

Innovation in Marketing Strategy: A Customer Lifetime Value Approach

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Abstract

Purpose - Customers are the most important asset of a firm. Therefore, estimating and understanding of the economic value of customers is one of the important issues in devising smart marketing strategies. This research attempts to estimate the lifetime economic value of customer (LEVC) for the purpose of innovation in marketing strategy to ensure sustainable competitive advantage in markets.

Method - A scientific research approach was initiated, that is, both induction and deductive research philosophies were taken into considered. Six primary and five secondary hypotheses were framed using insights from various sources like previous studies and inputs from managers. Longitudinal data on some active variables and on some attribute variables were gathered from a panel of 400 households in India. Thereafter, Multiplicative regression model (MRM) and Poisson regression model (PRM) were fitted to data to test all hypotheses.

Finding - Results support all the hypotheses such as "value proposition (VP) impact on both share-of-wallet (SOW) and frequency of buying (FOB) positively". Furthermore, LEVC varies from one group of customer to another. Moreover, the distribution of EVC is highly skewed over groups of customer. In fact, 30 percent customer generates 70 percent EVC and 70 percent customer produces 30 percent EVC.

Limitations - As far as limitations are concerned, the approach applied here is appropriate only when there is a meaningful difference exists among different groups of customer with respect to their economic value. Moreover, this work's approach is better suited to handle customer than products.

Implications - Findings should assist managers to create and manage a balance portfolio of customer to ensure short-term financial gain from and long-term stability of all customer groups. On the other hand, findings should provide guidelines to researchers to do research in the area of economic value of customer more precisely.

Originality - This research contributes to practice and research in marketing because it discloses some strategic levers of customer equity--the most important asset of a firm.

Keywords: marketing strategy, customer life time value, economic value, decomposition, portfolio.

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Introduction

In a paper, Rust *et al.* (2004) have mentioned that the conventional marketing metrics (e.g., awareness, association, market share, etc.) do not adequately account for the great diversity of customers. But, literature suggests that life time value of customer (LVC) does (Kumara & Rajan, 2009). There are two issues of LVC such as strategic and operational. Strategically, managers fight for LVC albeit a share of customers' wallet (Weinstein & Pohlman, 2015). Operationally, they need to identify profitable segments to maximize LVC (Bolton *et al.*, 2000; Kumar & Shah, 2009). However, segmenting customers and estimating LVC are not distinct issues but complement each other to bringing sophistication in marketing practices and research (Kumar *et al.*, 2008).

This work attempts to shed light on 'how' managers understand and maximize the economic value of a customer base at the operational level. In strategic sense, managers need LVC in managing their marketing efforts in long-term basis. Practically, managers have limited resources; they cannot allocate resources to each and every customer equally (Gupta & Jennifer, 2004; Woodruff, 1997). Conceptually, resource-allocation involves trade-offs among customer groups. Which is why, the economic value of a bunch of customers is a priceless piece of information in practice (Gupta *et al.*, 2006).

In marketing, LVC is being considered as an important element of firm value (Anderson & Narus, 1998). However, it is not clear of "how LVC is defined? How LVC is estimated? What are the drivers of LVC? What is the structure and components of LVC?" Please note that we define LVC here as "the amount of economic profit is realized from customer over a period of time". Empirical support for the linkage between LVC and its drivers is critical to measure, manage, and maximize marketing efforts' effectiveness (Kumar *et al.*, 2006; Rust *et al.*, 2004). Firm's profits in competitive

environment are maximized when managers devise their strategy by taking into consideration of the economic relationship with their customers (Villanueva *et al.*, 2004).

In general, key marketing variables such as price, brand name, product quality affect customer judgment process (Brucks *et al.*, 2000). Though, each variable plays a differential role in the process. Their values also differ by nature of the relationship like contractual or non-contractual between firm and its customers (Tamaddoni *et al.*, 2010). For instance, in a non-contractual setting, short-life but high revenue customers accounted for a sizeable amount of profits for firms (Reinartz & Kumar, 2000). This insight is equally applicable for other setting as well.

Value of a product and service is not remaining the same and depends on its life cycle that governs customer preferences in the long-run. Therefore, CLV might be very effective in selecting profitable customers, i.e., customer segmentation (Kim *et al.*, 2006). Segments created through traditional methods without combing cost-to-serve and expected net cash flow might be economically unviable, which leads to financial disaster in the end (Mulhern, 1999).

In FMCG sector, customers shift their spending patterns over brands rather than stop doing business in the category. How could we understand and track the dynamism in the spending pattern? In this context, literature suggests that measuring each customer's share-of-wallet (SOW) would be a great help (Du *et al.*, 2007). That is why; knowing share-of-wallet (SOW) is far more important than customer retention rates to survive in FMCG industry (Perkins-Munn *et al.*, 2005). The figure of SOW indicates the relationship between satisfactions and profits (Bowman and Das, 2004). Whereas, Reinartz *et al.* (2005) have found that the share-of-wallet affects customer tenure and profitability positively.

In a slightly different study, Keiningham *et al.* (2003) have analyzed the impact of customer satisfaction on share-of-wallet in a B2B environment. Their findings are motivating. In the same vein, Glady and Croux (2007) have investigated the differential effects of relationship perceptions and marketing instruments on customer retention and customer share. This study's observations are standing tall.

Using survey data, Baumann *et al.* (2005) have examined the relationship between customer characteristics and SOW. They found a positive relationship between these two. On the same path, Garland and Gendall (2004) used SOW as a factor in prediction consumer behavior. We define SOW here as 'customer's brand-level spending within a product category' (Baumann *et al.*, 2005; Jones & Sasser, 1995).

Share-of-wallet (SOW) can be viewed as an indicator of relationship strength, which can be used in detection of customer attrition rate since smaller SOW holders could be considered as defectors (Coil *et al.*, 2007; Magi, 2003). Furthermore, partial defection or silent attrition caused by decreasing SOW can be more serious than attrition, which is detected only when a customer has decided to no long use the brand (Leenheer *et al.*, 2007; Verhoef, 2003).

Literature reveals that CLV is also a function of frequency of buying (FOB) (Garrett & Gopalakrishna, 2010; Kumar & Shah, 2009; Reimer & Becker, 2015). In a paper, Kumar and Rajan (2009) have attempted to figure out how buying frequency influence customer profitability. They observe a significant relationship between profitability and FOB. In another research, Zhang *et al.* (2010) have found again a positive impact of FOB on CLV albeit customer loyalty. Other researchers like Ansari *et al.* (2008); Khan *et al.* (2009); Lewis (2006); and Li *et al.* (2011) have reported more or less similar findings.

Marketers need to consider SOW on an ongoing basis to understand whether a customer is active. Compared with marketing interventions aimed at preventing attrition, marketing efforts that attempt to prevent SOW losses could be more proactive and therefore, more effective. Despite numerous managerial application of SOW and its drivers to formulate strategy/tactics to general/customer-wise revenue, research on this issue is limited (please see Jing & Lewis, 2011; Tarasi *et al.*, 2013; Zhang *et al.*, 2009). What is absent from much of this literature is evidence to support link between CV and customers segmentations. More work is needed that should unifies SOW, frequency of buying, CV in a single work. The purpose of this paper is 'to estimate the lifetime economic value of customer'. There are a number of factors and issues need to be taken into consideration to fulfill this purpose. In a single study, it wouldn't be possible as well as not wise to take all of them together. We only consider a few active variables and few attribute variables in this work. That is why; only four objectives were identified. The objectives of this research are:

1. To estimate the extent of impact of value proposition and attitudinal loyalty on share-of-wallet (SOW);
2. To estimate the extent of impact of value consciousness, product availability and customer characteristics on frequency of repeat buying (FOB);
3. To estimate the lifetime economic value of customer (LEVC) by taking into consideration of share-of-wallet (SOW) and frequency-of-buying (FOB); and
4. To decompose the overall LEVC into the base part and the incremental part.

These objectives once fulfilled that should facilitate managers to extending successful growth initiatives. Furthermore, the insights into LEVC are also useful to target right segments based on sound economic arguments and to allocate scarce marketing fund to efforts more precisely. Without information regarding SOW, FOB, and CV of each customer; it may be difficult for managers to initiate customer-centric programs such as cross and up-selling efforts, targeted promotions and other marketing actions (Bonacchi & Perego, 2012).

An argument is made that duration and customer share should consider two separate dimensions of CV (Reinartz & Kumar, 2003). Point is that longer duration does not necessarily associated with larger share-of-wallet. Furthermore, SOW indicates the degree at which customer fulfills his/her needs by using a brand in a category (Kumar *et al.*, 2004). That is why; this study did not attempt to capture CV using SOW as a proxy of customer behavioral loyalty. SOW (i.e. behavioral loyalty), which is evidenced in buying more often or one brand more than competitor's can be

considered a different outcome of customer based brand equity (CBBE). Firms have to realize that customers are the most important assets, grow them, and make profits from them (Homburg *et al.*, 2008).

Our study presents a structural framework for understanding the economic viability of each customer in non-contractual setting. The explicit objective of this research is to empirically investigate the nature of the association between share-of-wallet, value proposition, frequency of buying, marketing effort (especially availability of product), and customers characteristics (Berger & Nasr, 1998; Keiningham *et al.*, 2011; Liddy, 2000; Magi, 2003). Furthermore, in the non-contractual settings, the firm needs to ensure that the relationship stays alive because the customer typically splits his/her expenses with several firms (Anderson & Simester, 2004; Perkins-Munn *et al.*, 2005).

Theoretical and Conceptual Framework

The aim of citing relevant studies is to develop theoretical and conceptual framework regarding the issue in hand. What we understand through literature view is that 'lifetime economic value of customer does have a number of components and each component has a number of drivers' (Gupta & Lehmann, 2003). Theory also suggests that the number of components and methods of measurement of the drivers of each component differ from study to study (Kumar *et al.*, 2004). On the other hand, inherently the drivers of CV have predictive ability. If theory does not able to predict the phenomenon then it is not useful to managers as well as to researchers.

In this broader context, the purpose of theory is to understand of the components of LECV and their methods of measurement need to be considered and commissioned. These sorts of theoretical understanding help us to pin-point our focus in this research. This understanding also requires identifying the real problem though abstract with CV. We remind you that we wanted to see the architecture of LEVC and the relative important of each components of this architecture to total LEVC in this work.

At the conceptual level, we try to identify indicators to represent the conceptual issue of LECV. After giving a lot of thoughts, we consider two main indicators/constructs SOW and FOB and also various sub-constructs under each main constructs. For instance, SOW does have two sub-constructs (e.g., value proposition; and attitudinal loyalty). On the other hand, for FOB we consider three sub-constructs (e.g., value consciousness; product availability; and customer characteristics). Both construct in combine make the structure of LEVC at least conceptually. We also inclined to include some socio-demographic parameters such as family size and income level for giving adjustment to LECV. Without these sorts of adjustments LECV may be over estimated or inflated. In the end, we do believe that LEVC can be decomposed into two parts, base LEVC and incremental LEVC. This understanding is required to managing by LEVC in future more precisely.

Research Hypotheses

This study follows a scientific research approach. Therefore, we need to formulate hypotheses. Various sources (e.g., research papers; experts' opinion; our own experience) were explored in formulation of quality hypotheses. Then, to formulate our hypotheses, we develop a relevant conceptualization of drivers of customer lifetime economic value. Actually, we are interested to frame explanatory type of working hypotheses in this work to follow a design approach in formulation strategy. Several studies notably Chan *et al.* (2011); Fader *et al.* (2005); Jen *et al.* (2009); Kumar *et al.* (2006); Rishika *et al.* (2013); Schmitt *et al.* (2011); and Wilson *et al.* (2001) have supported us in the formulation of hypotheses. Furthermore, our experience, insightful feedback from a few managers and opinions of a few academicians help a lot in this context.

To keep our study sophisticatedly simple and focused, we framed six primary and five secondary hypotheses in this work. Secondary hypotheses are related to the relationships between SOW and its drivers and FOB and its drivers. The stated hypotheses are shown below:

H₁: Share-of-wallet (SOW) is one of the structural components of lifetime economic value of customer (LEVC).

However, it would be wise to understand of the drivers of SOW. Our theoretical understanding suggests that customer perception toward value proposition lead them to spend more on a given brand (Du *et al.*, 2007). On the other hand, we came across some studies in which it is reported that customer are inclined to spend more on those brands to whom they are attitudinally inclined (Baumann *et al.*, 2005). Therefore, we frame two secondary hypotheses under this primary hypothesis. The hypotheses are:

H_{1.1}: Value proposition is one of the drivers of SOW and has a positive effect on SOW

H_{1.2}: Attitudinal loyalty is one of the drivers of SOW and has a positive relationship with SOW

As per RFM model, one of the three variables is frequency of buying (FOB), which influence customer lifetime value (Buckinx & den Poel, 2005). In this work, authors strongly suggest that without taking into consideration FOB, the estimated CLV might be biased. Taking a clue from this work, we proceed to frame the following hypothesis.

H₂: Frequency of repeat buying (FOB) is one of the structural components of lifetime economic value of customer (LEVC)

Again, we are interested to dig further to understand of drivers of FOB since without knowing these sorts of factors managers wouldn't be able to formulate right strategy to motivate customer of buying more frequently (Lemon *et al.*, 2002). After reviewing a few studies, we found that value proposition is again one of the tentative causes of FOB (Reinartz & Kumar, 2000). In some other studies, it is also reported that product accessibility might be one of the determinants of FOB especially in FMCG sector (Athanasopoulos, 2000). Furthermore, it was found that some characteristics of customer are also sometimes impact on FOB (Mittal & Kamakura, 2001). In sum, we identify three drivers of FOB such as value proposition; product availability; and customer characteristics. Hence, three hypotheses are framed as follows:

H^{2.1} : Value proposition is a driver of FOB and has a significant positive relationship with FOB

H^{2.2} : Product availability is a driver of FOB and has a significant positive relationship with FOB

H^{2.3} : Customer characteristics (e.g., income; family size) explain variation in FOB significantly

Behaviorally, customers do differ from one another, if not then all customers might have equal CLV that seldom happens. Here, we take into consideration two dimensions only. These are SOW and FOB. If customers differ significantly by these two dimensions, then only their contribution to CLV would differ. We get some support from existing literature on these issues (Corstjen & Lal, 2000; Lemon *et al.*, 2002; Reinartz & Kumar, 2000). Therefore, we move on to frame four descriptive hypotheses on these exploratory variables. We stated these hypotheses as:

H₃ : All customers do not have equal SOW and differ significantly from customer to customer

H₄ : All customers do not have equal FOB and differ significantly from one customer to another

H₅ : All customers do not have equal LEV and differ significantly by customer

H₆ : Contribution of base LEVC and incremental LEVC to total LEVC are not equal and differ significantly

As we know, this study probably is the first one in India use consumer panel's data on wallet size, share-of-wallet, frequency of buying, etc. to accomplish the objectives of this work as mentioned above. The firms under study suffer from undifferentiated offering and low switching costs. Findings of this work need to give adjustment with these factors (Reinartz & Kumar, 2000). At the same time, we think that forward looking customer focus might give some forecasting insights (Zeithaml *et al.*, 2006). This study does not attempt to answers the questions like why one

customer differs from another; whether the differences among customers change over time; or how managers can exploit or modify marketing mix efforts to improve brand performance. But we hope that this work provides a guideline to researchers to answers of these questions in future.

This paper is organized as follows. In developing our conceptual framework and hypotheses, we present an overview of existing literature in above. With this as a background, we then proceed to develop empirical models to test hypotheses. After describing our data, measurement and methodological approach, we conclude with findings and implications from the research.

Research Design

There are two research paradigms, inductive and deductive. Because we are dealing with a establish research area as well as some subjective inputs from experts we are interested in to follow scientific approach (i.e. a mixed approach). That is why; we framed a number of working hypotheses using both theoretical and conceptual framework and subjective inputs from managers and academicians. On the other hand, we used a nomothetic methodology to produce credible, accountable and legitimate answers of our research questions. In this section, we discuss the empirical models; types and methods of data collection and characteristics of the database.

Empirical Models

Literature suggests that there are various models and methods that we could use to capture the phenomenon under study, i.e., economic value of customer (EVC). After a careful evaluation, we pick up a multiplicative regression model (MRM) and a Poisson regression model (PRM) as suggested by Mindy and Wendy (2007). We write a few lines about both the models in the subsequent paragraphs.

MRM is required to estimate the relationship between share-of-wallet (SOW) and its drivers. Here, SOW is a function of value proposition (VP) and attitudinal loyalty (AL) (i.e. eq. 1). Note that SOW is defined as the degree in which a customer fulfills his needs using a brand in a category (Reinartz & Kumar, 2003). As per Oliver (1999) the form of the relation between SOW and its drivers is not linear. That is why; we want to use the multiplicative form of the model, therefore, log of SOW is expressed as a function of log of VP and log of AL (i.e. eq.2) (Chen & Dubinsky, 2003; Oliver, 1999). We present the simplest form of the model below:

$$SOW_i = e^{\alpha + \beta_1 \ln(VP_i) + \beta_2 \ln(AL_i) + u_i} \quad (1)$$

$$\ln(SOW_i) = \alpha + \beta_1 \ln(VP_i) + \beta_2 \ln(AL_i) + u_i, \quad (2)$$

where sow_i is the share-of-wallet of the i^{th} customer; VP_i = Value proposition = QP_i (quality perception) of customer i / PP_i (price perception) of the same customer; AL_i is the attitudinal loyalty of the i^{th} customer; and u_i is the random error term.

On the other hand, Poisson regression model (PRM) is necessary to represent a relationship between buying frequency and its predictors. This model expresses buying frequency is a function of value proposition, income level, and family size. Since the relationship between variables under investigation in question often is non-linear, we present the PRM in double-log forms (Bolton *et al.*, 2004). Specifically;

$$n_i = e^{A+\beta_1(VP_i)+\beta_2(I_i)+\beta_3(N_i)+\beta_4(PA_i)+v_i} \tag{3}$$

$$\ln(n_i) = A + \beta_1(VP_i) + \beta_2(I_i) + \beta_3(N_i) + \beta_4(PA_i) + v_i, \tag{4}$$

where n_i = No. of purchases made by customer i ; PA_i is the perception of product availability of customer i ; I_i is the total expenditures on the category of i^{th} customer; N_i is the size of the family; and v_i is a disturbance term.

In order to select and target right customers, understanding of economic value of each customer and its composition, i.e. base and incremental is very essential. As we know in calculation of LEVC, three parameters are mainly involved: frequency of buy, share-of-wallet (SOW) and contribution margin per transaction per customer (Reinartz & Kumar, 2000). Which is why; the mathematical expressions of total-LEVC, base-LEVC, and incremental-LEVC are:

$$Total : LEVC_i = m_i \times SOW_i \times n_i - Capital * (COC + OP + Inflation) \tag{5}$$

$$Total : EVC_i = m_i \times e^{\alpha+\beta_1 \ln(VP)+\beta_2 \ln(AL_i)} \times e^{A+\beta_1(VP_i)+\beta_2(I_i)+\beta_3(N_i)+\beta_4(PA_i)} - Capital * (COC + OP + Inflation) \tag{6}$$

$$Base : LEVC_i = m_i \times e^\alpha \times e^A - Capital * (COC + OP + Inflation) \tag{7}$$

$$Incremental : LEVC_i = m_i \times (e^{\alpha+\beta_1 \ln(VP)+\beta_2 \ln(AL_i)} \times e^{A+\beta_1(VP_i)+\beta_2(I_i)+\beta_3(N_i)+\beta_4(PA_i)} - e^\alpha \times e^A), \tag{8}$$

where $LEVC_i$ = Lifetime economic value of i^{th} customer; $m_i = (p_i - c_i)$ = Expected contribution margin per transaction of i^{th} customer; $SOW_i = e^{\alpha+\beta_1 \ln(VP)+\beta_2 \ln(AL_i)}$ = Predicted share-of-wallet of i^{th} customer; $n_i = e^{A+\beta_1 \ln(VP_i)+\beta_2 \ln(I_i)+\beta_3 \ln(N_i)+\beta_4 \ln(PA_i)}$ = Predicted frequency of buying i^{th} customer; COC = Cost of capital; and OP = Opportunity cost.

Research Setting and Database

A non-food category in FMCG sector was the research context of this work. The reasons are, (1) there is no switching cost incurred by customers to buy brands; and

(2) available brands are usually differentiated minimally among themselves in general and product attributes in particular. Therefore, this sector is an ideal context to apply both the models as mentioned above.

Over the study period, there were 10 major brands in the market under investigation. Out of 10 brands; seven were in economy category and three were in premium category. It is worthy to mention that the combined market share of all these brands was more than 80 percent.

Data were gathered from customers of all 10 brands in a non-food product category in FMCG sector for the empirical analysis. All brands in question covered a number of stocks keeping units (SKU) of general merchandize and they were available for buying all year around. We aggregated data over all brands. So the relevancy of brand names is evaporated. Actually, we are not empowered to disclose the names of all brands for the reason of maintaining confidentiality.

The self-recorded data covered one-year window via a longitudinal panel of 400 households. The size of sample was calculated statistically at 95 percent confidence level, the power of the test 0.80, and 5 percent permissible error. Note that the inputs of sample size calculation came from a pilot survey of 30 respondents. Variable-wise data were recorded using a questionnaire/data sheet/consumer diary. It is wise to mention that an observation is the entire purchase history of each household in combination with a set of covariates (e.g., subjective and objective) over one year.

Briefly, the number of purchases of each household varied from 1 to 6. Avg. was 3.2 with standard deviation 2.1. Likewise, avg. inter-purchase time was 90 days and standard deviation was 23 days. The avg. family size was 4, whereas, avg. family income per month was in Indian currency Rs. 27540 (with standard deviation of 2187).

Attitudinal loyalty scale was used to measure attitudinal loyalty (see. Lichtenstein *et al.*, 1991). Scores of all items were measured on a 7-point Likert-type scale (1= strongly disagree to 7=strongly agree). Additionally, ease of purchase construct consists of two items: availability and convenience. Both the items were mapped using a scale of 7-point. Price and quality perceptions were measured through one item on 7-point scale. We found that the mean value proposition was 4.12 (Std. 1.23), mean attitudinal loyalty was 4.76 (Std. 1.44), and mean of ease of purchase was 4.12 (Std. 0.75). Please note that the results of the pilot test were promising as far as variances in these active variables are concerned.

Furthermore, the mean of SOW was realized by averaging the percentages of total expenditures over all brands go to individual brands (Perkins-Munn *et al.*, 2005). SOW was then converted to a score presuming a 7-point scale (see Too *et al.*, 2001).

Average price paid by the customers was materialized from the records of the consumer dairies. Next, the direct cost to serve was calculated using commissions paid to the retailers. Subsequently, unit margin was calculated by subtracting the average cost to serve from the average actual price paid by all customers.

We created two files of 200 observations each. One is called as test sample data-file, which was used for the purpose of estimation of parameters. Another one is called hold-on sample data-file which was utilized to test models' validity and to estimate their predictive power. Note that the respondents who did not buy at least two brands over the study period were not considered. Which is why; few observations were deleted. Finally, we proceed to test our hypotheses with 360 observations. Out of these observations 200 observations were employed to estimate all models and their respective parameters and the rest were used in validation of models and to estimate their predictive power.

Data Analyses and Empirical Results

The rationale of the analysis of data is to test hypotheses and to generate useful information. In doing so, we fitted The 'Equation 2' and 'Equation 4' to data, separately. The results are posted in Table 1 and Table 2, respectively. We fitted log-log models; therefore, the estimated parameter is nothing but elasticity coefficient. Next, the specified models were exercised on hold-on-sample data. Estimation of mean absolute percentage error (MAPE) was the purpose. The results of MAPE are also reported in Table 1 and Table 2. We also reported some models' validation statistics like R2 and VIF here.

Table 1: The Responses of SOW to VP and AL

Predictor	Coefficient	<i>t</i>	<i>p</i>	VIF	<i>R</i> ²	MAPE
Constant	1.18 (0.09)	13.11*	<0.001		0.83	8.72
ln(VP)	0.65(0.07)	9.28*	<0.001	5.7		
ln(AL)	0.41(0.17)	2.41*	<0.001	5.7		

Notes: *p < .01; VIF= Variance inflation factor; SOW = Share-of-wallet; VP = Value proposition; AL = Attitudinal loyalty; MAPE = Mean absolute percentage error; Standard errors in parentheses

The coefficient-of-determinations, i.e., R2 (in Table 1) was quite high. This goodness-of-fit statistic indicates that the model in question gives a good fit to data. Both variance inflation factors (VIF) were less than 10, which mean that both the predictors, i.e. value proposition (VP) and attitudinal loyalty (AL) are not correlated or overlapped. As far as data regeneration is concerned, the model reproduces data reasonably well since the estimated mean absolute percentage error (MAPE) was less than 10 percent. Therefore, this model (Equation 2) is adequate to generate reliable and valid as well as generalizable results. Hence, this model (Equation 1) can be used to forecast SOW.

Table 2: The Responses of FB to VP, I, N, and PA

Predictor	Coefficient	<i>t</i>	<i>p</i>	VIF	R^2	MAPE
Constant	1.23(0.11)	11.18*	<0.001		0.78	9.37
ln(VP)	0.46(0.06)	7.66*	<0.001	7.2		
ln(I)	0.21(0.04)	5.25*	<0.001	2.9		
ln(N)	0.35(0.14)	2.50*	<0.001	4.7		
ln(PA)	0.72(0.21)	3.42*	<0.001	7.8		

Notes: * $p < .01$; VIF= Variance inflation factor; FB = Frequency of buying; VP = Value proposition; I = Family income, N = Family size; PA = Product availability; MAPE = Mean absolute percentage error; Standard errors in parentheses

Table 1 reveals that the coefficient of $\ln(VP)$ (Table 1) was positive and significant at $p < 0.01$ or better (one-tailed tests). This evidence confirms the hypothesis ($H_{1.1}$), that is, 'SOW and VP are related positively'. On the other hand, $H_{1.2}$ (i.e. attitudinal loyalty impact SOW positively) is supported since the coefficient of $\ln(AL)$ was positive and significant again at $p < 0.01$ (one-tailed tests) or better.

Validation statistics of the Poisson regression model (PRM) were reported in Table 2. We found that R^2 was moderately high, i.e., the eq. (4) does have significant variance explanatory power. On a different note; variance inflation factors (VIF) of all independent variables were less than 10 or better. This means that, in combine the explanatory power of all predictors of variance of the predictor is concerned is less than 10 percent. Thus, each predictor is more or less unique in nature. As far predictor error is concerned, we found that MAPE was again less than 10 percent. So, this model (i.e. eq. 4) produces valid, reliable and generalizable outputs as well as predicts FOB indeed reasonably well.

The coefficient of $\ln(VP)$ was found to be significant at $p < 0.01$ or better (one-tailed tests), so $H_{2.1}$ (i.e. frequency of buying and behavioral loyalty are related) is sustained. $H_{2.2}$, that is, 'buying frequency and product availability are associated positively' is proved. We conclude this on the basis of facts that the coefficient of $\ln(PA)$ was positive and significant at $p < 0.01$ or better (one-tailed tests).

We found that the coefficients of family income ($\ln(I)$) and family size ($\ln(N)$) were statistically significant (at $p < 0.01$ or better). These evidences validate the hypothesis, $H_{2.3}$ (i.e. frequency of buying and customer characteristics like income and family size are associated).

To test rest of the hypotheses on CV, SOW, and Freq. of Buying; we considered 'ANOVA' methodology. We classified customers into 10 groups of equal sizes using all three behavioral variables. There are three data files of 380 observations of each. In this context, we performed three 'ANOVA-test' on data; one for each data file. The results are shown in Table 3.

Table 3: The Results of ANOVA

Dimension	No. of Gr.	No. of Obs./Gr.	<i>F</i>	<i>p</i>
CV	10	38	97.20*	<0.001
SOW	10	38	102.33*	<0.001
FOB	10	38	67.80*	<0.001

Notes: * $p < .01$; CV= Customer value; SOW= Share-of-wallet; FOB = Frequency-of buying

We found that all three 'F-statistic' values were significant at $p < 0.01$ or better. Therefore, we conclude that $H_{3.1}$ (i.e. SOW differs from one customer to another), $H_{3.2}$ (i.e. Frequency of buying differs by customer) and $H_{3.3}$ (i.e. CV differs from customer to customer) are hold up.

At the end of analysis, we performed a 'pair t'-test on the difference between base EVC and incremental EVC of 380 respondents. Numerical value of the 't-statistic' was 3.97 and it was significant at $p < 0.01$ or better (not reported here). This evidence confirms H_4 (i.e. there is a contribution gap between base EVC and incremental EVC to total EVC).

Discussion

We commission this research to understand the value of customer in economic sense, its components and their relative contributions. To do so; we used data on revealed and stated preferences of all brands in a non-food sector of FMCG in India. In this context, the impact of VP and AL on SOW were estimated and the aggregated results were promising. This work also measured the effects of VP, income, family size and PA on FOB. The overall results were significant too. We covered 10 major brands in a product category, which is quite extensive. In addition, data were collected from a sample of 380 households, which is indeed large. Therefore, the insights of this study maybe generalizable across sector with minor adjustments, if required. Here, we use deductive approach to draw inferences from the findings of this work.

The statistical evidences suggest that the impact of VP on SOW is substantial, indeed, moderately big. Furthermore, nature of the impact is positive, which means that both variables move in the same direction. Yet, the degree of responsiveness of SOW to VP is not promising even though statistically significant. Actually, the magnitude of the elasticity coefficient is less than 1. Technically, it means that the nature of the relationship between SOW and VP is inelastic. By in-elastic we do mean that the proportional change in SOW is less than the proportional change in VP. Indeed, the positive sign gives an interesting insight; that is, at present, VP probably is operating below threshold point. Therefore, there is a scope of improvement since VP would be a promising driver of SOW as we observe. Analogous findings were reported in literature (Cooil *et al.*, 2007; Keiningham *et al.*, 2015).

Similar qualitative interpretations could be drawn about the elasticity coefficient and its sign of attitudinal loyalty (AL). It is worthy to cite that 1 percent change in the parameter of AL leads to a change in SOW by 0.46 percent. What's why; such insight into the characteristic of the parameter of AL is very important, in fact to secure stable cash inflow.

Surprisingly, we detect that VP influences SOW more than AL. In other words, SOW responds more vigorously to the manipulation of VP than AL. What we understand is that VP pushes SOW higher than AL as and when equal operational changes do occur in both. This is expected because the findings were derived from a low involvement product category. This insight should of relative important make the resource allocation process between VP and AL much easier but scientifically. Furthermore, we watch that the standard error of AL was larger than that of VP. It implies that investment in AL is more risky than investment in VP. The utility of such information is tremendous for channelizing resources toward more efficient moves.

The significant constant term (α on Equation 2), means that customer exhibits a substantial degree of inertia towards the brand they bought recently. In other words, current SOW does have two components: base level and incremental level. This is an interesting observation. Incremental portion is sensitive to VP and AL whereas, base part would be the outcomes of past marketing actions. Note that by manipulation of VP and AL, managers would be able to influence the incremental portion of SOW that too, only in short-run. Such insight into SOW is indeed invaluable to balance between short-term tactics and long-term strategies regarding VP and AL. However, Keiningham *et al.* (2011) have found that customer loyalty in any form it may be attitudinal loyalty or behavioral loyalty is not enough to grow share-of-wallet.

Significant evidence regarding income and family size prove that customers buy more frequently due to their higher income or larger family size or both. These are expected since we deal with brands on a category which survival is basically depends on the level of consumption. We notice that family size does have higher impact on FOB than income in this category though both are significant. These sorts of insight into impact of these variables on FOB are indispensable in profiling customers for better targeting. Bawa and Gosh (1999) and Manchanda *et al.* (1999) have reported similar findings as we come across.

One more surprise, i.e., product availability (PA) impact Freq. of buying significantly. It indicates that PA motivates customers to buy more frequently which is shocking. What we can infer is that customer might buy other brands when the preferred brand is not accessible. It also means that customers are not loyal to a particular brand. By simply making product available, managers could acquire customers very quickly in this category. This finding advocates that why it is important to keep brand in retail outlets in acquire or retain customers. Furthermore, we infer that the penetration level is not only important issue but also its operational efficiency is needed to keep customer alive. As per our little knowledge we know that Bruno and Vilcassim (2008) and Matsa (2011) have found alike findings.

In the deciles analysis, 380 households were divided into 10 groups of equal size using average EVC. Note each group consists of 38 households. The results of the deciles analysis (in Table 4) are very interesting and intuitive. The bottom 10 percent customers contribute to total EVC by less than 5 percent. On the other side of the coin, the top 10 percent customers' contribution to total CV is around 26 percent. This information is very insightful at least in cost to serve is concerned. Guerreiro *et al.* (2008) have observed more or less similar finding in their study.

Table 4: The Results of Deciles Analysis

Deciles	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
AEVC	365	410	483	512	537	591	630	821	1221	1932
AEVC (%)	4.86	5.46	6.43	6.82	7.14	7.87	8.39	10.99	16.27	25.73

Note: AEVC= Average economic value of customer groups

Table 4 also reveals that the distribution of EVC is highly skewed. What we observe that the structure of the customer base is 70:30. It means that 30 percent customers generate 70 percent EVC and 70 percent customers produce 30 percent EVC. In fact, top 30 percent's contribution to EVC is more than 3 times than that of bottom 70 percent. This structure reveals a lot about customer's heterogeneity with respect to their contribution to EVC. In their study, on managing retailer profitability, Kumar *et al.* (2006) have found that not exactly 20 percent customers produce 80 percent profits as we observe in our research.

On the other hand, deciles analysis indicates that one customer group differs from another by contribution to total EVC. Therefore, we could conclude that all 10 groups are not either equally profitable or equally potential. It also highlights dissimilarities among customer groups; thereby, if-then logic is not applicable. That is why; all groups should not be treated equally because customers should not be considered as manipulable object. To maximize group-wise, differential services need

to be offered to serve each group since EVC differs from group to group. These types of economics insights should have significant role in investing resources in each group or in entire customer base.

The results suggest that both base LEVC and incremental LEVC are substantial. That is, total LEVC consists of two components: base and incremental, which is very fascinating to know. In particular; this decomposition of LEVC into components, visualizes the sources of change in LEVC. Since this practice hints future scenario, it is forward-looking, hence, claims a substantial management attention, indeed, promotes a balancing act between short-term revenue generation and long-term relationship building. In a work, Pfeifer *et al.* (2005) have attempted to decompose CLV for the purpose of treatment acquisition spending not for managing marketing as a whole.

Implications, limitations and Further Research

This study seeks the empirical answers of a few questions: (1) how and to what extent VP and AL shift the SOW curve?; (2) how and to what extent VP, Family size, Income and Product availability rotate the FOB curve?;(3) to what extent EVC differs from one customer-group to another?; and (4) what are the components of LEVC and their relative contributions to total LEVC? This work takes an econometric approach to answer most of the questions. Therefore, the answers of these questions should have some value in managerial practices and in research. We discuss some of them below.

Managerial Implications

Understanding LEVC is one of the prerequisites for allocating fund to each-customer or each-customer group or entire customer-base more accurately. That is why; the findings of this work should assist managers to make decision of which customer or group of customers to be rewarded most through a fixed fund. Furthermore, it would be easier for them to reallocate fund from less value-group to high-value ones to maximize overall economic value of entire customer-base.

Secondly, since EVC is a forward-looking indicator, it lends a hand to do better planning of time management. For instance, it ought to aid managers to deploy sales-force time by account-wise instead of territory-wise for better utilization of resources. In fact, this metric empowers all departments to allocate their resources to serve customer better.

Thirdly, managers usually offer more than one products to a customer at a time. Which is why; we urge managers not to think of each customer as a distinct entity but a member in the portfolio. In addition, they should maximize each customer's contribution to equity at given risks. Insights into EVC of each customer of each product should make managers more competent to device a better strategy to improve the performance of overall customer portfolio. Furthermore, EVC might back them in

identifying the right portfolio of products to be offered to each customer leads to maximize overall revenue of the customer-base.

Fourthly, naive customers do have not only limited experienced but also limited information. Usually, they buy less frequently with less amounts compare to seasoned customers. So, dividing customers into two group using FOB would a great approach to understand of the basic difference between naïve and seasoned customers. In this context, the findings of this work presume to support managers to target both the groups with differential promotion strategies.

Fifthly, to target potential customers, mapping of existing profitable customers is one of the approaches to frame tentative marketing efforts. The findings of this work might be a goldmine to do so. In this situation, the expected EVC of prospects suppose to be the yardstick. Using the findings of EVC, managers might be able to gauge the frequency of buying as well as the duration of doing business of prospects in advance. What's more, EVC might assist managers to set the upper limit of investment for acquisition of each prospect.

Sixthly, SOW varies among customers. Therefore, there might be a number of segments at different level of potentially in the customer-base. This issue becomes very important from a managerial standpoint of managing customers like aligning marketing mix in delivery value to and appropriation of value from customers. Besides, potential-of-wallet (POW) (i.e. 1-SOW) facilitates managers to mark of who are the existing customers to be targeted for additional sales.

Seventh, we wonder how managers target segments without knowing current/future profitability of individual segments. Without CLV, it is impossible to understand of profit potential of each segment as well as to compare one segment to another. Our findings deal with this issue elaborately. That is why; managers should use our findings to select right segments to be targeted with their limited resources.

Eighthly, there are two types of structure of marketing organizations, product-centric and customer-centric. The findings of this work measures each segment value in economic term. This sort of insight provides guidance to managers of how to design customer-centric marketing organization to enhance shareholder value.

Last but not least, the findings of decomposition of total EVC might provide insight into how effective was past marketing efforts in particular. Base-EVC and incremental-EVC push managers to be long-term and short-term oriented simultaneously. The relative important of base-EVC and incremental-EVC should support mangers to allocate fund between long-term strategies and short-term tactics more precisely. Moreover, these interesting findings must help them to understand of how to generate short-term profits as well as build a long-term relationship with customers.

Research Implications

Our approach, methodology and findings should have a number of implications for researchers'. Firstly, the focal point of this work is the economic issue of customer behavior. Please note that to understand of EVC holistically, behavioral characteristics of customer need to be taken in consideration. Our approach shows a path how to understand of, measure in and predict EVC of customers. Which is why; the findings of this work do have some value to the researchers in marketing.

Secondly, censoring left or right or both provide a sensible methodology to do research. Data, models and methods differ by censoring approach. In this research, we did only left censoring, however. We do believe that our left censoring approach must provide some guidelines that could be easily replicable to pursue right censoring one.

Thirdly, there is only one source of revenue that is none rather than a stable customer-base. Expected EVC of individual customers/groups attracts competition. To isolate each and every profitable customer needs better analysis with more sophisticated models. Our findings ought to provide clue to researchers how to see the extent of impact of competition on EVC.

Fourthly, literature suggests that naive managers when use EVC in decision making able to increase average customer value than seasoned managers. So, EVC could be act as substitute of experience. However, this work does not attempt to test this hypothesis but definitely the findings should motivate researchers to do so.

Fifthly, marketers need to be open to a truly equal and dyadic relationship with customers. In fact, there should be a balance between 'giving' and 'getting' in all aspects. If over-exploited, consumers might think that the marketers are greedy rather than engage in serving them authentically. Therefore, the findings of this work ought to be beneficial to researchers.

Sixthly, there is a support that customer-centric marketing organization contributes more to shareholder value than product-centric organization. Actually, we are more inclined to recommend a hybrid kind of marketing organization. Our findings should be a starting point to understand of whether hybrid kind of marketing organization is feasible or not. Furthermore, researcher should utilize our findings along with additional information (e.g., economic inefficiency, complex coordination, competitors' structure, industry profitability) to understand of if shifting to a customer-centric structure is appropriate or not.

Lastly, economic value (EV) of moderately valuable customers could be enhanced by providing better service instead making excessive price concessions or reducing ex post risks. Then, the question is how does EVC influence on service design? The findings of this research at least provide some information so that researchers might be able to proceed to solve issues of service design.

Limitations and Scope of further Research

As we know, no study is completed in all aspects. This work has some limitations too. As far as limitations are concerned, the approach we applied here is appropriate only when a meaningful difference exists between customers. Moreover, it is better suited to handle customers than products. We assume that firms' ability to dole out customers is ample. So, the findings reported here might fall short if firms do not have required resources. Therefore, whether firms do have adequate resources to round off customers optimally would be an interesting area for further research.

Secondly, Zeithaml *et al.* (1996) have advocated that customer satisfaction (CS) leads to purchase intentions. In the same line, Ittner and Larcker (1998) report a positive relationship between CS and account retention, and revenues. This study does not attempt to realize of whether CS impact on EVC significantly or not. We recommend that future researchers should see the impact of CS on EVC.

Thirdly, we do strongly believe that there might be some impact of quality of relationship between firms and customers on EV. We do not consider this issue in estimating EVC here; hence, our findings are not free from missing variables biasness. We hope that researchers should do research on this matter in future.

Fourthly, Rust *et al.* (2004) suggest that a consumer-base can be segmented using their perceptions on various factors of customer equity. Probable criteria are value equity, brand equity, and retention equity. This work does not attempt to incorporate none of these criteria in segmenting customers into groups. So, this gap opens a door for further research.

Fifthly, customer may be undervalued or overvalued since we do not take into consideration of WOM/referral/ knowledge value. The approach we take here is called transaction-oriented. It is highly recommended that researchers should pursue a relationship-oriented approach to extent this research in future.

In a competitive scenario, EVC might provoke managers to invest more in customer acquisition tactics. Thus, these tactics lead to increase in cost-to-serve of customers. Subsequently, reduce profits at least in short-run. We urge researchers to test this proposition in future.

Seventhly, in this research, we do not consider the fact of that some customers are more likely to be loyal/ do word-of-mouth (WOM)/ open to accept additional offers. Tentatively, these customers generate more EV than others. Future researchers should take into consideration these factors in estimating EVC.

Finally, we do decompose EVC into base-EVC and incremental-EVC. But, some issues like how does competition impact on both is left out. That is why; our recommendation of allocation of fund on marketing efforts is not so precise. More research is required to extend this work in this line.

Conclusion

The aim of this work was to make customer lifetime value is a highly valuable management issue and to develop a framework to measure this value across brands and across sectors. A scientific research approach was commissioned. This research produces evidence such as 'lifetime economic value (EVC) differs by group and the impact of its drivers also differ'. The most interesting finding of this research is that 'LEVC does have two elements and their contributions to total LEVC are not equal'. Furthermore, VP, AL, product availability and customer characteristics explain the variation in LEVC partially. Managerially, economic value of individual customers helps in dividing a customer base into groups; therefore, adds precision in customer segmentation. It could also be the basis of managing firms. However, we draw a conclusion that is, "no firm capable enough to capture full economic value of each customer as well as its customer base".

Furthermore, the findings confirm some strategic drivers of LEVC using strategic model of CLV in this work. It is interesting to note that most of the previous studies mainly utilize DCF model to estimate CLV. This point of differentiation creates a few more contributions of this research. Firstly, it suggests a theory that is "customer economic value does have a structure and components of this structure are numerous". Secondly, this work enhances our knowledge of how to manage the customer-financial link scientifically though partially. Thirdly, the study stimulates managers design skill to manage portfolios of customers. On the other side of the coin, this research warns managers not to set the upper limit of their marketing expenditures using LEVC as the sole criterion. It will produce sub-optimal value to shareholder in the long-run and may de-motivate employees in the implementation of managing by customer economic value policy.

As we know, most of the studies in this area mainly dealt with the methods of estimating LEVC till date. There is little research on what the composition of LEVC; how managers could use both base LEVC and incremental LEVC in marketing mix innovation; and what the strategic levers of LEVC are. To some extent, our research fills this gap, which is why; it adds value to the existing literature of customer equity. However, this work does not cover all aspects of managerial and research issues of LEVC. More research is required as we think. In the end, we recommend that researchers in this area should explore the role of economic value (EV) in the generation of profit preference function (PPF) of each customer portfolios in reference to spatial and temporal market dimensions.

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