



# An Importance Performance Analysis (IPA) Model: Review E-government Web Portal Quality of Service

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**Abstract**—E-government web portal as important medium to deliver information that can be accessed instantly, look like a connector between the local government and the civil society. So that a more effective and efficient public services can be access. This paper aim to know users perception towards e-government web portal of municiple Tanah Datar. This research use questionnaires to collect data from 275 respondents and applies a model Importance Performance Analysis (IPA) to measuring the level of satisfaction of e-gov web portal. The finding suggested the government should have a prompt respond to overcome the users problems to give feedback on the users input and update their information of the web portal regularly.

**Keywords**—*satisfaction; service; quality; importance; performance*

## I. INTRODUCTION

An e-government portal site currently developed that might be used in several local government sectors. it's not only the citizens but local government officer should be able to enter the data for their work purposes. This is importance how this research is to measure the relationship between users perception and priority of service quality will be take an improvement of a city e-government web portal. The Tanah Datar regency web portal has a case study that many civil servants has not been able to use this application. Maybe cause of age, or something else. Action needed for educate them how to use to the main users such as government officers.

E-government around the world are promise to provide more decentralized information management solutions in government and make public digital platforms more transparent and efficient. Software developers around the world have come up with a range of digital solutions to accelerate these reforms [1]. E-government as a multidimensional construct with customer orientation, channel orientation and technology orientation as its predecessors [2]. The two most important predictors of satisfaction with one- and two-star accommodation are accommodation infrastructure and employee expertise [3]. The importance-performance analysis (IPA) has been developed and widely utilized to understand customer satisfaction and

prioritize provision strategies based on the assumption that satisfaction is resultant from preference (perceived importance) for a service and a relevant judgment of its performance [4].

This scientific paper gap founded that there is no research exactly really the same before. Various references that they have different points of view so they calculated in different ways and steps. This study combines assumptions from youtube, it has a final correlation on the cartesian diagram. We created an accuracy table from raw data to read in the final diagram. This research is very helpful for analysts to solve user perception problems, users difficulties and find out what will improve.

An excellent and eeffective method to resolve this difficult problem is not complicated. The introduced IPA model is the one the managers truly need. The IPA model is an integrated model that simultaneously considers quality requirement characteristics and the perception and expectation of users for each service attribute [5]. To identifies 'gaps' that cause unsatisfactory services. Users generally match the service they 'experience' with the service they 'expect' [6]. An unique perspective of social entrepreneurship to e government service delivery and provides recommendations for policy makers to focus on satisfying these intermediaries for sustainability in the digital mainstream [7].

This paper aims to experimentally evaluate the performance of services web portal e-government. It also shall confirm and illustrate the conceptquences gap on the performance with the importance in ensuring their service quality. Researchers tries to incorporate the existing e-gov literature, but focused on studies that meet the criteria for evaluating government websites, to align with the public's emphasis on this research [8].

## II. RESEACH METHOD

The research used quantitative method. The results will be presented by numbers. The research used a survey method that will prove the vibes or relationship (association). Users perception of performance as an independent variable (X), and expectations of service quality as the dependent variable (Y) was labelled as reseach design or model. On the other hand, the

present study combines the likert scale with a proposed IPA to classify service attributes and then diagnoses which service attributes should be prioritized or should be maintained with their current level of performance. the proposed approach could help determine a proper and effective service improvement strategy public information. Another characteristic of the approach is its simplicity advanced statistical knowledge is not required [5].

The following procedure how this research running as well as described on this Figure 1.

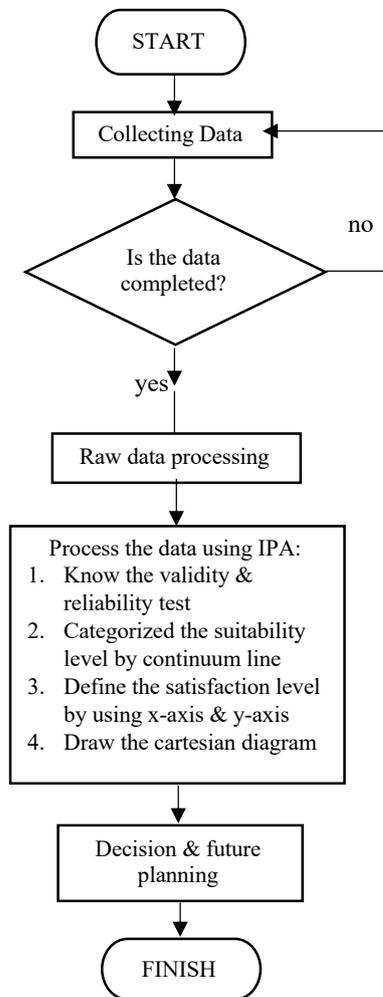


Fig. 1. Research procedure.

The research begin from collect the datas from questionnaire by google form. Then, the data was processed into validity and reliability test, suitability level and cartesian diagram. This reserach analyze how users perception using e-government web portal Tanah Datar. The object of the research is the result of users expectations labelled as importance (Y) and service performance labelled as performance (X). The subjects of this research are the citizens of Tanah Datar and civil servants of government officer regional.

We understand how ethics should inform choice of study topic, study design, methods of obtaining consent, data management, and access to treatment after closure of the study [9]. Over all this paper completed the research ethics. On the other hand, the application of ipa model involves the use of structured questionnaires that are applied to customers asking them about their service expectations and perceptions.the gap between expectations and perceptions can be calculated for each quality dimension [10].

Data collection techniques completed by distributing questionnaires by google form. Data processing start from analyzing raw data to carried out the level of conformity per item of each commitment. Next the level of satisfaction by looking for x and y intersection points, describe the average results of importance and performance, the mean and x-axis and y-axis into a cartesian diagram. Data analyze in four quadrans.

A. Importance Performance Analysis (IPA)

Importance Performance Analysis (IPA) used to identify gaps in the performance of public transport service attributes relative to their importance [11]. It can help to inform the operation and management of public information. Government agencies need to establish standards and monitor compliance regarding the quality of web portal operations. Operators need to ensure minimise error code on these pages. This case study provides insights regarding public information [12].

Importance Performance Analysis (IPA) can be conducted through online reviews, then it would be convenience for decision-makers or managers to understanding customer satisfaction and formulating improvement strategies for services considering multiple competitors and different time periods [13].

B. The Likert Scale

The Likert scale uses five levels of statements range score scale of 1-5 shown on Table 1.

TABLE 1. THE LIKERT SCALE

Performance/ Importance	Score
Very Dissatisfied/ Very Unimportant	1
Dissatisfied/ Unimportant	2
Satisfied-enough/ Important enough	3
Satisfied/ Important	4
Very Satisfied/ Very Important	5

C. Performance – Importance Attributes Description

We have four attributes and 21 sub attributes with multiple statements of each attribute. From 21 statements respondents filled out as a tour experience exploring the e-government web portal. Here is the sentences on Table 2.

TABLE 2. THE ATTRIBUTES DESCRIPTION

Reliability	
RB 1	Download files/content is a short time
RB 2	Users access the website wherever they are
RB 3	The users succeeded the first time access
RB 4	The web service is on time
RB 5	The web process speed is good enough for users

RB 6	Website can be used with any browser
<b>Trust</b>	
KP 1	The website asks for a password and username
KP 2	The username and password that you use on the web is safer
KP 3	Use of user's personal data only as necessary
KP 4	The data archived on the web can be kept confidential
<b>Efficiency</b>	
EF 1	The web structure is easy and clearly for users to follow
EF 2	The search engine on the web is effective to help users search
EF 3	The site map according to the users is well organized
EF 4	The website already fulfilled the needs of users
EF 5	The available information was detailed
EF 6	The information on the website is up to date
EF 7	The instructions for filling out the form are sufficient
<b>Citizen Support</b>	
CS 1	The city government shows their interested in solving users problems
CS 2	The city government processed input quickly
CS 3	The city government has specific knowledge to answer users questions
CS 4	The city government giving trust and confidence to users

III. RESULT AND DISCUSSION

The third part of this paper are result and discussion. This sub sections has made some tables and Figures in detail. Before we take conclusion, it focused to the main part that includes descriptive statistic, the the result of validity and reliability, how calculate and Importance Performance Analysis (IPA) model analysis.

A. Respondents Distribution Profile

The descriptive data analysis was interpreted by gender and occupation.

1) *Gender*: The gender of the respondents consisted of two male and female. After the questionnaires were distributed to 275 respondents, the profile of respondents by gender can be seen in Table 3.

TABLE 3. PARTICIPANTS GENDER

Gender	Frequency	%
Male	98	64,4
Female	177	35,6
Total	275	100

2) *Occupations*: Based on the level of the respondents occupation, majority of respondents as civil servants by 164 people or 60.1% The diagram is as shown in Figure 2.

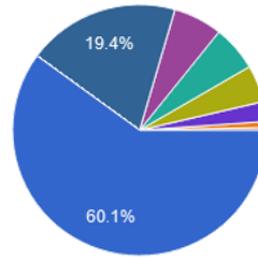


Fig. 2. Occupation percentage.

Based on the diagram majority of them were civil servants, and honorary.

3) *Age*: Respondents who filled out the survey identified as minimum age of 21 years old and a maximum of 58 years old. The total age number data of respondents shows in Figure 3.

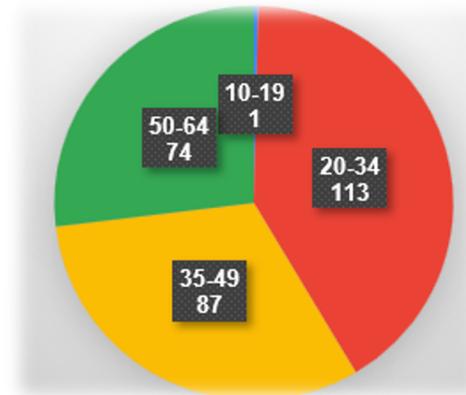


Fig. 3. The Respondents Age.

From the figure above we reached 161 persons on age 35 – 64 years old citizens filled out this research. It means they still on productive age but some of them can't using this web portal.

B. Validity and Reliability

The validity test is carried out by comparing the r value with rtable for degrees of freedom (df) = n-2. from 21 sub-attributes all statements are valid. The following tables are the reliability testing e-government web portal service. Basic for making reliability decisions:

- 1) *The Cronbach alpha value > 0.6 the questionnaire instrument is reliable (reliable).*
- 2) *The Cronbach alpha value < 0.6 the questionnaire instrument is not reliable.*

Here is the following sentences show the reliability of the importance and performance.

The Table 4. shows the result of cronbach's alpha of reliability of the performance and importance.

TABLE 4. CRONBACH'S ALPHA OF RELIABILITY

Cronbach's Alpha	N of Items	Cronbach's Alpha	N of Items
.984	21	.973	21

Based on the table 4, we can conclude that the r alpha has reached 0.984 for the performance and 0.973 for the importance which is labelled reliable cause greater than standard r Alpha table 0.6.

C. Importance Performance Analysis (IPA)

The traditional importance performance analysis assumes that there are no interactions among the survey items. without considering the interactions among the survey items [14]. The following steps of IPA were detailing here:

1) *The Conformity Level:* Conformity level made to measuring the level of suitability by measuring the company's rating scale with the user's expectation scale multiplied by 100%. The research, each level is described according to the each attribute per item of performance and expect importance. To identify the final scores of the attributes by a continuum line 25%-43,75% called the lowest range, 43,75% – 65,5% called low, 65,5%-81,25% called high and 81,25%-100% called very high. The following Table 5 describe each level of conformity of each attributes per item of performance and importance:

TABLE 5. THE CONFORMITY LEVEL OF ALL ATTRIBUTES

	x 1	x 2	x 3	x 4	x 5	
<b>Performance</b>						
	VD	D	SE	S	VS	Score
RB	37	191	617	445	360	1650
						X1= 5850
Trust	17	109	423	334	217	1100
						X2= 3925
Eff	54	268	730	476	397	1925
						X3= 6669
CS	142	217	339	203	199	1100
						X4= 3400
<b>Importance</b>						
	VU	U	IE	I	VI	
RB	15	43	221	503	868	1650
						Y1= 7116
Trust	12	29	146	327	586	1100
						Y2= 4746
Eff	10	52	283	494	1086	1925
						Y3= 8369
CS	16	49	171	316	548	1100
						Y4= 4631
<b>Tki</b>						
Tki1	P1/I1		Very high		82,2%	
Tki2	P2/I2		Very high		82,7%	
Tki3	P3/I3		High		79,6%	
Tki4	P4/I4		High		73,4%	
Tki Total	$\Sigma xi / \Sigma yi$					
Average	$\Sigma xi$	$\Sigma yi$	80%			

By the results of the level of suitability the most striking score is the citizen support e-government web portal, which is total average 80% and it was included in "high" category, which means that users are satisfied enough with the performance of the government services of the Tanah Datar e-gov web portal.

2) *User Satisfaction Level:* The value of the user satisfaction level is estimated by abstract satisfaction indices that are hard to understand and compare [15]. This researched approach of user satisfaction by profoundly analyzing the user's perception. We'll show up the satisfaction level for the intercept of x-axis and y axis using this formula 1 and 2:

$$\bar{x} = \frac{\sum_{i=1}^n \bar{x}_i}{k} = \frac{72,16}{21} = 3,44$$

$$\bar{y} = \frac{\sum_{i=1}^n Y_i}{k} = \frac{90,41}{21} = 4,31$$

From the results above they show up the x-axis intersection is average number of performance divide to how much number of sub-attributes, so x-axis got 3.44 in horizontal coordinat. and the y-axis intersection is average number of importance divide to how much number of sub-attributes, so y-axis got 4.31 in vertical coordinat. The x-axis and y-axis point will be used in the cartesian diagram.

3) *The Cartesian Diagram:* The importance and performance pairs for each attribute are plotted in the matrix. The horizontal axis represents the degree of importance, and the vertical axis denotes the degree of performance can be seen on Table 6.

TABLE 6. THE AVERAGE LEVEL OF THE PERFORMANCE AND IMPORTANCE.

Performance	
X	Y
3,44	4
3,44	4,5
Importance	
X	Y
3	4,31
3,7	4,31

The average total performance is 3.44 and the average total importance is 4.31. Here is the sentences on Figure 4.

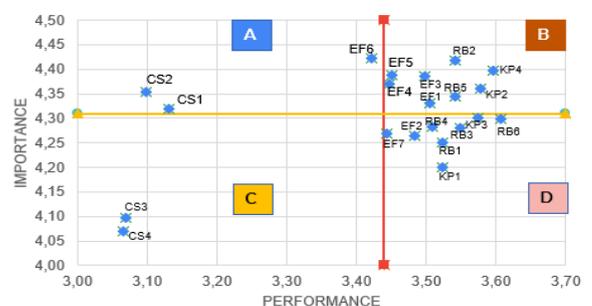


Fig. 4. The Cartesian Diagram

Quadrant A includes (a) CS1: the city government has not shown an interest to solving user problems, likes inability of

senior civil servants and related users to use gadgets or technology, (b) CS2: the city district government has unable to complete the input problems quickly. the Tanah Datar district e-government web portal was not yet have a responsive suggestion column and (c) EF6: some information on the website not up to date.

#### IV. CONCLUSION

All of items used to measuring the variables in this research have correlation coefficient that greater than the r table of 0.118 for a sample of 275 respondents. From these results indicate that all statement which is labelled “valid”. The r alpha value has reached 0.984 for the level of service performance and 0.973 for service importance so this value is greater than compared to the standard r Alpha table of 0.6 which labelled all is reliable attributes.

Users satisfaction is an ever-increasing issues of importance but is not easily addressed. Researchers and practitioners have tried to develop the different approaches to addresses this issues. An excellent and effective method to resolve this difficult problem is not complicated. The introduced IPA model is the one the managers truly need. The IPA is a model that simultaneously considers quality requirement characteristics and the perception and expectation of users for each service attributes.

The level of suitability of the 4 attributes and 21 statements has a total Tki of 80% which is labelled “high”. The final result of the Cartesian diagram shows that quadrant A should be up to date are concentrate here.

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