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Analysis of Customer Satisfaction Index and Importance Performance Analysis and Ordinal Logistic Model Approach to Electronic Identity Card (E-KTP) Administration Services at Dispendukcapil Sidoarjo

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Abstract: *The Department of Population and Civil Registry (Dispendukcapil) of Sidoarjo Regency is a place of information regarding accurate basic population data services, especially in making E-KTP. However, these services still need improvement, which can cause dissatisfaction in the community. Therefore, this study aimed to analyze the level of public satisfaction with the service for making E-KTP and to find out the factors that influence service satisfaction. The methods used in this research are Customer Satisfaction Index (CSI), Importance Performance Analysis (IPA), and ordinal logistic regression to analyze community satisfaction. The data was taken directly from the people who managed the E-KTP service, as many as 120 respondents. Based on the results of the analysis, the satisfaction level of the E-KTP service at the Sidoarjo Population and Civil Registry Office was obtained at 84.613%, which means that the people who manage the E-KTP service at the Sidoarjo Population and Civil Registry Office are very satisfied with the service. Furthermore, by using the IPA method, 6 attributes are included in quadrant I, 4 attributes are included in quadrant II, 5 attributes are included in quadrant III, and 5 attributes are included in quadrant IV. The factor that influence the satisfaction of the E-KTP service is the variable reliability with the results of the classification accuracy of the model estimate of 79,167%.*

Keywords: *Dispendukcapil Sidoarjo, Customer Satisfaction Index (CSI), Importance Performance Analysis (IPA), Ordinal Logistic Regression*

1. Introduction

Public services are all activities in the context of fulfilling basic needs according to the basic rights of every citizen and resident of goods, services, and administrative services provided by service providers related to the public interest. Service quality has become a decisive factor in maintaining a government bureaucratic or corporate organisation's sustainability (Rinaldi, 2012). To provide good quality public services, the government has made a Decree of the Minister of Administrative Reform Number : 63/KEP/M.PAN/7/ 2003 concerning General Guidelines for the Implementation of Public Services, but this policy will only be achieved optimally if government officials work optimally.

Department of Population and Civil Registration (Dispendukcapil) of Sidoarjo Regency, as one of the local government offices that serve administrative files, is a place of information about accurate population data. Making E-KTP is one of the basic services of Dispendukcapil as a form of legitimization or identity of a person as a resident in the territory of the Unitary State of the Republic of Indonesia (NKRI). Sidoarjo Regency, as one of the most innovative districts, certainly creates a high sense of community satisfaction, but in reality, there are still many things that could be improved in the E-KTP-making service process at Dispendukcapil Sidoarjo. Reporting from sippn.menpan.go.id that the E-KTP printing service process is completed within 1 working day if the requirements in the form of the required documents are complete. In fact, in the field, there are still reasons why the available blanks often run out, and the delivery of blanks is late, an obstacle for the Dispendukcapil Sidoarjo. Then service bureaus/brokers still provide false information to the public. As well as the lack of a perfect online queuing system that is easily accessible to the public (Dispendukcapil Sidoarjo, 2020). So it is necessary to improve the quality of service that can make people more satisfied with managing E-KTP.

Researchers used the Customer Satisfaction Index method, Importance Performance Analysis, and an ordinal logistic regression model approach to analyze. This study will analyze the Sidoarjo community's satisfaction with the Electronic Identity Card (E-KTP) administration service. The methods used include Customer Satisfaction Index, Importance Performance Analysis, and ordinal logistic regression model approach. This research is expected to analyze the priority criteria that need to be maintained and improved in decision making by the Dispendukcapil Sidoarjo.

2. Literature Review

2.1 Dispendukcapil Sidoarjo

Department of Population and Civil Registration (Dispendukcapil) of Sidoarjo Regency is an organization that implements performance-based management that focuses its activities on service excellence in carrying out tasks in the Population Administration and Civil Registration field.

The Sidoarjo Population and Civil Registration Office has 24 services, including services for Family Cards (KK) for Indonesian citizens and foreigners, Moving and Arrival Certificate (SKPD), Identity Cards (KTP), Certificate of Change of Citizenship Status of Foreigners to Indonesian Citizens (SKPSK), Limited Stay Certificate for Foreigners (SKTT), Moving Certificate (SKP), recording and issuing Birth Certificate quotations, recording and issuing Death Certificate quotations, recording and issuing Marriage Certificate quotations, and others.

2.2 Validity Test

The validity test is the ability of a tool to measure its measuring targets, in measuring validity aimed at the content and usefulness of the instrument (Darma, 2021).

$$r_{xy} = \frac{n\sum_{i=1}^{n}(x_i y_i) - \sum_{i=1}^{n} x_i \sum_{i=1}^{n} y_i}{\sqrt{\{n\sum_{i=1}^{n} x_i^2 - (\sum_{i=1}^{n} x_i)^2\}\{n\sum_{i=1}^{n} y_i^2 - (\sum_{i=1}^{n} y_i)^2\}}} \quad (1)$$

with :

r_{xy} : Correlation coefficient for each item
n : Number of samples
x : Question item score
y : Total score of the question
$\sum x$: Total score of question items
$\sum y$: Total number of question scores
$\sum x^2$: Sum of squared scores of question items
$\sum y^2$: Total squared score of questions

2.3 Reliability Test

The reliability test is the consistency of the instrument score, which shows the extent to which an instrument/measuring tool can be trusted, which means that if the instrument is used repeatedly to measure something the same, relatively stable or consistent results are obtained (Khuamedi, 2012). The level of reliability is indicated by the reliability coefficient number, which ranges from 0 to 1, where the higher the reliability number means the more consistent the measurement results, but empirically the reliability coefficient with a value of 1 is rarely found.

One way to measure the reliability of the questionnaire items is by using Cronbach's Alpha value. The value of Cronbach's Alpha reliability level is shown in Table 1 below.

Table 1. Level of Reliability Coefficient Cronbach's Alpha Value

Cronbach's Alpha Value	Reliability Level
$0.00 \leq r_a < 0.20$	Very Low
$0.20 \leq r_a < 0.40$	Low
$0.40 \leq r_a < 0.60$	Medium or Fair
$0.60 \leq r_a < 0.80$	High
$0.80 \leq r_a < 1.00$	Very High

Source : (Guilford, 1956)

An instrument is declared reliable if the Cronbach's Alpha value is ≥ 0.60 (Fadillah, et al., 2020). The Cronbach's Alpha reliability coefficient formula can be seen in the following equation.

$$r_\alpha = \frac{k}{(k-1)}\left\{1 - \frac{\sum_{i=1}^{k}\sigma_i^2}{\sigma_t^2}\right\} \quad (2)$$

with :

r_α : Cronbach's alpha value
k : Number of question items
σ_i^2 : Variance of question items
σ_t^2 : Variance of the total score of all questions

2.4 Customer Satisfaction Index (CSI)

Customer Satisfaction Index (CSI) is an index to determine the overall customer satisfaction level with an approach that considers the level of importance of the product or service attributes measured (Syukri, 2014).

The following steps can be taken to find the size or size of the Customer Satisfaction Index CSI value. (Aritanong, 2005).

1. Calculating the Mean Important Score (MIS)

$$MIS_j = \frac{\sum_{i=1}^{n} Y_{ij}}{n}; j = 1,2,\dots,p \quad (3)$$

With n is the number of respondents and Y_{ij} is the expectation value of the i-th respondent at the j-th attribute.

2. Calculating Weighted Factors (WF)

$$WF_j = \frac{MIS_j}{\sum_{r=1}^{p} MIS_r} \times 100\% \quad (4)$$

Where p is the p-th attribute of importance.

3. Calculating the Mean Satisfaction Score (MSS)

$$MSS_j = \frac{\sum_{i=1}^{n} X_{ij}}{n}; j = 1,2,\dots,p \quad (5)$$

With n is the number of respondents and X_{ij} is the perception or reality value of the i-th respondent at the j-th attribute.

4. Calculating Weight Score (WS)

$$WS_j = WF_j \times MSS_j \quad (6)$$

5. Calculating the Customer Satisfaction Index (CSI)

$$CSI = \frac{\sum_{j=1}^{p} WS_j}{HS} \times 100\% \quad (7)$$

With Highest Scale (HS) being the maximum scale used (scale 5).

In general, if the CSI value is above 50%, it can be said that consumers or customers are satisfied. Meanwhile, if the CSI value is below 50%, it can be said that consumers or customers are not satisfied.

The following are the criteria for CSI assessment.

Table 2. Criteria Value CSI

CSI Value (%)	Criteria CSI
81 – 100	Very Satisfied
66 – 80	Satisfied
51 – 65	Moderately Satisfied
35 – 50	Less Satisfied
0 – 34	Not Satisfied

2.5 Importance Performance Analysis (IPA)

IPA is a method used to measure the level of conformity to determine how satisfied customers are with the performance of public service providers, and how much the service providers understand what customers want for the services they provide. The measurement is depicted in a Cartesian diagram with four quadrants (Hidayati & Prasetyo, 2015).

In this study, there are two variables: variable X, which is the level of performance or the fact of customer satisfaction, and variable Y, which is the level of interest or customer expectations. The formula used in calculating the value of the suitability level is as follows:

$$T_{ki} = \frac{\sum_{i=1}^{k} X_i}{\sum_{i=1}^{k} Y_i} \times 100\% \quad (8)$$

with :

T_{ki} : Respondent's level of conformity
X_i : Average score of performance assessment
Y_i : Importance rating score (expectation)
k : Number of question items

After measuring the level of conformity, then the average level of performance or reality (X) and the level of importance or expectation (Y) for each factor that influences customer satisfaction are calculated with the following formula:

$$\bar{X}_I = \frac{\sum_{j=1}^{n} X_{ij}}{n} ; i = 1,2,\dots,k \quad (9)$$

$$\bar{Y}_I = \frac{\sum_{j=1}^{n} Y_{ij}}{n} ; i = 1,2,\dots,k \quad (10)$$

with :

$\bar{X}_I$: Average score of performance/reality level
$\bar{Y}_I$: Average score of importance/expectation level

The next stage maps the importance-performance position shown in a four-quadrant, two-line, perpendicularly intersecting Cartesian figure $(\bar{\bar{X}}, \bar{\bar{Y}})$. The following formula is employed:

$$\bar{\bar{X}} = \frac{\sum_{i=1}^{k} \bar{X}_I}{n} ; i = 1,2,\dots,k \quad (11)$$

$$\bar{\bar{Y}} = \frac{\sum_{i=1}^{k} \bar{Y}_I}{n} ; i = 1,2,\dots,k \quad (12)$$

with :

$\bar{\bar{X}}$: The average of average performance level scores for all attributes
$\bar{\bar{Y}}$: The average of the average importance scores for all attributes
k : The number of attributes that affect customer satisfaction

The last stage is the translation of each attribute into a Cartesian diagram which is divided into four quadrants as follows.

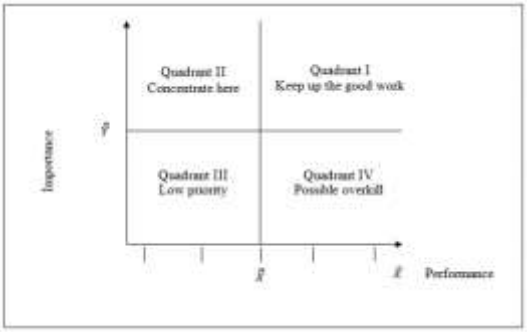

Figure 1. Importance Performance Analysis Quadrant

The Importance Performance Analysis quadrant is interpreted as follows (Deng, et al., 2008).

1. Quadrant I (Keep Up The Good Work)
   In this quadrant, some attributes are considered important and are expected as attributes supporting customer satisfaction. So the company is obliged to maintain these performance achievements.
2. Quadrant II (Concentrate Here)
   In this quadrant, some attributes are considered important and expected by consumers, but the company's performance still needs improvement. So that the company needs to concentrate on concentrating its resources to improve the performance of the attributes included in this quadrant.
3. Quadrant III (Low Priority)
   In this quadrant, some attributes are considered to have a low level of perception or performance level and are not expected by consumers. So that companies do not need to prioritize or pay more attention to the attributes that enter this quadrant.
4. Quadrant IV (Possibly Overkill)
   In this quadrant, some attributes are considered insignificant and not too considered by the company. So that the company should focus more of its resources related to these attributes to other attributes with a higher priority level.

2.6 Ordinal Logistic Regression

Ordinal logistic regression is a regression model used to analyze the relationship between response variables and predictor variables, the response variable is polychotomous (has a nominal or ordinal scale with

more than two categories) (Hosmer & Lameshow, 2000). The relationship between the probability vector $\boldsymbol{\pi} = \left(\pi_1(\boldsymbol{X}), \pi_2(\boldsymbol{X}), \ldots, \pi_q(\boldsymbol{X})\right)$ and the ordinal scale response variable Y can be expressed in the logit model as follows:

$$g\left(\gamma_j(\boldsymbol{X})\right) = \theta_j + \sum_{k=1}^{p} \beta_k X_k \, , j = 1,2,\ldots,q-1 \quad (13)$$

with

$g\left(\gamma_j(\boldsymbol{X})\right) = ln\left(\frac{\gamma_j(\boldsymbol{X})}{1-\gamma_j(\boldsymbol{X})}\right)$ is the link function.

The following tests are performed to determine whether the coefficients of the above logit regression model are significant. Significance of the model parameters simultaneously and partially.

1. Simultaneous test
   $H_0: \beta_1 = \beta_2 = \beta_3 = 0$
   $H_0: there\ is\ at\ least\ one\ \beta_k \neq 0; k = 1,2,3$
   The test statistic used is the G Likelihood Ratio :
   $$G^2 = -2\, ln\left[\frac{\left(\frac{n_1}{n}\right)^{n_1}\left(\frac{n_2}{n}\right)^{n_2}\left(\frac{n_3}{n}\right)^{n_3}}{\prod_{i=1}^{n}\left[\pi_1(x_1)^{y_{1i}}\pi_2(x_2)^{y_{2i}}\pi_3(x_3)^{y_{3i}}\right]}\right] \quad (14)$$
   The critical region is rejected H_0 if $G > X^2{}_{(v,\alpha)}$ with free degree v or $p - value < \alpha$ (Hosmer & Lameshow, 2000).
2. Partial test
   $H_0: \beta_j = 0$
   $H_1: \beta_j \neq 0; j = 1,2,\ldots,p$
   The test statistics used are standard normal test statistics :
   $$Z_j = \frac{\hat{\beta}_j}{s(\hat{\beta}_j)}; j = 1,2,\ldots,p \quad (15)$$
   The critical region to test the hypothesis with a significance level of α is H_0 rejected if $|Z_j| > Z_{\frac{\alpha}{2}}$ or $p - value < \alpha$ (Hosmer & Lameshow, 2000).
3. Goodness of fit test
   H_0: the regression model fits
   H_1: the regression model does not fit
   Test statistic :
   $$D = -2\sum_{i=1}^{n}\left[y_{ij}\, ln\left(\frac{\hat{\pi}_{ij}}{y_{ij}}\right) + \left(1 - y_{ij}\right) ln\left(\frac{1-\hat{\pi}_{ij}}{1-y_{ij}}\right)\right] \quad (16)$$
   statistical tests based on deviance indicate how well the model fits the data. The higher the D value and the lower the $p - value$ indicates that the model may not fit the data. If the model is the best, then the deviance will be close to the distribution of $\chi^2{}_{(df)}$.
4. Odds ratio
   Odd Ratio (OR) in the ordinal logistic regression model is defined Odd in the Y ≤ j category as follows:
   $$Odd = \frac{P(Y \leq j|\boldsymbol{X})}{P(Y > j|\boldsymbol{X})} = exp\left(\theta_j + \boldsymbol{X\beta}\right) \quad (16)$$
   The exponential relationship in (16) explains the interpretation for the parameterβ_k. For each one-unit increase in the predictor variable X_k, there is a multiplicative increase in the odd category $Y \leq j \;;\; j = 1,2,\ldots,q-1$ by $exp(\beta_k)$.
5. Classification accuracy
   One method that can be used to measure classification accuracy is to calculate the Apparent Error Rate (APER) and model classification accuracy (1-APER). Apparent Error Rate (APER) is a value used to measure the error in classifying objects.

Table 3. Classification Accuracy Crosstab

Actual (Y)	Prediction (Y)			Total Observation
	1	2	3	
1	n_{11}	n_{12}	n_{13}	n_1
2	n_{21}	n_{22}	n_{23}	n_2
3	n_{31}	n_{32}	n_{33}	n_3

The following are calculations for APER and model classification accuracy.

$$APER = \frac{n_{12}+n_{13}+n_{21}+n_{23}+n_{31}+n_{33}}{n_1+n_2+n_3} \quad (17)$$

$$\text{Classification accuracy} = 1 - APER \quad (18)$$

3. Methodology

3.1 Data

This research's data source is public satisfaction with Electronic Identity Card (E-KTP) administration services at the Dispendukcapil Sidoarjo.

3.2 Data Collection Techniques

The data collection technique in this study uses a purposive sampling technique, namely selecting respondents with certain considerations and objectives. In this study, the target population to be selected is those who take care of the Electronic Identity Card (E-KTP) administration service at the Dispendukcapil Sidoarjo. The sample is respondents with special criteria, among others, Sidoarjo natives who are or have taken care of E-KTP services at the Dispendukcapil Sidoarjo Office aged at least 17 years.

Determination of the number of samples in this study is as follows.

$$n = \frac{(1{,}96)^2 . 0{,}5(0{,}5)}{(0{,}09)^2} = 118{,}57 \approx 119$$

Based on the above calculations, the minimum sample size required in this study was 119 respondents.

3.3 Research Variable

Table 4. Satisfaction Variable

No.	Dimensions	Attribute	Information
1	Tangible	$X_{1.1}$	The KTP service room is clean and tidy

No.	Dimensions	Attribute	Information
2		$X_{1.2}$	Neat employee appearance
3		$X_{1.3}$	There is an adequate information centre
4		$X_{1.4}$	Availability of a large and safe parking lot
5	Reliability	$X_{2.1}$	The ability of employees to provide information that is easy to understand
6		$X_{2.2}$	Non-discriminatory employees in serving the community
7		$X_{2.3}$	Ease of service procedures
8		$X_{2.4}$	Appropriateness of service requirements
9.	Responsiveness	$X_{3.1}$	Responsiveness of employees in responding to community needs/complaints
10.		$X_{3.2}$	The speed of employees in responding to consumer needs/complaints
11.		$X_{3.3}$	Implementation accuracy of the service time schedule
12.		$X_{3.4}$	Employees have good knowledge of the E-KTP service mechanism
13.	Assurance	$X_{4.1}$	Clarity and certainty of employees in providing services
14.		$X_{4.2}$	Employees can overcome complaints in the process of managing E-KTP
15.		$X_{4.3}$	Community personal data documents, as a requirement for service implementation, are guaranteed security
16.		$X_{4.4}$	Transparency and accountability in providing services
17.	Emphaty	$X_{5.1}$	Employees can direct service users who do not understand the flow of taking care of E-KTP
18.		$X_{5.2}$	Employees care about the problems faced by customersand customers
19.		$X_{5.3}$	Fairness in getting services in the process of taking care of E-KTP
20.		$X_{5.4}$	Employees appreciate if there are suggestions and criticisms from customers
21.	**Satisfaction**	Y	Overall, people are satisfied with the E-KTP service at the Dispendukcapil Sidoarjo.

4. Results

4.1 Validity Test

a. Tangible Dimension

Table 5. Validity Test on the Dimensions of Tangible

Attribute	P-value	Decision	Conclusion
$X_{1.1}$	0,000	Reject H_0	Valid

$X_{1.2}$	0,000	Reject H_0	Valid
$X_{1.3}$	0,000	Reject H_0	Valid
$X_{1.4}$	0,000	Reject H_0	Valid

Based on **Table 5**, it is obtained that all question attributes from the tangible dimension have a p-value smaller than, so the decision to reject is obtained so that all question items for the physical display dimension on the questionnaire are valid.

b. Reliability Dimension

Table 6. Validity Test on the Dimensions of Reliability

Attribute	P-value	Decision	Conclusion
$X_{2.1}$	0,000	Reject H_0	Valid
$X_{2.2}$	0,000	Reject H_0	Valid
$X_{2.3}$	0,000	Reject H_0	Valid
$X_{2.4}$	0,000	Reject H_0	Valid

Based on **Table 6**, it is obtained that all question attributes from the reliability dimension have a p-value smaller than $\alpha = 0{,}05$, so the decision to reject H_0 is obtained so that all question items for the physical display dimension on the questionnaire are valid.

c. Responsiveness Dimension

Table 7. Validity Test on the Dimensions of Responsiveness

Attribute	P-value	Decision	Conclusion
$X_{3.1}$	0,000	Reject H_0	Valid
$X_{3.2}$	0,000	Reject H_0	Valid
$X_{3.3}$	0,000	Reject H_0	Valid
$X_{3.4}$	0,000	Reject H_0	Valid

Based on **Table 7**, it is obtained that all question attributes from the responsiveness dimension have a p-value smaller than $\alpha = 0{,}05$, so the decision to reject H_0 is obtained so that all question items for the physical display dimension on the questionnaire are valid.

d. Assurance Dimension

Table 8. Validity Test on the Dimensions of Assurance

Attribute	P-value	Decision	Conclusion
$X_{4.1}$	0,000	Reject H_0	Valid
$X_{4.2}$	0,000	Reject H_0	Valid
$X_{4.3}$	0,000	Reject H_0	Valid
$X_{4.4}$	0,000	Reject H_0	Valid

Based on **Table 8**, it is obtained that all question attributes from the Assurance dimension have a p-value smaller than $\alpha = 0{,}05$, so the decision to reject H_0 is obtained so that all question items for the physical display dimension on the questionnaire are valid.

e. Emphaty Dimension

Table 9. Validity Test on the Dimensions of Emphaty

Attribute	P-value	Decision	Conclusion
$X_{5.1}$	0,000	Reject H_0	Valid
$X_{5.2}$	0,000	Reject H_0	Valid
$X_{5.3}$	0,000	Reject H_0	Valid
$X_{5.4}$	0,000	Reject H_0	Valid

Based on **Table 9**, it is obtained that all question attributes from the empathy dimension have a p-value smaller than $\alpha = 0{,}05$, so the decision to reject H_0 is obtained so that all question items for the physical display dimension on the questionnaire are valid.

4.2 Reliability Test

Table 10. Reliability Test

No.	Variable	Cronbach's alpha	Conclusion
1.	Tangible	0,750	High reliability
2.	Reliability	0,779	High reliability
3.	Responsiveness	0,745	High reliability
4.	Assurance	0,778	High reliability
5.	Emphaty	0,763	High reliability

Based on **Table 10**, the analysis results with Cronbach's Alpha value for the tangible, reliability, responsiveness, assurance, and empathy dimensions have a Cronbach's Alpha value between 0.6 and 0.8. This means that a person's answer to a question is consistent and stable over time.

4.3 Customer Satisfaction Index (CSI)

Customer Satisfaction Index measurement is carried out to determine the user satisfaction index. It becomes a reference in forming a special strategy to maintain and improve E-KTP service satisfaction at Dispendukcapil Sidoarjo. Based on the analysis results, the CSI value is 84.613%. This value is in the interval value of 81-100 (%), which means that people who take care of E-KTP at the Dispendukcapil Sidoarjo are very satisfied with the overall service at the Dispendukcapil Sidoarjo.

4.4 Importance Performance Analysis (IPA)

IPA is a method used to measure the level of conformity to determine how satisfied customers are with the performance of public service providers, and how much the service providers understand what customers want for the services they provide.

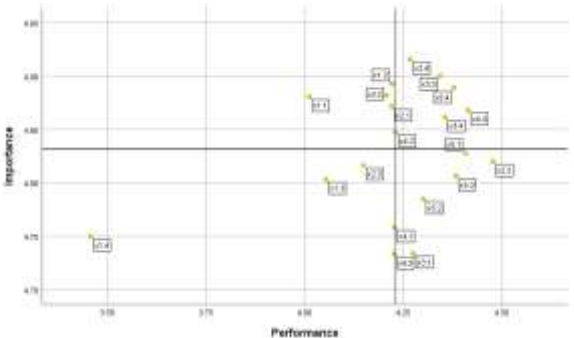

Figure 2 Importance Performance Analysis 5 Dimensions

Based on Figure 1 attributes that are included in quadrant I is an superior attribute that need to be maintained, namely attribute $X_{2.4}, X_{3.3}, X_{3.4}, X_{4.2}, X_{4.4}$, and $X_{5.4}$. In quadrant II there are attributes or services with a high priority and needed improvement, namely the attributes $X_{1.1}$ $X_{1.2}$, $X_{2.1}$, and $X_{3.2}$. In quadrant III there are attributes or services that are less considered by the Dispendukcapil Sidoarjo and low service quality, namely attributes $X_{1.3}, X_{1.4}, X_{2.3}$, $X_{4.1}$, and $X_{4.3}$. In quadrant IV there are attributes or services that are considered less important but in fact the service is satisfactory, namely attributes $X_{2.2}$, $X_{3.1}$, $X_{5.1}$, $X_{5.2}$, dan $X_{5.3}$.

4.5 Ordinal Logistic Regression

The model of E-KTP service satisfaction at the Dispendukcapil Sidoarjo uses an ordinal logistic regression approach, including estimation of the ordinal logistic model, simultaneous significance test, individual significance test, and calculating the odds ratio value. The response variable in this study is classified into three categories: dissatisfied ($y = 1$), moderately satisfied ($y = 2$), satisfied ($y = 3$). The predictor variables are tangible (X_1), reliability (X_2), responsiveness (X_3), assurance (X_4), and empathy (X_5).

Table 11. simultaneous Test

DF	G	P-Value
5	63,325	0,000

The model simultaneous test can be seen in **Table 11** based on the following hypothesis.

$H_0: \beta_1 = \beta_2 = \beta_3 = 0$

H_1: *there is at least one* $\beta_k \neq 0; k = 1,2,3$

Based on **Table 11**, the value of $G > X^2{}_{(v,\alpha)} = 11{,}070$ with a $p - value\ (0{,}000) < \alpha(0{,}05)$ which means that H_0 is rejected and it can be concluded that there is at least one predictor variable that has a significant effect on the response variable. This result requires partial testing which refers to the P-value of each parameter.

Table 12. Parameter Estimation of Ordinal Regression

Variable	Coef	SE Coef	P	Odds Ratio
Const(1)	12,0491	2,97760	0,000	
Const(2)	16,2456	3,39357	0,000	
X1	-0,829637	0,523263	0,113	0,44
X2	-1,64802	0,720143	0,022	0,19
X3	-1,27296	0,660722	0,054	0,28
X4	0,680362	0,845765	0,421	1,97
X5	-0,915888	0,948176	0,334	0,40

Table 12 shows the two constant values in each logit, which were obtained because the model consists of three categories. These constants result in two logit models. It can also be seen that there is one predictor variable that has a significant effect on E-KTP service satisfaction, namely the Reliability variable (X_2) with a $p - value < 0{,}05$. Therefore, the logit link function for each response category is as follows.

$$Logit\ 1 = 12{,}0491 - 0{,}829637X_1 - 1{,}64802X_2 - 1{,}27296\,X_3 + 0{,}680362X_4 - 0{,}915888X_5$$

$$Logit\ 2 = 16{,}2456 - 0{,}829637X_1 - 1{,}64802X_2 - 1{,}27296\,X_3 + 0{,}680362X_4 - 0{,}915888X_5$$

with logit $i = ln\left(\frac{\gamma_j(\boldsymbol{X})}{1-\gamma_j(\boldsymbol{X})}\right)$

Based on the partial test results, because the reliability variable is significant in the partial test, there is enough evidence to strengthen the interpretation of the odd ratio. So that if the reliability variable increases by one unit, the chance of E-KTP service quality decreases by 81%.

Table 13. Goodness of Fit Test

Method	Chi-Square	DF	P	Method
Deviance	129,444	233	1,000	Deviance

Table 13 shows the results of the model fit test to determine whether or not the model fits the ordinal logistic regression model. From the table, it can be seen that the $p - value\ (0{,}000) > \alpha(0{,}05)$ so that the ordinal regression model that has been obtained is suitable. Next, calculate the classification accuracy of the model based on the probability value and data classification.

Table 14. Classification Data

Actual (Y)	Prediction (Y)			Total Observation
	1	2	3	
1	2	3	1	6
2	1	21	16	21
3	0	4	72	93

Based on **Table 14**, The dissatisfied category was predicted correctly by 2, the moderately satisfied category was predicted correctly by 4, and the satisfied category was predicted correctly by 72. From these results, the model classification accuracy value is 79,167%.

5. Conlusion

The results of the CSI analysis obtained the results of the level of satisfaction of E-KTP services at the Dispendukcapil Sidoarjo of 84.613%, which means that the satisfaction of E-KTP services at the Dispendukcapil Sidoarjo is very satisfied with the services provided. The analysis results using the IPA method obtained 5 attributes in quadrant I, 5 in quadrant II, 5 in quadrant III, and 5 in quadrant IV. Factors affecting E-KTP service satisfaction are reliability variables with the results of the classification accuracy of the model estimate of 79,17%.

6. References

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