftable = F (4; 285)"

"Ftable = 2.37"

The results of the F test that have been carried out. Can be seen in Table 7.

Table 7 - F-Test Result

Variable	F	Sig.
PU ↔ PEOU, ATU, BIU and AU	101,040	0,000
PEOU ↔ PU, ATU, BIU and AU	134,880	0,000
ATU ↔ PU, PEOU, BIU and AU	142,664	0,000
BIU ↔ PU, PEOU, ATU and AU	109,386	0,000
AU ↔ PU, PEOU, ATU and BIU	23,204	0,000

Based on table 7 showing the SPSS output, it can be seen that all accepted or influential variables are tested using the F test.

C. The coefficient of determination

R2 analysis (R-squared), also known as the coefficient of determination, is used to calculate the proportion of the impact of the independent factors on the dependent variable (Chi, 2018). The partial test output of IBM SPSS v20 in the model summary shows the coefficient of determination. The test results using the coefficient of determination are shown below.

Table 8 - Coefficient Determination Test Result

Dependent variable	Variable	R Square
PU	PEOU, ATU, BIU and AU	0,587
PEOU	PU, ATU, BIU and AU	0,655
ATU	PU, PEOU, BIU and AU	0,668
BIU	PU, PEOU, ATU and AU	0,606
AU	PU, PEOU, ATU and BIU	0,246

Based on table 8 showing, according to the SPSS result, the complete R Square value may be utilized to describe the variable's influence

Discussion

From the results of hypothesis testing that has been done using the T-test, it can be seen that perceived usefulness (PU), ease of use (PEOU), attitude towards technology (ATU), interest in technology (BIU), and use of actual public service applications (AU) have been assessed as well. It is evident from the results of the t-test analysis that the PU, PEOU, ATU, BIU, and AU variables are interrelated and individually influential. It is just that the PU variable does not have an individual impact on the AU variable. This means that the utility variable (PU) in the use of public service applications does not have an impact on the actual conditions for the continuous use or use of these public service applications. This is because the most important thing for using the application directly is the ease of use (PEOU), attitude towards technology (ATU), and interest in using technology (BIU) from the community to use public service applications that have been provided by the Kampar Regency Government. In addition, AU also has no impact on PU variables as seen from the t count and sigma values in table 6. This is because many application users still do not understand and use applications that have been provided by the government.

The F-test was conducted to determine whether the independent variable and dependent variables had an impact simultaneously. Researchers then use each variable as a dependent variable for testing. The results prove that these five variables influence each other simultaneously. Testing the Coefficient of Determination is carried out with the aim of knowing how much the contribution of the independent variables simultaneously explains the influence of the dependent variable. From the test results, it can be seen that the independent variable has a fairly large percentage of influence on the dependent variable. This means that perceived usefulness (PU), ease of use (PEOU), attitude towards technology (ATU), interest in technology (BIU), and actual use of public service applications (AU) has a positive impact on Kampar people who have used public service applications.

3.5. Proposed Strategies to The Government (Recommendation)

The test results carried out using the F Test and R Square show that all variables are affected. These results only show that a small part of the community is aware of implementing a smart city in their area. Needs a unique strategy to introduce new technologies and technologies that will be developed to the community.

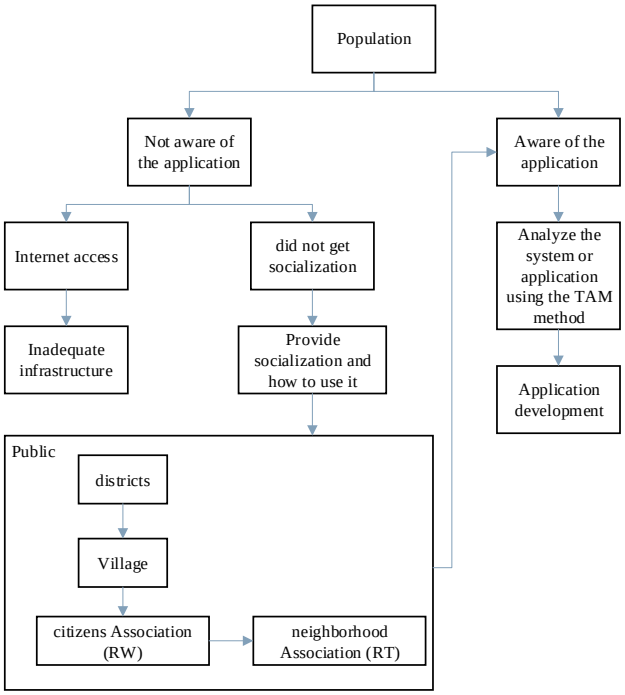

Fig. 2. The Proposed Strategy

The Kampar Government's next strategy could be to provide adequate infrastructure and socialize the introduction of public service applications to the Kampar community so that more people are aware of the application and the public can experience the public services that the Government has implemented. After collecting the data, the researcher found that out of 1000 respondents, only 29.1% of the people were aware of the existence of public service applications. Due to a lack of internet connection, inadequate infrastructure, and a lack of socialization regarding these service applications, there are 70.9% of people are unaware that these applications exist. This is obviously very sad because the public service application's presence has not been on point. Applications for public services are available to make it quicker and easier for citizens to access information and governmental services

5. Conclusion

From the analysis of the data and the hypothesis testing conducted, several key findings have emerged. First, it was found that only 29.1% of the respondents were aware of the Smart City programs implemented by the Kampar Regency government, indicating a lack of awareness and promotion of these programs among the general public. Second, in terms of age distribution, the largest age group among the respondents was the 20-24 age group, comprising 43% of the total respondents. This age group displayed a higher level of familiarity with technology. Third, regarding occupation, the majority of respondents were university students or scholars, making up 39.1% of the total respondents. Conversely, public servants (PNS/TNI/POLRI) represented the smallest group of respondents at 9.5%. Moreover, among the respondents who were aware of the technology, 29.1% indicated that they were aware but did not use it, while 70.9% were either unaware of the technology or did not use it. The study also conducted validity and reliability tests, confirming that the research instruments employed were valid and reliable for analysis purposes. Furthermore, multiple linear regression analysis was utilized to assess the relationships between various independent variables (PEOU, ATU, BIU, AU) and the dependent variable (PU). The results revealed significant impacts among most variables, except for PU on AU. The F-test was employed to determine whether the independent variables collectively influenced the dependent variable, and the findings indicated that all variables had a simultaneous influence on each other. The coefficient of determination (R-squared) demonstrated that the independent variables collectively explained a significant portion of the influence on the dependent variable. In light of these findings, several strategic actions are recommended for the Kampar Regency government:

- Infrastructure Improvement: The government should prioritize enhancing internet connectivity and technology infrastructure to facilitate easier access to public service applications.
- Awareness Campaigns: Launch robust public awareness campaigns to inform and educate the community about the existence and benefits of public service applications.
- Socialization Efforts: Actively engage in socialization activities to ensure that the entire Kampar community comprehends and recognizes the importance of these applications.
- User-Friendly Applications: Make efforts to enhance the user-friendliness of public service applications to encourage increased usage and acceptance among the community.
- Inclusivity: Develop strategies that encompass all segments of the population, including older age groups, in the adoption of technology for public services.

By implementing these recommendations, the Kampar Regency government can work toward increasing awareness and utilization of technology-driven public services, ultimately contributing to the success of the Smart City initiative in the region.

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