

“CUSTOMER DELIVERED VALUE”

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Abstract:

To study the customer value and to compare the rural and urban customers, data on various multi-item constructs related to customer delivered value were collected. Before going for the analysis, reliability of the data was checked by calculating reliability coefficient cronbach alpha values. Literature suggested that product value constituted of ten variables, of which product features further consisted of dimensions.

A customer may be ready to pay a higher price, he/she may overlook the associated services, may not care for the behaviour and competence of sales people or service provider, but wants the best of product-based values.

Keywords: Customer, Determinants, Segregation, Dimensions

Introduction:

Customer delivered value is the consumer's assessment of a product's overall capacity to satisfy his or her needs. It is the difference between the total customer value and the total customer cost of a marketing offer. Total customer value is the total of all the product, service, personnel and image values that a buyer receives from a market offering. Total customer cost is the total of all the monetary, time, energy and psychic costs associated with a market offering. To study the customer value and to compare the rural and urban customers, data on various multi-item constructs related to customer delivered value were collected. The respondents in the survey were asked to indicate their rating, with respect to different variables under the various heads of value such as, product value, service value, personnel value and image value as well as cost heads such as, monetary cost, time and energy cost, and psychic cost, on a five-point scale. Various items of each of these constructs were identified from the literature as

mentioned in before going for the analysis, reliability of the data was checked by calculating reliability coefficient cronbach alpha values, which are shown in Table 1.1. A large variation is observed in the reliability of various constructs, indicating varied under family of there by different sets of customers. There is no prescribed limit for the value of cronbach alpha, to be taken as reliable (Nunnally ---), particularly in the case of an exploratory survey. As explained earlier, content validity of the constructs was ascertained by identifying the variably from a comprehensive literature survey. The measurement instrument attempted to optimize the two to elicit authentic information for research.

Table 1.1

Cronbach Alpha value for multi-item constructs related to customer delivered value

S. No.	Construct	Rural	Urban	Overall
1	Product value	0.3882	0.3650	0.3778
2	Service Value	0.5383	0.3082	0.4150
3	Personnel Value	-0.0909	0.3776	0.1196
4	Image Value	0.3524	0.3903	0.4050
5	Monetary cost	0.3324	0.3703	0.3294
6	Time & Energy Cost	0.2330	0.0205	0.3094
7	Psychic cost	0.0925	0.1976	0.1437

The data generated during the survey was subject to preliminary exploratory analysis by computing the mean and standard deviation for various components of customer value and customer cost. Factor analysis was carried out for each of the constructs (viz product value, service value, personnel value, image value, monetary cost, time & energy cost, and psychic cost) to identify the underlying determinants of each of these, For comparing the determinants of each of the constructs of customer value, factor analysis and applied separately on the rural and urban customer segments.

Only those factors were retained, which enjoyed an eigen value of at least 1.00. To achieve an approximation to simple structure, extracted variables were rotated in accordance with the criterion of Kaiser's (1958) varimax procedure. Using the procedure outlined in Harman (1960) for approximating the standard error of factor loading, the loadings greater than 0.30 and significant at 0.05 level were identified. The communalities which give the proportion of variance for each of the original variables, preserved in the factor solution (denoted h^2), are listed in the last column of rotated factor matrix. The communalities are sum of squared loadings across rows of factor pattern and show how much of each variable is associated in the underlying principle components. The details of the analysis are presented below.

Findings – I

1.1 Determinants of Product Value of Whole sample

Product is the basic medium through which a customer satisfies his/her need or want. Therefore, satisfaction from the product is most important. A customer may be ready to pay a higher price, he/she may overlook the associated services, may not care for the behaviour and competence of sales people or service provider, but wants the best of product-based values. Literature suggested that product value constituted of ten variables, of which product features further consisted of fourteen dimensions. Various dimensions constituting product features were analysed separately and the remaining nine variables of product value analysed separately and technique used mean, standard deviation and factor analysis was applied on them to extract independent factors, in overall area, rural area and urban area respectively. How importantly each of these treated by the customer is presented Table 1.2, 1.3 and 1.4, in total sample.

This complete statement for product value and their key-words have been shown in Appendix-I. In the subsequent analysis, only the key-words have been shown Tables generates while analysis various dimensions of the product value.

Consolidated Data

Literature suggested that product value constituted of ten variables, of which product features further consisted of dimensions. Various dimensions constituting

product features were analysed separately and the remaining nine variables of product value analysed separately.

Determinants of Product value of total sample

Table 1.2

Mean and Sd. dev. of VPV_{total}

S. No.	Variables	Mean Importance	Standard Deviation
1	Performance of product	4.684	0.636
2	Quality	4.565	0.644
3	ISI/ISO standard	4.262	0.923
4	Durable	4.075	0.943
5	Technology	3.993	1.077
6	Innovative feature	3.940	1.032
7	Elegant look	3.921	1.037
8	Model Available	3.775	0.848
9	Radiation	3.621	1.107

Table 1.2 shows that out of nine variables, *performance of product* ($\bar{X} = 4.684$) is the most important component of product value, as desired by the customers. The customers understand that product must do the best on its functional aspect and there can be no compromise on that. *Quality* is the next important component of product value and consumers do take into account the quality accreditation of the manufactures as the scores to *ISI/ISO standards* comes next in the order. The next set of determinants are the product durability, its technology, innovativeness and elegant looks of the product. The product assortment, in terms of model availability, and the safety features came as the last preferences of product value. Probably, in the competitive times of today, every company is providing a large product length and is adopting stringent safety norms.

Hence, these features are taken for granted and their presence does not make much difference, although their absence is likely to be a dissatisfier.

Factor Analysis on Constituents of Product Value

The results of factor analysis show emergence of four factors, accounting for 56.91% of the cumulative variance, as shown in Table 1.3. The rotated component matrix for product value are shown in Table 1.4. The communalities of the variables range from 0.392 to 0.738 and the factor loadings from -0.502 to 0.843. The variables constituting a factor have been segregated on the basis of thumb rule i.e. allocating them to the factor where they have highest factor loadings. In case a variable came under more than one variable, the same was allocated to the factor where it could have fitted on the basis of logic and reasoning. The factors and the loading of the constituting variables are shown in Table 1.5. After segregating the factors, their nomenclative and explanation is in the following discussing.

Table 1.3

Eigen value with cumulative percentage of variance of DPV_{total}

Components	Elgen Value	% of variance	Cumulative % of variance
1	1.1412	15.688	15.688
2	1.260	14.001	29.689
3	1.241	13.792	43.481
4	1.209	13.436	56.917

Table 1.4

Rotated Component Matrix for DPV Total

Variables	Factor 1	Factor 2	Factor 3	Factor 4	h ²
Performance of Product	0.646	0.101	0.050	0.253	0.494
ISI/ISO	0.235	0.161	0.712	0.157	0.612

Standard					
Quality	-0.082	0.843	-0.134	-0.056	0.738
Durable	0.380	0.116	0.297	-0.502	0.498
Elegant Look	0.133	0.631	0.160	0.053	0.444
Technology	0.118	-0.085	-0.052	0.060	0.392
Radiation	0.161	0.272	0.249	0.680	0.625
Innovative feature	0.794	-0.037	-0.059	-0.031	0.636
Model Available	0.317	0.142	-0.729	0.178	0.684

Table 1.5**Factor loadings of DPV sample**

S. No.	Constituent Variables	Factor Loading	Factor Name
Factor – 1	Innovative feature	0.794	Latest features
	Performance of product	0.646	
Factor – 2	Quality	0.843	Elegance and quality
	Elegant look	0.631	
Factor – 3	Model Available	-0.729	Reliability
	ISO/ISI standard	0.712	
Factor – 4	Technology	0.606	Technological performance
	Radiation	0.680	
	Durable	-0.502	

Factor - I

The first factor comprises of two variables namely *innovative features* and *performance the product*, each of which shows high positive loadings. This factor, represents a high degree of customer want for more innovative feature and good performance from a product. It is likely that failure of a product on this aspect, will lead to a short fall on the front of product value and the customer may not purchase the product at all. By the stress on innovation, the customers have shown their propensity to acquire the products with the latest features. Hence, this factor is names as *latest feature*.

Factor – II

The second factor comprises of two variables '*Quality*' and '*Elegant look*' each loaded positively. This factor clearly shows that the customer do not desire only for the elegance of looks the product quality is its inseparable and essential feature. Hence, this factor is named as '*Elegance and Quality*'.

Factor – III

The third factor comprises of two variables namely *model available* and *IST/ISO standard*. As shown in the Table one is loaded positively, while second is loaded negatively. A high positive loading of the variable 'ISO/ISI standards shows customers' high propensity to regard quality accreditations of the product. This infuses a sense of reliability is the minds of the consumers as international accreditation of quality norms makes the consumers are used about the quality and its consistency. However availability too many models of the product seems to confuse the consumer. They lay more emphasis or consistency and reliability. Hence, this factor is named as *reliability*.

Factor – IV

The fourth factor consists of three variables that is '*technology, radiation and durable*'. While high positive loading is observed for the variables technology and radiation, durability has a moderate negative loading. This factor shows consumers preference for safety along with the latest technology of the product. Now days, safety is emerging as an essential objective of the technology. Interestingly, durability of a product seems to have lost its significance as consumers seem to be changing their television sets after some time and do not intend to retain if for decades, as was the trend in the earlier days.

Such a shift is guided by their propensity to keep pace with the changing technology, and is supported by innovativeness of product features emerging as the most important factor. Since this factor stresses as the technical dimensions of the product, it is named as '*technological performance*.'

Determinants of product value for rural customers.

Since, rural and urban customers differ in terms of customer behaviour, they are likely to have different sets of determinants of product value. As earlier, nine variables, constituting PV, were analysed by computing mean and S. dev (Table 1.6) and then subjected to f. a. (Tables 1.6 to 1.9). The findings are explained as under.

Table 1.6 Mean and Std. dev. of VPV_{rural}

S.No.	Variable	Mean Importance	Standard Deviation
1	Performance of Produced	4.637	0.649
2	Quality	4.506	0.672
3	ISI/ISO Standard	4.231	0.946
4	Durable	4.012	1.015
5	Technology	3.943	1.111
6	Innovative Feature	3.943	1.029
7	Elegant look	3.931	1.093
8	Model Available	3.821	0.878
9	Radiation	3.575	1.210

The about Table shows that out of nine variables, performance of product has turned out to be the most important component of Product value, as desired by the rural customers.

The customers understand that product must do the best on its functional aspect and there can be no compromise on that.

Quality is the next important component of Product value and consumers do take into account the quality accreditation of the manufacturers. The next set of determinates one the product durability, its technology, innovative features and elegant looks of the product. The product assessment, in terms of model availability, and the radiation came as the lost preference of product value.

Factor of DPV rural

The results of factor analysis in nine variables of product value, as applied on the rural customers are shown in Table 1.7 to 1.9, as shown below.

Table 1.7

Eigen value with cumulative percentage of variance of DPV_{rural}

Components	Eigen value	% of variance	Cumulative % of variance
1	1.433	14.332	14.332
2	1.359	13.589	27.921
3	1.320	13.196	41.118
4	1.289	12.893	54.910

Table 1.8**Rotated component matrix for DPV Rural**

Variable	F₁	F₂	F₃	F₄	h₂
Performance of product	0.700	0.259	-0.176	0.171	0.656
ISI/ISO Standard	0.090	0.147	0.710	-0.079	0.607
Quality	0.096	0.812	-0.099	-0.053	0.663
Durable	-0.060	0.025	0.089	0.858	0.759
Elegant look	0.032	0.631	0.142	0.425	0.610
Technology	0.676	-0.309	0.074	0.095	0.587
Radiation	0.568	0.322	0.373	-0.300	0.714
Innovative feature	0.380	-0.014	-0.057	0.574	0.645
Model available	0.075	0.067	-0.779	-0.108	0.639

Tables 1.7 and 1.8 show, that the product value in rural area is represented by four independent factors (Eigen value ≥ 1.00) and the communalities ranges from 0.587 to 0.759 (Table 1.7). The factors, their constituent variables and the factor loading of each of the constituent variable is shown in Table 1.9. The total variance accounted for is 54.910 percent (Table 1.8).

Table 1.9**Factor Loadings of DPV_{rural}**

S. No.	Constituent Variable	Factor Loading	Factor Name
Factor – 1	Performance of product	0.700	Overall performance
	Technology	0.676	
	Radiation	0.568	
Factor – 2	Quality	0.812	Quality and Elegance
	Elegant look	0.631	
Factor – 3	Model available	-0.779	Assortment and Standardization
	ISO/ISI standard	0.710	
Factor – 4	Durable	0.858	Longevity
	Innovative feature	0.574	

Factors – I

The first factor consists of the three variable, '*performance of product, technology, and radiation*'. High position loadings are observed for each of these constituent variables, which touch various factors of product value. Performance is the essential requirement of any product offering and the same is supported by technology and safety features. This variable is named as *overall performance*.

Factors – II

The second factor consists of two variables, that is '*quality and elegant look*', each of which is positively loaded. Although rural consumers lay importance as elegant looks, still they do not ignore the quality. Elegance must be backed by quality. Hence, the factor is named as *quality and elegance*.

Factor – III

The third factor consists of two variables, that is '*model available and ISO/ISI standard*' and has been named as '*assortment and standardization*'. The factor shows one variable is highly negatively loaded and the other variable is high positively loaded. This shows that while the customers do give high value to the standardized products and prefer to buy these which have ISI or ISO certifications. This gives the assurance of quality standards. However, the existence of too many models is confusing for the rural customers. So, a negative factor loading is seen on the variable on model availability.

Factor – IV

The fourth and last factor consists of two variables, that is '*durable and innovative feature*' and has been named as '*longevity*'. The factor indicates a high degree of customer preference for the product which are more durable have more innovative features.

Determinants of Product Value of Urban consumers

In order to identify the determinants of product value for rural customers, nine original variables were taken as inputs to mean, std. dev, and factor analysis. The results of the analysis are shows is Table 1.10, 1.11, 1.12 and 1.13.

Table 1.10 shows that out of nine variables, performance of the product has turned out to be the most important component of product value, as being desired by the rural customers. The customers understand that product must do the best on its functional aspect and there can be no compromise on that.

Table 1.10
Mean and Standard Deviation of VPV_{urban}

S.No.	Variables	Mean Importance	Standard deviation
1	Performance of Product	4.731	0.621
2	Quality	4.625	0.611
3	ISI/ISO Standard	4.293	0.901
4	Durable	4.137	0.865
5	Technology	4.043	1.042
6	Innovative feature	3.937	1.038
7	Elegant look	3.912	0.980
8	Model Available	3.728	0.818
9	Radiation	3.575	1.210

Quality is the next important component of Product value and consumers do take into account the quality accreditation of the manufacturers, the next set of determinants one the product durability, its technology, innovative features and elegant looks at the product. The product assessment, in terms of model availability, and the radiation came as the last preference of product value.

Factors of DPV urban

The results of factor analysis, as applied on nine variables of product value for urban customers, are shown in Tables 1.11 to 1.13.

Table 1.11**Eigen values with cumulative variance of DPV_{urban}**

Components	Eigen value	% of variance	Cumulative % of variance
1	1.648	18.307	18.307
2	1.254	13.930	32.238
3	1.199	13.322	45.560
4	1.076	11.961	57.521

Table 1.12**Rotated components matrix for DPV_{urban}**

Variable	Factor 1	Factor 2	Factor 3	Factor 4	h ²
Performance of Product	0.681	-0.091	0.014	0.183	0.505
ISI/ISO Standard	0.606	0.221	-0.361	0.057	0.546
Quality	-0.175	0.329	0.339	0.518	0.566
Durable	0.149	-0.114	-0.201	0.835	0.772
Elegant look	0.097	0.739	-0.162	-0.110	0.594
Technology	-0.031	0.614	0.078	0.064	0.338
Radiation	0.547	0.383	0.198	0.128	0.502
Innovative feature	0.659	-0.069	0.136	-0.182	0.490
Model Available	0.143	-0.035	0.882	-0.115	0.814

Tables 1.11 and 1.12 show that the product value in urban are can be represented by four independent factors (Eigen value ≥ 1.00) and the communalities which give the proportion of variance for each the original variable (denoted by h_2) are ranging from 0.388 to 0.814 (Table 1.12). The total variable accounted for is about 57.521 percent (Table 1.11), the factors have been given appropriate name on the basis of the constituent variables. The serial number, the constituent variables, factor name and their factor loading have been summarized in Table 1.13.

Table 1.13

Factor loadings of DPV urban

S.No.	Constituent Variable	Factor Loading	Factor Name
Factor 1	Performance of product	0.681	Overall Performance
	innovative feature	0.659	
	ISI/ISO standard	0.606	
	Radiation	0.547	
Factor 2	Elegant look	0.739	Attraction
	Technology	0.614	
Factor 3	Model Available	0.882	Assortment
Factor 4	Durable	0.835	Permanency
	Quality	0.518	

Factor – I

The first important factor consists of four variable that is '*performance of product, innovative feature, isi/iso standard and radiation*'. This factor, represents a high degree of customer want for good performance and more innovative features. The factors are positively loaded on the variables related quality accreditation and safety. It is product. Since these dimensions and quite diverse in nature and indicate customers' overall evaluation of product value, this factor is named as overall features. It is likely that failure of a product on this aspect, will lead to a short fall on the front of product value and the customer may not purchase the product. This factor is named as *overall features*.

Factor-II

The second factor consists of two variable that is, '*elegant look and technology*' and has been named as '*attraction*'. This factor clearly shows the customer not only want the new technology of the product, they also want that the product should be good looking.

Factor-III

The third factor consists of only one variable that is '*model available*' has been named as '*assortment*'. The factor shows is very high positive loading, the customer want too many models available in the market so that they choose the product.

Factor-IV

The fourth factor consists of two variable –*durable and quality* and has been named as *permanancy*. This factor clearly shows the customer do not only want the good quality of the product, they want that the product is durable and lasts long.

Comparative analysis of DPV_{rural} and DPV_{urban}

The difference in the determinants of product value for rural and urban customers was studied by the comparative analysis of the determinants of PV, which emerged for each of the sample. These determinants were consolidated from the Tables 1.9 and 1.13 and are shown in Table 1.14. The following discussion compares the DPV rural and DPV urban.

As shown earlier, four factor (expressed as determinants) of product value were extracted for both rural as well as urban customer. There is a variation in the constituents of each of these determinants and is explained below.

Table 1.14**Comparative analysis of DPV Rural and DPV Urban**

Factor	RURAL		URBAN	
	Variable	Loading	Variable	Loading
I	Performance of	0.700	Performance of product	0.681

	product Technology Radiation Overall Performance	0.676 0.568	Innovative feature ISO/ISI standard Radiation Overall performance	0.659 0.606 0.547
II	Quality Elegant look Quality Elegence	0.812 0.631	Elegant look Technology Altercation	0.739 0.614
III	Model available ISO/ISI standard Assortment & STV. Standardization	-0.779 0710	Model available Assortment	0.812
IV	Durable Innovative features Longevity	0.858 0.574	Durable Quality Permanency	0.853 0.518

Factor – I

In both the segments, product performance and safety. Characteristics are common. The customers do not compromise on product performance or safety of usage. However, rural customers associate product performance with technology while the urban customers have higher propensity towards latest and innovative features. The urban customers give more weightage to the quality certifications over their rural counterparts while the factor has named as overall performance, the constituents of the factors differ for the two market segments. Urban customers seem to be more holistic in their analysis of product value.

Factor – II

The two customer segments regard elegance of looks as the next most important determinant of product value. Elegance of looks give aesthetic appeal, a sense of satisfaction and positive endorsement from the peer groups. However, rural customers

associate elegance with quality while the urban customers associate the same with technology. In case of urban customers, quality endorsement and technology seem to be the indirect and overt cues for quality, while the rural customers seem to be analyzing the quality more directly.

Factor – III

Assortment comes to be the next important factor as it enables the customers to make a choice. However, the two customer segments show diametrically opposite behaviour on their account. While urban customers view assortment favourably, the rural customers view the same negatively. Too many models seems to have a confusing effect on the rural customers, while urbans counterparts view the same as an opportunity to select the product of their personnel choice. The urban customers seem to be expressing their inclination towards product customization while the rural customers are more adaptable and accept the realities. Their preference and accept the realities. Their preference for quality endorsement is shown in this factor, indicating their emphasis on consistency and reliability.

Factor – IV

Durability is the common constituent of the last factor, indicating that probably durability has post its prime importance as a determinant of product value. The market competition, rapidly changing technologies, falling prices and innovative features are a great motivation for the customers to changes their products after some intervals of time. To tempt the customers on this account are a plethora of promotional schemes, including exchange offers etc, which have made the customers to change their products, which were regarded as 'durables' in the yester years. The rural customer relate durability with innovation, while their urban counterparts relate it with quality.

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