

## PERANCANGAN ATRIBUT KEBUTUHAN PADA SITUS PENJUALAN UMKM "URANIWARABBIT" MENGGUNAKAN INTEGRASI DIMENSI WEB QUALITY DAN REFINED KANO MODEL

### *DESIGNING ATTRIBUTES OF CONSUMER NEEDS OF AN SME "URANIWARABBIT" SALES WEBSITE THROUGH THE INTEGRATION OF REFINED KANO MODEL AND WEB QUALITY*

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#### Abstrak

Persepsi publik mengenai kepemilikan hewan peliharaan bukan hanya menjadi kebutuhan tambahan, namun kini sebagai alternatif penyedia perasaan kekeluargaan serta sumber daya yang mampu membantu memperbaiki kualitas hidup seseorang. Uraniwarabbit adalah UKM yang beroperasi di bidang penjualan beragam produk hewan peliharaan dengan fokus spesialisasi hewan peliharaan kelinci. Diantara banyaknya saluran penjualan, situs web Uraniwarabbit hanya mampu berkontribusi sebesar 0.73% dari total penjualan bulan Januari hingga Desember 2020 menandakan adanya keperluan perbaikan layanan situs web agar konsumen beralih untuk lebih memilih menggunakan situs web dibanding dengan saluran lain. Berdasarkan kajian pendahuluan, diidentifikasi 22 atribut kebutuhan yang dikelompokkan menggunakan enam dimensi penelitian Web Quality. Penelitian ini menggunakan integrasi metode Web Quality dan Refined Kano model dalam pengolahan dan kategorisasi atribut kebutuhan pelanggan untuk menentukan True Customer Needs sebagai landasan perumusan rekomendasi perbaikan layanan situs web penjualan Uraniwarabbit. Dari 22 atribut kebutuhan yang ditentukan, 12 diantaranya diidentifikasi sebagai True Customer Needs penelitian ini. Hasil identifikasi kemudian dijadikan landasan perumusan rekomendasi akhir dengan masukan dan validasi dari pihak perusahaan.

**Kata kunci :** Situs Web Penjualan, Web Quality, Refined Kano Model, True Customer Needs

#### Abstract

*The public perception of pet ownership is not only an additional need but as an alternative for familial feelings, and resources that can help improve one's quality of life. Uraniwarabbit is an SME that operates in the field of selling various pet products with a specialty in pet rabbits. Founded in 2011 as an online business, it has several sales channels such as Tokopedia, Shopee, Bukalapak, Instagram, Website, and an Outlet. Among the sales channels owned, sales through the website only contributed a total of 0.73% of total sales from January to December 2020. Therefore, there is a need to improve the website services so that potential customers switch to transact on the sales website, and encourage sales growth. Based on the preliminary study, 22 attributes of needs were identified. It's then grouped into the six dimensions of Web Quality. This study uses the integration of Web Quality and Refined Kano model in processing and categorizing attribute of customer's needs to determine True Customer Needs as the basis for formulating recommendations to improve Uraniwarabbit sales website. Of the 22 attributes discovered, 12 of them are identified as True Customer Needs. The identification results are then used as the basis for formulating the recommendation with input and validation from the stakeholder.*

**Keywords :** Sales Website, Web Quality, Refined Kano Model, True Customer Needs

## I. Introduction

Uraniwarabbit is an SME that operates in the field of selling a variety of pet products with a special emphasis on rabbits. In addition to selling pet products such as fodder, accessories, cages, and medicines, Uraniwarabbit also breeds pet rabbits where the rabbits that are raised are exotic rabbits, which are used for beauty competitions.

As an e-commerce store that mainly sells pet products online, Uraniwarabbit has various sales channels such as Tokopedia, Shopee, Bukalapak, Instagram, Website, and Outlet Stores. It can be noted that the combination of e-marketplace platforms: Tokopedia, Shopee, and Bukalapak dominates the distribution of historical sales data. It can also be noted that the sales results through the website have the least contribution, namely 0.73% which indicates the low use of the website as a transaction medium. While it is true, there are several benefits of a e-marketplace being ease of use. The owner of Uraniwarabbit stated that they felt a general loss of income due to e-marketplace site services like administrative costs, limited analytic features, and pro-consumer policies. The combination of these three things is considered detrimental to the income that Uraniwarabbit gets each month, and indicates the need for improvement in website services to increase overall business revenue. To find out the cause of the lack of sales through the website, a preliminary study was conducted by interviewing 8 Uraniwarabbit customers who had made a purchase through one of the sales channels and found out that the company has a sales website. Consumer responses regarding the sales website can be seen in Table I.1 below.

Table I. 1 Consumer complaints of Uraniwarabbit's website

Customer complaints	Percentage of response
Website is hard to navigate to find the desired product	88%
Website has yet to provide much needed information like price, availability, and specs.	75%
The transaction process has no convenient options and is done through contact with the business owners.	75%
A lot of buttons and links on the website is not working or working but un-intended	50%
There is no search bar present in the website	50%
The layout of the sites is a mess and inconsistent with what is shown on display	50%
The appearance of the website is unappealing to see	25%

Based on the results of the interview, it can be identified that there are deficiencies in website services that are causing consumer tendency to prefer the use of e-marketplace sites over websites. This indicates the need to identify the attributes of consumers' needs to improve the performance of website services so that consumers can comfortably use the website as the main channels of transaction. Previous studies like [1], [2], and [3], suggests an integration of Refined Kano Model [4] and Web Quality [5] to design True Customer Needs.

## II. Theoretical Basis

### II.1 Web Quality

Web Quality is a model that approaches the quality of a website based on user perceptions. Barnes and Vidgen (2002) as the originators and developers of this concept stated the importance of an organization to evaluate the performance of a website, in order to gain an understanding and achieve sustainability [6]. The use of the Web Quality dimension to assess the quality of websites in the form of e-commerce sites, MSMEs, and various e-service websites has been shown in many previous studies. Table II. 1 below, compares various previous studies based on the research object and the previously used Web Quality dimensions.

Table II. 1 Web Quality Dimension Comparisons

Author(s)	Object	Dimension
(Rababah & Masoud, 2010)	E-commerce website	<i>Usability, Conceptual Reliability, dan Representative Reliability</i>
(Canziani & Welsh, 2016)	SME website	<i>Usability, Information, Interactivity, Mobility, dan Intelligence</i>
(Mayasari & Audina, 2018)	E-service website	<i>E-Satisfaction, Efficiency, Fulfilment, Privacy, dan System Availability</i>
(Chauhan, Banerjee, & Banerjee, 2019)	E-commerce website	<i>Website Design, dan Reliability</i>
(Ramadhanti & Slamet, 2019)	SME website	<i>Information Quality, dan Promotional Quality</i>

The dimensions of the Web Quality were determined based on whether it has any relation to the problem at hand and can be used to improve Uraniwarabbit's website services. The results of which are: Usability, Information Quality, Service Interaction, Conceptual Reliability, Representative Reliability, and Website Design. A deeper understanding of the selected dimensions is as follows:

1. Usability  
Assessment of user interaction with the site. Associated with navigation and views that are presented to the user [5].
2. Information Quality  
Assessment of information systems as a whole. Associated with the content presented, the suitability of the information written in terms of format, accuracy, and relevance [5].
3. Service Interaction  
Assessments related to user interactions and services that users feel while using the site [5].
4. Conceptual Reliability  
The capacity of the website to implement what was previously determined at the planning and design stages [7].
5. Representative Reliability  
The ability of a website to represent characteristics that affect user understanding of what the website is supposed to be [7].
6. Website Design  
The customer's perception of the appearance, structure and aesthetic value of the website [7].

## II.2 Refined Kano Model

As time went on, research related to the use of the Kano model [12] as a tool for developing or improving the quality of products and services has also developed to accommodate changes in the type of research. Kano's model was then developed further with a wider emphasis and description of the level of importance of attributes perceived by consumers [4].

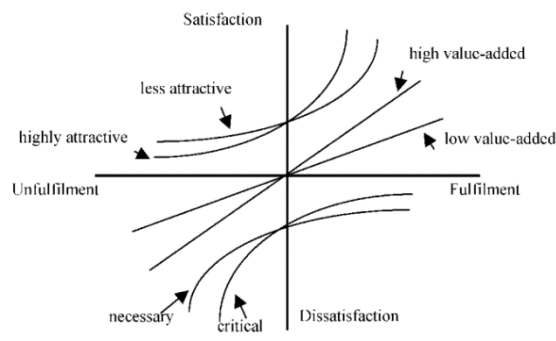


Figure II. 1 Refined Kano Model Attribute

As seen above in Figure II. 2, Refined Kano Model introduces the element of quality within each attribute category. It is a result of the further development of Kano model that adds emphasis on the value of importance. Yang's previous research (2005), formulated the categorization of attribute satisfaction based on the level of importance; high importance and low importance. The

following is the description of the attribute categories which were further developed from the Kano Model to the Refined Kano Model [4]:

1. Attractive Quality Attribute

The Refined Kano model divides the Attractive categories into two, Highly attractive and Less attractive:

- Highly attractive quality attributes

This attribute represents the strategic elements that can be implemented. If there is, it will be a powerful weapon for a group to attract the attention of new consumers.

- Less attractive quality attribute

This attribute does not have the power of attraction to consumers, so it can be removed in conditions that are more favorable for the designer not to have this attribute element.

2. One-dimensional Quality Attribute

Kano's Refined Model divides the One-dimensional category into two, High-value-added and Low-value-added:

- High-value-added quality attributes

As shown in the illustration of Kano's Refined Model, this attribute has a significant contribution to customer satisfaction. However, the absence of this element can have a negative effect on customer satisfaction.

- Low value-added quality attribute

Similar to the high-value added attribute, this attribute has a similar impact but with a small difference where the resulting impact will be less and consumers will not

3. Must-be Quality Attribute

The Refined Kano model divides the Must-be categories into he, Critical and Necessary:

- Critical quality attributes

This attribute is very crucial to achieve customer satisfaction. The absence of elements that represent this attribute will stimulate a negative response related to customer satisfaction.

- Necessary quality attributes

Similar to the Critical Quality Attribute, but as a company, the achievement of this attribute can be at a sufficient level and is useful only to not create a disappointed response from consumers.

4. Indifferent Quality Attribute

The Refined Kano model divides Indifferent into two categories, Potential and Care-free:

- Potential quality attributes

This attribute has developmental properties that depend on time. The longer it takes, the higher the customer satisfaction response will be. Companies can use this attribute as a weapon to attract the attention of consumers in the future.

- Care-free quality attribute

If the conditions allow, then the implementation of this attribute can be overridden to meet other attributes. This can happen because the level of consumer satisfaction is not influenced by this attribute.

### II.3 Kano Questionnaire Processing

The Kano questionnaire was designed with a pair of functional and dysfunctional questions. Figure II. 2 below shows how such questionnaire is then processed with through an evaluation table. Questions are formed on the basis of participants' opinions if the attribute exists (functional), and if the attribute does not exist (functional) to assess Attractive Quality [12].

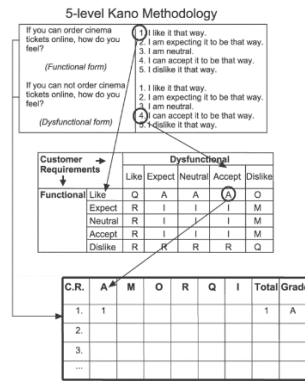


Figure II. 2 Kano Questionnaire Processing [13]

Respondents will choose an answer that contains a response if the attributes presented are functional and dysfunctional with an answer scale of 1 to 5 based on perception and level of agreement. After coding and evaluating respondents' answers, attribute categorization is carried out using the help of Blauth's Formula as follows:

1. If  $(\text{One-dimensional} + \text{Attractive} + \text{Must-be}) > (\text{Indifferent} + \text{Reverse} + \text{Questionable})$ , then the grade obtained is the maximum value of (One-dimensional, Attractive, and Must-be).
2. Otherwise, the grade obtained is the maximum value of (Indifferent, Reverse, and Questionable).
3. If the same, then the grade obtained is the maximum value of (One-dimensional, Attractive, Must-be, Indifferent, Reverse, and Questionable).

**II.4 Conceptual Model**

The purpose of making a conceptual model is to determine the relationship between the variables that will be used for research, as well as an outline of the research to be carried out. Figure II. 3 below shows how the integration between the refined kano model and the Website Quality dimension makes it possible to extract the attributes of consumer needs related to the Uraniwarabbit sales website, as well as obtain True Customer Needs (TCN).

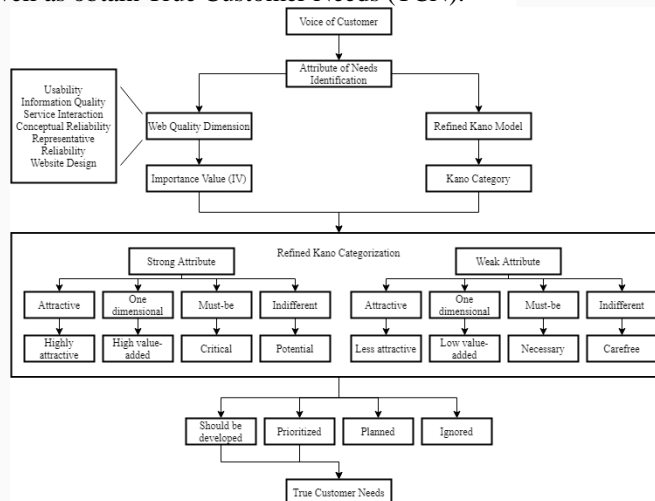


Figure II. 3 Conceptual Model

The collection of Voice of Customer (VoC) is done by conducting interviews with participants who, in the past, have made purchases of goods through one of the company's sales channels and is aware of the existence of a website managed by the company itself. Then, the VoC is then processed through affinity diagram grouping based on the previously identified Web Quality dimensions.

Then the attributes that have been identified will be re-categorized, this time based on the importance of strong and weak. The results of this categorization are eight categories that divide the attributes of consumer needs into highly attractive, less attractive, high value-added, low value-added, critical, necessary, potential, and carefree, then sorted by the value obtained, which will be divided into four final criteria: developed, prioritized, held, and ignored. Only then True Customer Needs (TCN) is obtained, namely attributes that should be developed, and prioritized to exist. Uraniwarabbit can then design a customized sales website based on TCN to improve website performance which is managed according to the capabilities of business actors.

### III. Methodology

To start off with the preliminary stage, problem formulation was carried out by conducting observations, interviews, and literature studies. Voice of Customers are collected by means of interviews with a total of 8 customers of Uraniwarabbit. The result of which is then processed into the various dimensions of Web Quality as seen in Theoretical Basis. The process resulted in 22 attribute indicators obtained from various previous research literature studies and Voice of Customer (VoC) interviews from preliminary studies. The narrowed down attributes is then made into questionnaires fitting the methodology. First of which is the Web Quality questionnaire which is used to collect data of Importance Value (IV) as seen by the customer's perspective and Refined Kano Questionnaire which seeks to categorize the attributes based on the customers perception and opinion regarding whether or not said attribute is available (functional) or not available (dysfunctional).

The formulated questionnaire is then put into a pilot study or pre-test to test the content and construct validity and see if it is suitable and relevant to the study [14]. The pilot study is conducted with the bare minimum of 30 respondent in order to know the data distribution [15]. A normality test using one-sample Kormogolov Smirnov resulted with all the items being not normally distributed. Then, a validity test using Spearman's rho is conducted to check whether the data gathered is valid. For the sampling technique, the study uses a purposive sampling where respondents are selected based on a criteria that has been previously decided. The sample size is determined to be a minimum of 140 as a result of there being 22 attributes [14].

By the end of the collecting period, a total of 345 response were recorded. The response are then screened through based on the criteria and whether or not the data is valid. The final result obtained is 143 valid responses. To check whether the data is reliable or not, a reliability test is conducted using Cronbach's Alpha where it shows that all data is reliable as they showed a value above the threshold of 0.6 [14].

### IV. Result and Discussion

#### IV.1 Web Quality Questionnaire Data Processing

In processing and analyzing Likert-scale data, previous research suggested an average weighting to obtain a central tendency [16]. From this weighting value, the Interest Value (IV) is the determinant of attribute categorization in integration with the Refined Kano Model questionnaire. of the identification and processing of attributes can be seen in the following table.

Table IV. 1 Web Quality Questionnaire Data Processing - 1

No.	Attribute	IV	Category
1	US-1	4.673	Strong
2	US-2	4.558	Strong
3	US-3	4.592	Strong
4	US-4	4.490	Weak
5	IQ-1	4.755	Strong
6	IQ-2	4.544	Strong
7	IQ-3	4.762	Strong
8	IQ-4	4.585	Strong
9	SI-1	4.020	Weak
10	SI-2	4.714	Strong
11	SI-3	4.327	Weak
12	CR-1	4.544	Strong



Table IV. 2 Web Quality Questionnaire Data Processing - 2

13	CR-2	4.816	Strong
14	CR-3	4.415	Weak
15	CR-4	4.272	Weak
16	RR-1	4.503	Weak
17	RR-2	4.510	Strong
18	RR-3	4.408	Weak
19	WD-1	4.422	Weak
20	WD-2	4.571	Strong
21	WD-3	4.184	Weak
22	WD-4	4.469	Weak
Average		4.506	

Based on Table IV. 1 and Table IV. 2 above, the average IV is 4,506. This is the basis for identifying 14 attributes that are categorized as strong, and 8 attributes that are categorized as weak. The strength of the attributes here can be correlated with how the customer perceives the importance of an attribute offered when shopping through a sales website. The stronger the attribute, the more important the attribute in the view of consumers.

#### IV.2 Refined Kano Model Questionnaire Data Processing

The Refined Kano Model questionnaire aims to group the attributes of the research dimensions into the Kano category. This questionnaire is designed with two parts, functional and dysfunctional. The combined answers to the two questionnaires were then entered into Kano's evaluation table to obtain attribute classification. The result of this is then used to categorized using the help of Blauth's Formula. The following Table IV. 3 is the result of Kano's categorization with the help of Blauth's Formula.

Table IV. 3 Kano Categorization

No.	Attribute Code	Total Attribute Classification						M+O+A	I+R+Q	Kano Category
		M	O	A	I	R	Q			
1	US-1	23	40	42	41	1	0	105	42	A
2	US-2	33	49	32	32	0	1	114	33	O
3	US-3	31	58	30	27	0	1	119	28	O
4	US-4	35	50	34	27	1	0	119	28	O
5	IQ-1	23	85	28	10	1	0	136	11	O
6	IQ-2	37	57	30	22	1	0	124	23	O
7	IQ-3	27	98	15	7	0	0	140	7	O
8	IQ-4	27	59	37	24	0	0	123	24	O
9	SI-1	39	32	23	52	0	1	94	53	M
10	SI-2	30	97	11	7	1	1	138	9	O
11	SI-3	13	25	36	61	1	11	74	73	A
12	CR-1	24	53	35	34	1	0	112	35	O
13	CR-2	25	104	11	6	0	1	140	7	O
14	CR-3	29	37	24	57	0	0	90	57	O
15	CR-4	37	33	30	47	0	0	100	47	M
16	RR-1	32	74	21	20	0	0	127	20	O
17	RR-2	22	59	45	21	0	0	126	21	O
18	RR-3	28	63	19	34	1	2	110	37	O
19	WD-1	28	40	44	29	1	5	112	35	A
20	WD-2	24	50	39	33	1	0	113	34	O
21	WD-3	15	35	44	52	1	0	94	53	A
22	WD-4	39	67	16	25	0	0	122	25	O

### IV.3 Integration of Web Quality and Refined Kano Model

The results of the processing of the two previous questionnaires were then integrated into the design of the Refined Kano Model attribute, which is a Kano categorization that considers the value of interest of the attribute. The final result of this integration processing is True Customer Needs (TCN), which are attributes that are deemed to have to most impact on the customer. Table IV. 4 below shows the integration results.

Table IV. 4 Integration of Web Quality and Refined Kano Model

Attribute Code	IV	Attribute Category	Kano Category	Refined Kano Category	Integration Result
US-1	4.673	Strong	A	Highly attractive	Should be developed
US-2	4.558	Strong	O	High value added	Prioritized
US-3	4.592	Strong	O	High value added	Prioritized
US-4	4.490	Weak	O	Low value added	Planned
IQ-1	4.755	Strong	O	High value added	Prioritized
IQ-2	4.544	Strong	O	High value added	Prioritized
IQ-3	4.762	Strong	O	High value added	Prioritized
IQ-4	4.585	Strong	O	High value added	Prioritized
SI-1	4.020	Weak	M	Necessary	Planned
SI-2	4.714	Strong	O	High value added	Prioritized
SI-3	4.327	Weak	A	Less attractive	Planned
CR-1	4.544	Strong	O	High value added	Prioritized
CR-2	4.816	Strong	O	High value added	Prioritized
CR-3	4.415	Weak	O	Low value added	Planned
CR-4	4.272	Weak	M	Necessary	Planned
RR-1	4.503	Weak	O	Low value added	Planned
RR-2	4.510	Strong	O	High value added	Prioritized
RR-3	4.408	Weak	O	Low value added	Planned
WD-1	4.422	Weak	A	Less attractive	Planned
WD-2	4.571	Strong	O	High value added	Prioritized
WD-3	4.184	Weak	A	Less attractive	Planned
WD-4	4.469	Weak	O	Low value added	Planned

### IV.4 True Customer Needs

After integrating the IV obtained from Web Quality dimensions and the Kano Category, a Refined Kano Categorization can be made. As previously mentioned in chapter three, what constitutes True Customer Needs are attributes with Refined Kano Category of "Prioritized" and "Should be developed".



Table IV. 5 True Customer Needs

No	Code	True Customer Needs
1	US-1	The website to have an interface that can support its usability
2	US-2	The website to have regular maintenance to reduce the occurrence of crashes
3	US-3	The website can be operated for users without much effort
4	IQ-1	The website to display relevant information related to products sold such as price, quantity, and specifications
5	IQ-2	The website to tailor to the user needs when it comes to presentation or display
6	IQ-3	The website to provide reliable information
7	IQ-4	The website to provide accurate and relevant search results according to the user's needs
8	SI-2	The website to give user a sense of security when interacting
9	CR-1	The website to be up and running at all times
10	CR-2	The website to safeguard and not misuse personal user data
11	RR-2	The website to have sales transaction support features
12	WD-2	The website to have a comfortable and attractive appearance

As seen within Table IV. 7, there are 11 attributes categorized as “Prioritized” which are: US-2, US-3, IQ-1, IQ-2, IQ-3, IQ-4, SI-2, CR-2, RR-2, and WD-2. The result of which also shows that one attribute is categorized to be “Should be developed” which is, US-1. As mentioned beforehand in Chapter III, attributes that are used as the basis for the recommendations are attributes with the integration category of "Should be developed" and "Prioritized" which is considered to be True Customer Needs.

## V. Conclusion

Based on the objectives of this study, it can be concluded that:

1. Based on the specified Web Quality dimensions, there are 22 attributes of needs. These attributes are grouped into six research dimensions, namely Usability, Information Quality, Service Interaction Quality, Conceptual Reliability, Representative Reliability, and Web Design.
2. Based on the IV classification of the Web Quality dimension, the attribute needs are divided into several categories. Of the 22 total attribute of customer's needs, 14 of them are stated as strong attributes and 8 as weak attributes. Strong and weak attributes describe the importance of the need attributes based on the user's perspective if implemented for a sales website.
3. Based on the Kano Model classification, the attributes of needs are divided into several categories. Of the 22 total attributes of need, 16 of them are stated as One-dimensional attributes, four as Attractive, and two as Must-be. The One-dimensional category describes a category that has a negative impact if it is not implemented but is positive if it is implemented, Attractive describes an attribute that has a neutral impact if it is not implemented and is positive if it is implemented, and the Must-be attribute describes a standard attribute where implementation only has a neutral impact and does not. implementation has a negative impact.
4. Integration of Web Quality and Refined Kano Model results in refined Kano categorization. Of the 22 total attribute of customer's needs, 11 of them are listed as High Value Added, five as Low Value Added, one as Highly Attractive, three as Less Attractive, and two as Necessary. This categorization is Kano's categorization with the additional importance value of the previously obtained IV.
5. Based on the results of the categorization, True Customer Needs are determined. TCN is obtained based on the results of refined Kano's categorization with the category of Highly Necessary which needs to be developed, and High Value-Added which has priority. In this study, 11 attributes were assigned as a priority, namely: US-2, US-3, IQ-1, IQ-2, IQ-3, IQ-4, SI-2, CR-1, CR-2, RR-2, WD-1. And also 1 attribute as required which is US-1.

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