Choice Theory and Linear Decision Modelling in a Firm

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Abstract

The customer value in terms of satisfaction is one of the indicators for building profit oriented strategies in a firm. The customer value concepts may be applied by the firms to evaluate the product performance in the given market and determine the approach for competitive advantage. The framework for measuring the customer values discussed in this paper provides analytical dimensions for establishing the long run customer relationship by the firm and to optimize its profit levels. The model discussed in the paper analyzes how external factors like a change in consumer interests and competitiveness affect the relationship between customer satisfaction and profit in a firm. The model discussed in the paper in relation to customer choice under difference value determinants offer more general understanding of why consumers, although purchasing essentially similar products.

In recognizing the need to contribute research in the area of customer value measurement and the concept of customer satisfaction leading towards creating the customer value, the study aims at developing a methodological construct to measure the customer value for new products introduced by a firm. The key marketing variables such as price, brand name, and product attributes affect customers' judgment processes and derive inference on its quality dimensions leading to customer satisfaction. The analysis of the perceived values of customers towards new products is a complex issue. Despite considerable research in the field of measuring customer values in the recent past, it is still not clear how value interacts with marketing related constructs. However there exists the need for evolving a comprehensive application models determining the interrelationship between customer satisfaction and customer value, which may help in reducing the ambiguities surrounding both concepts.

The paper attempts to critically examine the available literature on the subject, discuss a model that provides a framework for analyzing the variables associated with customer value and to identify potential research areas. A basic premise of the paper is that the focus should be on maximizing total customer value and customer satisfaction which are inter-dependent in the decision making process towards buying new products. The framework of the construct is developed using linear computational equations which integrates all aspects so as to maximize the profit of the organization and within all its subsystems to create and sustain satisfied customers. The approach begins with a conceptualization phase in which the concept of customer choice and satisfaction are explored.

Economics of Consumer Choice

The analytical framework in the following text is discussed also in reference to the prospect theory developed by Tversky and Kahnman (1981) towards framing decisions and understanding the dynamics of choices that consumers may exercise in order to optimize their satisfaction and ultimate value. The value measurements have been used as one of the principal tools to assess the trend of consumer behavior for the non-conventional products. The value syndrome influences the individual and group decisions in retail and bulk deals, and conditionalizes the decision process of consumers. The conditional consumption behavior suggests that the consumption depends heavily on the utility function and on the source of uncertainty (Carroll and Kimball, 1996 and Deaton 1992). The dynamics of retail consumption behavior may be expressed as:

$$c_t = \alpha_0 + \alpha_1 y_t + \alpha_2 w_t + u_t \qquad (1)$$

Where c_t is a log of real per capita total consumption, y_t is the log of real per capita disposal income, w_t is the per capita expenditure on buying and u denotes the random error term. Under this assumption c_t, y_t, and w_t are co-integrated, u_t is ≤ 0. In the process of measuring the consumer behavior in reference to preference variables leading to price and non-price determinants, the dependent factor is the rate of change in the consumption (Δ_{ct}). In view of the above discussion the dynamic consumption function that reflects the retail consumer behavior for particular products may be estimated as [deriving from equation (1)]:

$$\Delta_{ct} = \beta_0 + \beta_1(L)u_{t-1} + \beta_2(L)\Delta_{yt} + \beta_3(L)\Delta_{wt} + \beta_4(L)\Delta_{rt} + \varepsilon_t \qquad (2)$$

Where Δ is the change factor, r is the concentration ratio of retail stores in a given location and ε_t is a random error term. The test of this model requires time series data to be analyzed for trend values, taking (L) as polynomial log operator. It has been observed in previous studies that value to expenditure ratios increase consumer sensitivity in volume of buying and driving repeat buying decisions for the regular and high-tech products (Carroll and Dunn 1997). Consumer decision making with respect to 'which store to buy from' and 'how much to buy from that store' is assumed to depend only on the distance between the consumer's ideal store practices and the actual practices of stores. The Euclidean distance which takes the form $\sqrt{\sum_{k=1}^{N}(z_k - w_k)^2}$ for a consumer of type $\underline{w} \equiv (w_1,...,w_N)$ and a store with practices $\underline{z} \equiv (z_1,....,z_N)$. has been used to measure the impact of retail store practices on variety seeking and repeat buying behavior of consumers (Rajagopal, 2005). A consumer ranks stores according to this metric. Furthermore, it is assumed that the number of units demanded by a consumer equals $\left[A - \sqrt{\sum_{k=1}^{N}(z_k - w_k)^2}\right]^{\sigma}$ and such decisions are largely governed by the convenience factor associated with buying the products and services; where $\sigma > 1$ and $A \geq \sqrt{N(R-1)^2} + 1$ so that $\left[A - \sqrt{\sum_{k=1}^{N}(z_k - w_k)^2}\right] > 1$ for all $(\underline{w}, \underline{z})$.

Consumer Choice for New Products

According to the customer choice model of Giannakas and Fulton (2002), individuals are assumed to consume optimum one unit of the product of their interest within a given time. The construct of the model of customer behavior, assumes that prior to choice of new product, customer *i* derives perceived use value, for *t* conventional or new products having U_{vi} willingness to pay for the conventional product on the perceived used value of customer *i* at price *p*. In order to explain the customer preference to the product and estimating the brand value in reference to this study it may be derived that customer obtains the perceived use value $\left(U_{vi} - p^t\right)$ from consuming conventional product. The customer also exercises his option of buying a high value substitute (new products) at an alternate price p^a where $\left(p^a \geq p^t\right)$. Hence without availability of new products, the customer value Cs may be derives as:

$$Cs_i^t = \lim 0 - \infty \left[\left(U_{vi} - p^t\right), \left(U_{vi} - p^a\right)\right] = \left(U_{vi} - p^t\right) \qquad (3)$$

Following the scenario when the customers get access to the new products in the market, customers enhance the perceived use value of the new product by factor E_{vi}. This parameter is subjective to the customer decision in view of their preferences towards consuming organic products. However, due to lack of awareness, advertising and sales promotions, many customers may not be able to establish their preferences explicitly towards the synthetic and conventional products. If α represents the market segment for the new products, the customers would access the products and perceive its value by $\left(\alpha E_{vi}\right)$. Accordingly, the customer value after the new products are made available in the market segment may be described as:

$$Cs_i^{AP} =_{\lim 0-\infty} \left[\left(U_{vi} - p^t\right) - \alpha E_{vi}, \left(U_{vi} - p^a\right), B_i^{vg}\right] \quad (4)$$

Wherein, the expression Cs_i^{AP} denotes the enhancement of customer value for new products in reference to the advertising and promotion strategies of the firms and B_i^{vg} represents the brand value of new products perceived by the customers. Further, Cs_i^{AP} may be understood as a function of interpersonal communication $\left(Cs_i^{IP}\right)$comprising word of mouth and referrals, commercials $\left(Cs_i^{ma}\right)$ and point of sales promotions $\left(Cs_i^{ps}\right)$. Hence, the factors influencing the enhancement of customer value may be expressed as:

$$Cs_i^{AP} = f\left(Cs_i^{IP}, Cs_i^{ma}, Cs_i^{ps}\right)^{\lim_{0-\infty}} \quad (5)$$

Motivational forces are commonly accepted to have a key influencing role in the explanation of shopping behavior. Personal shopping motives, values and perceived shopping alternatives are often considered independent inputs into a choice model. It is argued that shopping motives influence the perception of retail store attributes as well as the attitude towards retail stores (Morschett *et.al*, 2005). The liberal environment of the self-service stores for merchandise decisions, service quality and learning about competitive brands are the major attributes of retail self-service stores (Babakus *et.al*, 2004). The retail self-service stores offer an environment of three distinct dimensions of emotions *e.g.* pleasantness, arousal and dominance. The change in the customer value observed among the synthetic and new products in reference to advertising and promotional strategies used by the firms, may be described as:

$$Cs_i^{AP-t} = Cs_t^{AP} - Cs_i^t \quad (6)$$

The model assumes that if N_{rs} number of customers in a given retail store has preferred to use new products; the change in the customer value may be derived as:

$$\Delta Cs_i^{AP-t} = \sum_{i=1}^{Nrs_1 \ldots Nrs_n} \Delta Cs_i^{AP-t} \quad (7)$$

Customers choose the product which offers maximum utility in reference to the price, awareness and promotional advantage over other conventional products. Hence, the customer value for new products may be expressed as:

$$\Delta C_{Nrs=1}^{E_{vi}-t} = \alpha\left(C_i^{E_{vi}} - Cs_i^t\right) \quad (8)$$

Where, $C^{E_{vi}}$ represents the customer value in total derived by all factors. Value and pricing models have been developed for many different products, services and assets. Some of them are extensions and refinements of convention models on value driven pricing theories (Gamrowski and Rachev, 1999; Pedersen, 2000). There have also been some models that are developed and calibrated addressing specific issues such as model for household assets demand (Perraudin and Sorensen, 2000). The key marketing variables such as price, brand name, and product attributes affect customers' judgment processes and derive inference on its quality dimensions leading to customer satisfaction. The experimental study conducted indicates that customers use price and brand name differently to judge the quality dimensions and measure the degree of satisfaction

(Brucks *et.al.*, 2000). The value of corporate brand endorsement across different products and product lines, and at lower levels of the brand hierarchy also needs to be assessed as a customer value driver. Use of corporate brand endorsement either as a name identifier or logo identifies the product with the company, and provides reassurance for the customer (Rajagopal and Sanchez, 2004).

The cost of acquiring new products would be the difference in traditional good price, variation in the perceived use value and search cost as indicated by $\left(C_i^{sc}\right)$ for each customer. Hence the appreciation of customer value to obtain new products may be expressed as:

$$\Delta C_i^{Krs-t} = \alpha\left[\left(E_{vi} + p^a + C_i^{sc}\right) - Cs_i^t\right] \qquad (9)$$

Where, C_i^{Krs} represents the cost of acquiring the new products from a given retail store. The competitive advantage of a firm is also measurable from the perspective of product attractiveness to generate new customers. Given the scope of retail networks, a feasible value structure for customers may be reflected in repeat buying behavior ($\tilde{R}$) that explains the relationship of the customer value with the product and associated marketing strategies. The impact of such customer value attributes in a given situation may be described as:

$$\sum_{Nsr=1}^{n} Cs_i^{AP} = \hat{R} = C^{E_{vi}} \qquad (10)$$

The repeat buying behavior of customers is largely determined by the values acquired on the product. The attributes, awareness, trial, availability and repeat (AATAR) factors influence the customers towards making re-buying decisions in reference to the marketing strategies of the firm. The decision of customers on repeat buying is also affected by the level of satisfaction derived on the products and number of customers attracted towards buying the same product, as a behavioral determinant (Rajagopal, 2005).

The new product attractiveness may comprise the product features including improved attributes, use of advance technology, innovativeness, extended product applications, brand augmentation, perceived use value, competitive advantages, corporate image, product advertisements, sales and services policies associated therewith, which contribute in building sustainable customer values towards making buying decisions on the new products (Rajagopal, 2006[a]). The attributes of the new products lead to the satisfaction to the customers and is reflected through the product attractiveness (F_x). It has been observed that the new products have been considered as new and experimental products in Mexico by a significant number of consumers. Hence product attractiveness $\left(F_x\right)$ may be explained along the associated variables in the following equation as:

$$F_x = \prod \left[\alpha E_{vi}\left(Cs_t^{AP}, q, Z_{xi}, p^a\right)\right]^t \qquad (11)$$

Wherein, q denotes quality of the product and Z_{xi} represents the services offered by the retailers towards prospecting and retaining customers who intend to buy the new products. The customer value may also be negative or low if the attributes are not built into the new product to maximize the customer value as per the estimation of the firm. The perceived use value of customers by

market segments αE_{vi} is a function of advertising and promotion Cs_i^{AP}, and price appreciation p^a and retailer services Z_{xi} in a given time *t*. Hence $\prod$ has been used as a multiplication operator in the above equation. The quality of the product and volume are closely associated with the customer values.

The introduction of new technological products makes it important for marketers to understand how innovators or first adopters respond to persuasion cues. It has been observed in a study that the innovativeness and perceived product newness which are one of the constituents of new product attractiveness were independent constructs that had independent effects on customer's attitude toward the brand and purchase intent for the new product (Lafferty and Goldsmith, 2004).

Consumer Choice and Leisure Buying

Ofek Elie (2002) discussed that the values of product and service are not always the same and are subject to value life cycle that governs the customer preferences in the long-run. If customers prefer the product and service for N periods with Q as value perceived by the customer, the value may be determined as Q>N, where Q and N both are exogenous variables. If every customer receives higher perceived values for each of his buying, the value added product $q \geq Q$, where 'q' refers to the change in the quality brought by innovation or up-graded technology. The customer may refrain from buying the products if $q \leq Q$, that does not influence his buying decisions. However, a strong referral 'R' may lead to influence the customer values, with an advantage factor β that may be explained by price or quality factor. In view of the above discussion it may

be assumed that customer preferences have high variability which inflences the behavioral factors in retail buyers' decisions (Rajagopal, 2006[a]) may be expressed as:

$$D_{bn} = \sum_{t=1}^{N} \beta^t \mu\left(C_t, \hat{Z}\right) + \beta^{N+1} Q_t \qquad (12)$$

Where, D_{bn} is expressed as initial buying decision of the customers, C_t represents consumption, $\hat{Z}$ is a vector of customer attributes (*viz.* preferential variables) and Q_t is the value perceived by the customer.

A customer behavior is largely derived from the customer value and it has a dynamic attribute that plays a key role in buying and is an intangible factor to be considered in all marketing and selling functions. The value equation for customer satisfaction may be expressed as a function of all value drivers wherein each driver contains the parameters that directly or indirectly offer competitive advantages to the customers and enhance the customer value.

$$V' = K_s, K_m, K_d, K_c \left[\prod \{V(x,t,q,p)\}\right] \qquad (13)$$

In the above equation V' is a specific customer value driver, K are constants for supplies(K_s), margins (K_m), distribution (K_d), and cost to customers (K_c); x is volume, t is time, q is quality and p denotes price. The perceived customer value (V) is a function of price (p) and non-price factors including quality (q) and volume (x) in a given time t. Hence $\prod$ has been used as a multiplication operator in the above equation. The quality of the product and volume are closely

associated with the customer values. The total utility for the conventional products goes up due to economy of scale as the quality is also increased simultaneously ($\partial_v/\partial_x>0$). The ∂_v customer value is enhanced by offering larger volume of product at a competitive price in a given time ($\partial_v/\partial_p>0$) and ($\partial_v/\partial_t>0$). The conventional products create lower values to the customers ($\partial_v/\partial_x<0$) while the innovative products irrespective of price advantages, enhance the customer value ($\partial_v/\partial_x>0$). The value addition in the conventional products provides lesser enhancement in customer satisfaction as compared to the innovative products. Such transition in the customer value, due to shift in the technology may be expressed as:

$$V'_{hj} = a\left[\sum \frac{T_p}{\left(1+V_p+R_{ex}\right)^{(1+j'+i)}}\right] + b\left(X_j\right) \qquad (14)$$

In this equation V'_{hj} represents enhancements in customer value over the transition from conventional to innovative products, a and b are constants, T_p denotes high-tech and high-value products, V_p represents value of product performance that leads to enhance the customer value, the volume is denoted by X and (j') is the period during which customer value is measured (Rajagopal, 2006[b]). The recreational expenditure of retailers (R_{ex}) adds to the customer value. The recreational expenditure of retailers largely includes the children's corner, music and television, beauty consultation, family events etc.

In reference to the optimization theory it may be stated that maximizing a valid or direct utility function subject to a budget constraint or alternatively, appealing to duality theory and commencing from a cost or indirect utility function, influences the consumer behavior (Shida,

2000). In the latter case, let U (p, y) be the indirect utility function, where p is a vector of prices and y is income. For validity, U (p, y) should be homogeneous of degree zero in income and prices (p), non-decreasing in y, non-increasing in p, and convex or quasi-convex in p. The demand equations can be obtained through:

$$q_i = \frac{\partial U}{\partial p} / \frac{\partial U}{\partial y} \qquad (15)$$

In the above equation (q_i) is denoted as demand for the product. The simple utility function derived by generic consumer behavior may be understood as $\left[U = \frac{y}{P}\right]$ wherein P may be expressed as geometric mean of prices which derives dynamic consumer behavior with the variability factor of competitive advantage (α_j) over the products in a given retail environment and $(\vec{v})$ is the vector adding to unity over the n commodities. Such condition of consumer behavior may be explained as:

$$\log P = \sum \left(\alpha_j \log p_{\vec{v}}\right) \qquad (16)$$

The above equation helps in deriving the demand equation as below:

$$w_i = \left(\frac{p_i q_i}{y}\right) = \alpha_{\vec{v}} \qquad (17)$$

Wherein, (w_i) represents the individual expenditure limits or disposable income for buying products. However, these equations limit consumer responses to changes in prices, competitive advantages or disposable income to maintaining consistency in buying behavior due to change in the elasticity of aforesaid variables. While such a consumption pattern might sometimes be plausible, it adds to the asymmetric behavior of consumers in retail buying.

The propensity of consumption during the leisure season may be largely determined as a driver of retail attractions in terms of appealing sales promotions and availability of innovative products. The choice of the consumers thus is established by the propensity of consumption in the array of innovative products in the retail stores. The propensity of consumption of buyers may be denoted by $\theta = \left[\theta_{jt\ldots n}^{\lim 0-\infty}\right]$, which is measured in reference to frequency of buying $\left(\theta^{\lim 0-\infty}\right)$ from a j^{th} store in a given time *t*. The choice pattern of buyers in shopping during holiday season may be derived as:

$$x_i(t) = \frac{\exp\{\beta\theta_i(t)\}}{\sum_{j=1}^{n}\exp\{\beta\theta_j(t)\}} \qquad (18)$$

In the above equation $\{x_i(t)\}$ is the probability of buying strategy *i* at time *t*. In the exponential expression β represents the degree of value optimization on buying. At higher levels of β consumer will have higher probabilities of buying with increased propensity. In view of the above attributes of the customers towards making decision on buying during leisure, additional sales during the leisure season over other months has been derived as:

$$LSe_{zt} = vs(m_1 + m_2 + m_3 + m_4)_{zt}^{n} - nvs(m_1 + ...m_n) \qquad (19)$$

Wherein, *LSe* represents leisure sales excess, *vs* and *nvs* denote leisure sales and non-leisure sales respectively. The period in months are indicated by *m* while product categories frequently bought by the customers is denoted by *z* in the above equation in reference to the time *t*. The sales volume is considered as real per-capita retail sales. The purpose of non-leisure sales *(nvs)* for the lean months other than September-December in a year to deflate leisure sales is to control for the overall size of the market potential in the study region. Hence, the leisure sales effect has been derived using the equation as expressed below:

$$vs_{zt} = vs_{zt} - \left(\frac{nvs}{m_n}\right)_{zt} \qquad (20)$$

Further, to measure the effect of the length of the shopping season on holiday sales, substituting with equation (19), the following equation has been derived.

$$LSe_{zt} = \alpha_z + y_z \left\{vs(m_1 + m_2 + m_3 + m_4)_{zt}^{n}\right\} + \beta_z X_t + \varepsilon_{zt} \qquad (21)$$

Customer Value Enhancement

A firm may introduce the new product with the high investment $M_t^{(i_1+i_2+i_3+...i_n)j}$ in terms of product attributes (i_1), distribution (i_2), promotion (i_3) and other related factors (…i_n) related with gaining

competitive advantage in a given time (t) in the j[th] market. Let us assume that *s* is the estimated market coverage for the new product, the customer value (V_{np}) may be initially positive and high, resulting into deeper market penetration (with *s* increasing). This may be described as:

$$M_t^{(i_1+i_2+i_3+\ldots)j} = \frac{\partial s}{\partial t} = k \qquad (22)$$

However, $V_{np} \leq \frac{\partial v}{\partial t}$ may become negative following product competition within the product line due to the product overlap strategy of the firm. In the above equation, volume of buying is represented by ∂v in a given time *t*. To augment the customer value and enhance market coverage for the new products in the potential markets the firm may optimize the product line $[s]_{pt}^{j,h}$ by pruning the slow moving products in the j[th] chain in h market in order to reposition them in new market. The opportunity cost in moving the slow performance products may be derived by inputting the values of V′ from equation (ii) as:

$$[s]_{Pt}^{j,h} = \left[\frac{\partial v}{\partial t}\right]^{j,h} + \prod\{V(x,t,q,p)\} \qquad (23)$$

Hence to enhance the market coverage for the new product with enhancing the customer value for the new product of the firm, the strategy may be described as:

$$s = \int \left[k + \{s\}_{Pt}^{j,h}\right] \partial t + \beta^t R \qquad (24)$$

Where in *s* is the market coverage of the new product, *k* is the investment on market functions derived in a given time [equation (vi)] and R is the referral factor influencing the customer values with an advantage factor coefficient β in time *t*. The products constituting the optimal product line of the firm in a given time is represented by P_t in the above equation. The firm may measure the customer value shocks accordingly and shield the uncertainties occurring to the estimated market coverage due to declining customer values for the new products. As is common the new products are susceptible to such value shocks in view of the companies' own product line strategy.

Let us assume that the new product attractiveness is F_x and initial product market investment is $M_t^{(i_1+i_2+i_3+\ldots i_n)j}$, perceived customer value of the new product is V_{np} and competitive advantage driver for the customer is C_{at} at a given time.

$$F_x = \sum_t^{jh} \left[M_t^{(i_1+i_2+\ldots i_n)j} \right] (V_{np})(C_{at}) \qquad (25)$$

Hence,

$$F_x = M_t^{i_n,j} \frac{\partial v'}{\partial t} = M_t^{in,j} \frac{\partial b'}{\partial s} \frac{\partial s}{\partial t} = M_t^{in,j} \frac{\partial v}{\partial s} (V_{np})(C_{at}) \qquad (26)$$

Where in $M_t^{i_n,j}$ denotes the initial investment made by the firm for introducing *t* the new products, V' represents the volume of penetration of new product in a given market in time *t* with estimated market coverage *s*. In the equation b' expresses the volume of repeat buying

during the period, the new product has been penetrated in the market by the firm. The total quality for new products goes up due to economy of scale as the quality is also increased simultaneously $(\partial_v / \partial_s > 0)$ and $(\partial_{b'} / \partial_s > 0)$. In reference to the new products *x*, the competitive products create lower values to the customers $(\partial_v / \partial_x < 0)$ while the innovative products irrespective of price advantages, enhance the customer value $(\partial_v / \partial_x > 0)$. The value addition in the competitive products provides lesser enhancement in customer satisfaction as compared to the innovative products if the new products have faster penetration, re-buying attributes and market coverage.

Therefore $\int s \partial s = \int V_{np} + C_{at}$ (27)

In the above equation V_{np} denotes the customer value for the new product and C_{at} represents for the competitive advantage at a given time.

The prospect theory laid by Tversky and Khanman (1981) proposes that the intensity of gains plays strategic role in value enhancement as $G_{xt} = g_{pt}(\partial_x / \partial_p)$. In this situation *t* represents the period wherein the promotional strategies were implemented to enhance the customer values in reference to product specific gains (g_{pt}). However, in order to measure relationship/variability between the repeat buying behavior and customer value, it would be appropriate to determine the cumulative decision weights (w) and substituting it in the equation (i), (iv) and (v), that may reveal as:

$$G_{xt} = w\sum_{k=1}^{jh}\left[g_{pt}\left(r_j m_j\right) + \beta^{n+1} Q_t\right] \qquad (28)$$

The customer value however may be the driver function of gains on buying decision on new products and the influencing variables such as perceived use value and referrals.

Managerial Implications

One of the challenges for the marketing manager of a firm is to incorporate the preferences of the customer into the design of new products and services in order to maximize the customer value. An augmented and sustainable customer value builds the loyalty towards the product and brand. Systematically explored concepts in the field of customer value and market driven approach towards new products would be beneficial for a company to derive long term profit optimization strategy over the period. Hence, a comprehensive framework for estimating both the value of a customer and profit optimization need to be developed. On a tactical level, managers need to consider as what is the optimum spread of customers on a matrix of product attractiveness and market coverage. This needs careful attention and the application of managerial judgment and experience to measure the value driven performance of the product of the firm. It is necessary for the managers to understand that customer value is context dependent and there exists a whole value network to measure, not just a value chain. This value network will contain important entities far beyond the ones commonly taken into consideration in financial projections and business analyses.

The model discussed in this paper provides a holistic view of the customer value by proposing ways to measure the different variable associated with it *viz.* product attractiveness, market coverage, communication and point-of-purchase services offered to the customers. The analysis of these variables would help the managers develop appropriate strategies to enhance the customer value for the new products and optimize the profit of the firm. The model discussed in the paper analyzes how external factors like a change in consumer interests and competitiveness affect the relationship between customer satisfaction and profit in a firm. The construct argues over deriving estimations on customer choice, values and profit of firm at the segment level, which indicates that the preference structures and the sensitivity to the choice affect the overall growth in business leading to the change in profit levels of the firm. The choice of replacement behavior among the customers has a major effect on forecasting performance of various market orient parameters in a firm.

Managers of a firm may consider the measurement of customer value with the advent of one-to-one marketing media, *e.g.* targeted direct mail or internet marketing; the opportunities to develop customer relationship management campaigns are enhanced in such a way that it is now both organizationally and economically feasible to profitably support a substantially larger number of marketing segments. The model discussed in the paper in relation to customer choice under difference value determinants offer more general understanding of why consumers, although purchasing essentially similar products. An analysis in to these issues would help the managers to derive quality services for enhancing the customer value on the existing choice pattern and optimize the profit of the firm accordingly. Managers of the firms may also like to clarify this trade-off on customer choice and value appropriation, by applying this model that describes the choice between consumer behavior and firm's profit. An appropriate preventive strategy may be

developed by the managers upon measuring the extent of such gaps to protect the deterioration in the customer values and optimize the profit of the firm.

Conclusion

The customer value in terms of satisfaction is one of the indicators for building profit oriented strategies in a firm. The customer value concepts may be applied by the firms to evaluate the product performance in the given market and determine the approach for competitive advantage. In order to gain the returns on the aggregate customer value, firms need to methodically estimate the profitability associated thereof in terms of product attractiveness, volume of buying and market share thereof. The ultimate goal of the firms may be to generate continual revenue streams by maintaining the customer value. There appears to be a need for exploring the gaps that may occur in the marketing process that lowers the customer satisfaction and aggregate customer value. The existing theoretical and methodological issues are reviewed in this study and a new framework has been proposed for future research in measuring the customer value in specific reference to the new products as launching innovative and high technology products is a continuous process for the firms in the present competitive markets. The framework for measuring the customer values discussed in this paper provides analytical dimensions for establishing the long run customer relationship by the firm and to optimize its profit levels.

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