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IMPACT OF CUSTOMER-EXPERIENCE ON CUSTOMER-BEHAVIOR FOR CELLULAR SERVICES WITH REFERENCE TO INDIAN TELECOMMUNICATION INDUSTRY

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Abstract: ***Purpose****: This research paper primar ily attempts to identify the major determinants of customer experience for cellular services, to study the impact of these determinants on customer behavioural traits like advocacy, greater spending, reduced churn and to understand whether the impact of customer experience on customer behavior is differential for different customer segments.* ***Research Methodology****: Data was collected by means of a survey using a structured questionnaire which was conducted over 36 centers across all the demographics and geographies of India for mobile subscribers. 5231 responses were recorded. Statistical techniques like factor analysis and regression were used for data analysis.* ***Findings****: There are six main determinants to Customer Experience for cellular services. There is a significant relationship between these six determinants and Customer Behavioral traits like advocacy, greater spending or reduced churn. The impact of customer experience on customer behavior is differential to different customer segments.* ***Practical implications****: This paper will be useful for the telecom providers to measure and enhance their customer-experience thereby differentiating themselves in a matured market like India. Telcos can use the insights of this study to understand customer behavioral traits thereby increasing customer retention, loyalty, spending and reduce churn.* ***Originality:*** *This paper develops a customer experience measurement yardstick called Amdocs Customer Experience Score (ACES) incorporating various determinants which define customer experience holistically for cellular services.*

Keywords*: Customer experience, Customer behaviour, ACES, Advocacy, Churn*

1. INTRODUCTION

The Indian Telecom industry has shown an enormous growth in the recent years. As per the monthly Telecom Regulatory Authority of India (TRAI) report, the subscriber base of the country has touched the 980 million mark (TRAI 2015). As a

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result of this growth and competition, telecom companies are facing major challenge in customer retention and loyalty (Md. Mahmood UL Farid 2013). Even the churning propensity ranges from 20% to 70% in the developing countries (Arthut Middleton Hughes, 2008). So all telecom players being on same stage in providing service to the customers, Customer Experience comes out to be one of the metrics which can act as a differentiator for (W. Ruce Allen, 2012). An enhanced Customer Experience provides customer advocacy, customer retention i.e. leading spend more and reducing churn (Craig Bailey Kurt Jensen-2006).

There is a rising need to have a yardstick to measure Customer Experience at all stages of Customer Life Cycle. However there exists no such benchmark currently for telecom industry. So this paper attempts to fill this void and provide a reliable industry benchmark for reference named Amdocs Customer Experience Score (ACES) as the study was done in collaboration with Amdocs. Aggregating customer experience across key touch points, both tangible and intangible, in a subscriber's lifecycle, ACES captures its relative importance and experience, as perceived by the respondents across various segments.

Customer Experience varies across the different demographic and geographic profile of customers and hence Customer Behavior is also influenced by the different set of customer profiles. Resultantly, it becomes highly important for the Telecom Service Providers to understand the requirements of specific customer segment and devise customer experience plan accordingly in order to achieve best and most favorable customer behavioral patterns.

The objective of this paper is to identify the major determinants to customer experience in telecom industry, to establish the fact that customer experience is subjective and varies across customer segments and to understand the impact of customer experience on customer behavioral intentions across various customer segments.

2. LITERATURE REVIEW

2.1 Customer Experience

Based on various studies conducted in the field of Customer experience there are different definitions of the same given by different people. According to (Pine and Gilmore 1999), customer experiences means "engage customers, connecting with them in a personal, memorable way. As per (Shaw and Ivens, 2002), "Customer experience is a combination of a company's actual physical performance and the feelings evoked, supposedly measured against customer prospection across all events of contact". As per (Meyer and Schwager 2007), "Customer Experience is the internal and subjective response customers have to any direct or indirect contact with a company." (Vijay Narsipur, 2004) has linked customer experience with the feelings

or sentiments of the customer towards a product. According to (Gentile *et al.,* 2007), "The customer experience originates from a set of interactions between a customer and a product, a company, or a part of its organization, which provoke a reaction." According to (Adam Richardson, 2010), "Customer experience is how customers engage with company and brand throughout the entire arc of being a customer. In that case, during this time frame a company can give positive customer experience towards their customers' by providing a considerable pricing, distinctive network, flexible product variation, appropriate customer service and value added service".

Customer experience is a journey and it includes many touch point and life stages which are important to both customer and company (Leonard Kile, 2013). It is not only about an interaction with service provider but also thinking and feelings towards the brand and the strength of relationship with the brand (XU and Chan, 2010; Berry and Carbne, 2007; Brakus *et al.*, 2009). Customer experience is therefore defined as the outcome of customers' interactions with the firm, including the interaction with the staff, self-service technologies, and the service environment (Juthamard Sirapracha and Gerard Tocquer, 2012). Customer Experience can be defined as sum of all experiences at touch points to a customer a customer has with the company over the duration of their relationship (Sebastian Barros Jon Beguiristain, 2012). Also to generate a large impact for company, customer experience should be for an enterprise-wide initiative which is closely inline to a service provider's business goal (Rahul Malviya Vyas Varma, 2012).

In this study we will be considering only those determinants which affect the telecom service industry. Based on literature review six determinants have been identified which affect customer experience for the telecom industry, Brand Image, Service delivery, Network, Customer Care, Billing Experience, Store/Gallery Experience.

2.1.1. Brand Image

Brand Image plays an important role in creating customer satisfaction (Foxall and Goldsmith, 1994). The perception of the customer about products and services is marked by the perception of brand and branding (Foxall and Goldsmith (1994). Building of the brand image is essentially important for the service firms as it is one of the powerful determinants. Most of the study determines brand image drives customer behavior. (Rahul Malviya, Vyas Varma, 2012) determines the significance of a brand and how it can affect the customer behavior in positive or negative way. Reduction in churn and new customer acquisition can be carved out of improved brand image.

2.1.2. Service Delivery

Service Delivery acts as one the main determinants in determining a better customer experience (Suzana Dukic and Velida Kijevcanin, 2012) Customer support and

service assurance are the pillars of telecommunication sector which resolves any technical issues (Sebastian Barros Jon Beguiristain, 2012). Service delivery mainly focuses on the quick and fast delivery of the services provided by the firm, whether the customer is clarified on various products and plans, and keeping the customer value at top priority (Michael Treacy Fred Wiersema, 1993). Service delivery is the part of post customer experience. Bridging the gap between perception and expectation in service quality leads to better management of service delivery (Siew-PhaikLoke *et al.*, 2011). A customer tends to be loyal if it gets better and quality service delivery (Balabanis *et al.*, 2006).

2.1.3. Network

Network is the core element of all the services provided to the customers. Any fault in the network provides a discontent to the user. A better call connectivity, call quality, data services usage, even the indoor and outdoor network coverage should be good to give user a better network experience. (Joshi Sujata *et al.*, 2015), Telecom companies thoroughly interact with customers through network. Mobile network is the first touch point between user and operator which drives overall customer satisfaction with telecom operator (Dejan Radosavljevik *et al.*, 2011). Faulty network is the factor of around 8% of customer churn (Booz Allen Hamilton, 2001). Lack of network coverage and poor signal quality leads to customer dissent (Satish *et al.*, 2011). Network Experience forms an essential part of the customer experience and hence continuous monitoring of network quality service should be done. Providing quality service can act as differentiator in the market (FabricoCarvalho de Gouveia and Thomas Magedanz 2002).

2.1.4. Customer Care

Post sales services are the key parameter for customer loyalty. Handling customer complaints efficiently is an important aspect of increasing customer experience. Unresponsive and unmanaged handling of the issues raised lead to customer discontent (Graeme Ross and Chris McLaren, 2013). A better customer care response leads high customer satisfaction and loyalty towards the operator (Rahul Malviya and Vyas Varma, 2012). Enhancement of Customer Experience determines that better customer care leads to customer acquisition and retention (Sebastian Barros and Jon Beguiristain, 2012).

2.1.5. Billing Experience

Billing is an integrated approach to total customer management solution. The automated billing system provides a robust framework and minimizes the flaws in the work flow and provides full view of customer's relationship with the business. Transparent and fair billing system gives a better customer experience. A study on Customer Experience for CSPs referred that an efficient and good billing experience makes a customer feel satisfied and secured leading to a higher loyalty among

customers (Rahul Malviya and Vyas Varma, 2012). Enhancing customer experience in telecommunications concluded that a better, safe and secured billing experience lead to higher retention of the customers (Sebastian Barros Jon Beguiristain, 2012).

2.1.6. Store/Gallery Experience

Retailers need to understand the consumer behavior and how it has evolved. The changes occurred has its consequences on the consumer expectations, be it inside or outside retail stores. Studies have concluded that nearly 50% of consumer experience is being driven by human emotions (Colin Shaw, 2013). Based on various studies a better store/gallery experience provides a key factor in enhancing customer experience. A more smooth and soothing retail environment is always preferred by customers which enhances customer experience (Gene Reznik, 2011). Customer experience management provides telecom operator an opportunity in terms of better store/gallery experience to have enhanced customer experience leading to customer retention and less churn (Mika Uusitalo, 2012).

2.1.7. Self Service

The demonstration of self-service driven interaction in the telecom industry is illustrated by the increased adoption of the web based services with the traditional environment system which provides an amalgam of modern and traditional ambience. The self-services provide critical information like user details, billing information etc. to the telecom operators of their customers. More stress is laid on the increase use of the self-service technology by consumers (Peter C. *et al.*, 2009). With introduction of web based self-service, it minimized the customer management cost but can be sustained only if exist with other channels too for a better customer experience (Vijay Narsipur, 2004). A better self-service platform can lead to greater customer experience.

2.2 Influence of Demographic Factors on Customer Experience

Customer Experience varies across Demographics and Geographies. Demographic factors and geographies play an important role while determining the perception towards service quality provided by a service provider. Demographical characteristics are crucial elements for building loyalty and have impact on customer satisfaction. This impact has been defined across various sectors like retail (Gagliano and Hathcoste, 1994), healthcare (Al-Khalil and Mahmoud, 2012), banking (Ramez, 2011; Gupta and Bansal, 2011), etc. However there have been studies which have proved that demographic factors are not crucial while determining the perception towards service quality. (Ramez, 2011), in his study concluded that demographic factors do not play a significant role in influencing customer experience. Parasuram, Berry and Zeithaml (1991), found out that the customers with higher age tend to experience better service quality rather than

younger customers. As Customer experience varies across the demographics and geographies of target market and Customer experience is linked with customer behavior, it can be said that demographic and geographic factors influence customer behavior. Customer behavior varies across the various demographics and geographies. Customer satisfaction, demographics and loyalty are inter-related.

2.3 Impact of Customer Experience on Customer Behavior

Customer Experience in telecom industry has a few determinants like Brand image, Service Delivery Experience, Network Experience, Customer Care experience, etc. as proven in past researches. Now it is important to understand the impact that Customer Experience has on Customer Behavior. It has been proved in past researches that satisfaction plays an influential role in determining the post-purchase behavior of the customers (Oliver, 1980; Oliver, 1993). According to Zeithaml, Berry and Parasuraman (1996), Customer Experience determines whether customers are going to behave favorably or unfavorably towards the brand. Lee, Richard and Murphy, Jamie (2005) explored determinants that cause customers transit from being loyal to switcher. According to Chen (2008), and Chen and Chen (2010), Quality, Perceived Value and satisfaction are the antecedents for customer behavioral patterns. *Zhao et al., (2012)* stated that customer experience plays a significant role in determining the continuance intention (loyalty) of the customer. According to Santouridis & Trivellas (2010), as well, Customer Experience determines the level of loyalty a customer maintains with the brand. Silva, K.A. (2009) determined that providing value to the customer by their service providers resulted in continuing the existing service providers which was followed by assurance and responsiveness. There are studies which establish a steady positive correlation between customer experience and behavioral intentions like customer loyalty, word of mouth, up-sell or cross-sell opportunities, willingness to purchase other services while on the other hand, there exists a strong negative correlation with Customer experience and number of complaints raised (Wang Y. and Hing-Po Lo. 2002). Pirc, M. (2006) stated that Telecommunication services, even providing high service quality, is characterized dynamic customer activities.

3. RESEARCH METHODOLOGY

A survey was conducted over 36 centers spreading across all the horizons of Indian subcontinent to measure customer experience at a pan-India level across all the demographics and geographies of India for mobile subscribers. Questionnaire was used as the primary research instrument along with personal interviews with the respondents to get further insights into the data collected. Primary research was conducted and 5231 responses were recorded. Market Research agency was hired to collect primary data from the 36 finalized centers. Questionnaires were developed

in various regional languages besides English and Hindi - Tamil, Kannada, Marathi, Bengali, Gujarati and Oriya.

22 parameters were chosen out of the originally extracted 110 parameters to measure customer experience at each touch point of customer interaction with their mobile operator. Importance and performance values for each parameter is measured and recorded. Responses were taken on a 7-point Likert scale for each parameter.

Pilot survey was carried on a sample size of 166 respondents to confirm the strength of the research instrument and to check the clarity of the measures used. Based on the responses given by the respondents, initial scale reliability and factor analysis tests were carried out for ensuring construct validity.

3.1 Customer Experience Score (ACES)

Amdocs Customer Experience Score (ACES) was developed to measure the overall experience customers have from their Cellular Service Providers calculated on a scale of 1 to 10. ACES is designed to be deployed across various lines of business, geographies and demographics. It is a theory developed through strong academic backing and proven by statistical rigor to introduce an industry benchmark to measure customer experience at all possible touch points of customer interaction with the operator. The primary research instrument attempts to measure the importance and performance of key determinants of customer experience at various phases of customer lifecycle. ACES takes into account the six core determinants to Customer Experience, namely, Brand Image, Service delivery experience, Network experience, Customer care experience, Billing experience and store/ online self - service experience.(the six determinants consisted of 22 sum-parameters).

Descriptive analysis was done on the 5231 samples collected through survey. Importance and Performance values were taken through this survey for these 22 parameters on an ordinary scale of 1 to 7. Mathematical calculation was used on those 22 parameters to come up with a customer experience score for different user groups. Each and every user group had different sample distribution and the customer experience score was calculated on those different samples in order to get a customer experience of these user groups.

$$CE = \frac{\Sigma_{k=1}^{n} (I_k \times P_k)}{\Sigma_{k=1}^{n} I_k}$$

The CE score achieved from above formula was extrapolated so as to be calculated out of 10.

$$CES = CE \times 1.5 - 0.5$$

Where,

CE = Customer Experience Score (calculated out of 7)

CES = Customer Experience Score (calculated out of 10)

I_k = Importance ratings expressed by the users on the k attribute

P_k = Experience ratings expressed by the users on the k attributes

4. HYPOTHESES

The following hypotheses have been proposed for this research:

- **H1**: There are six main determinants to Customer Experience in Telecom industry: Brand Image, Service Delivery Experience, Network Experience, Customer Care Experience, Billing Experience, Store/ Online Self Service Experience
- **H2**: There is a significant relationship between the six Customer Experience determinants and Customer Behavioral traits like advocacy, greater spending or reduced churn.
- **H3:** Impact of customer experience on customer behavior is differential to different customer segments

5. DATA ANALYSIS

5.1 Profile of Respondents

Table 1 represents the demographics and geographies of the survey sample for this study. It shows an even distribution of all the population segments across geographies and demographic constraints like service type, age, gender and customer spending. It can be noted that urban, prepaid and males form the majority of the sample size in terms of region, service type and gender respectively. However, on a whole there is a good distribution of sample across all the segments.

5.2 Scale Reliability

In research context, reliability defines the overall consistency of the various measures used in the research instrument. According to Gay, 1987, reliability can be defined as the degree to which a test consistently measures an attribute. Cronbach's Alpha (α) is considered as the basic and the most famous tool for measuring scale reliability of a construct. Nunnally (1978) defined that a Cronbach's Alpha of 0.7 as an acceptable reliability coefficient for undergoing scale reliability and is accepted as the cutoff or threshold value of scale reliability test henceforth.

In our case, survey questions use a 7-point rating scale. Reliability of the construct measures is checked with respect to the Cronbach's Alpha value. The overall Cronbach's Alpha of the Research Instrument is found to be as **0.901** as given in table 2.

Table 1
Profile of Respondents (sample distribution)

Variables	*Percentage*
Region	
Rural	25%
Urban	75%
Service Type	
Prepaid	77%
Postpaid	23%
Age	
15-24 years	28%
25-35 years	38%
36-50 years	27%
50+ years	7%
Gender	
Male	78%
Female	22%
Customer Spending	
Low Spend	55%
Medium Spend	32%
High Spend	13%

Thus it can be concluded that the instrument measures are having high level of reliability and internal consistency with each other and finally it reflects that the questionnaire is clear and unambiguous.

Table 2
Reliability Statistics

Cronbach's Alpha	*Cronbach's Alpha Based on Standardized Items*	*N of Items*
.901	.934	22

5.3 Hypotheses Testing

5.3.1. Exploratory Factor Analysis

H1: There are six main determinants to Customer Experience in Telecom industry: Brand Image, Service Delivery Experience, Network Experience, Customer Care Experience, Billing Experience, Store/ Online Self Service Experience.

Both Exploratory and confirmatory factor analysis has been used in this study for data analysis and hypotheses testing.

KMO measure of sampling adequacy is a statistical measure that defines the amount of variance in the data set that can be explained by the underlying factors. It basically provides a measure of the strength of the underlying factors and usefulness of the factor analysis. A high value of KMO (close to 1) reflects that factor analysis results are trustworthy and useful. A high KMO measure of **0.930** as shown in ***table 3*** reflects that the factors found out are adequate to define the research question in hand.

Table 3
KMO and Bartlett's Test Result

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.930
Bartlett's Test of Sphericity	Approx. Chi-Square	63702.040
	Df	231
	Sig.	.000

For the purpose of doing Exploratory Factor Analysis, we used Principal Component Analysis with Varimax rotation. Six factors were estimated according to the factor analysis results and around 70% of the overall variance in the variables could be explained by these 6 factors. The six factors found are Brand Image, Service Delivery Experience, Network Experience, Customer Care Experience, Billing Experience and Store/Self Service Experience. 22 Parameters appeared in the different factors to which they belonged to and showed high factor loadings with the 6 factors found. The result of Exploratory Factor Analysis is given in ***table 4***.

Factor 1 represents the Network Experience parameters; ***Factor 2*** represents Service Delivery Experience parameters; ***Factor 3*** represents Customer Care Experience parameters; ***Factor 4*** represents Brand Image parameters; ***Factor 5*** represents Billing Experience parameters***; Factor 6*** represents Store/ Online Self Service Experience parameters.

5.3.2. Confirmatory Factor Analysis

After Completion of Exploratory Factor Analysis, where we explored the underlying factors defining the research question in hand, we performed Confirmatory factor Analysis (CFA) to test and confirm the measurement model. We used Maximum Likelihood method of extraction on 22 parameters for the purpose of testing the questionnaire construct. CFA analysis was carried on six latent factors named Brand image, Service Delivery Experience, Network Experience, Customer Care Experience, Store/web portal Experience and Billing Experience with 22 observed variables as used in the questionnaire. In case of

Table 4
Exploratory Factor Analysis Result: Pattern Matrix

	Component					
	1	*2*	*3*	*4*	*5*	*6*
2.1A) Advertisements & Promotions				.764		
2.2A) variety of offers				.586		
2.3A) Valued Customer				.738		
2.4A) Operator is trustworthy				.726		
2.5A) Operator is transparent		.618				
2.6A) Operator delivers all services		.617				
2.7A) Pricing is competitive		.597				
2.8A) Tariff plan is clear		.605				
2.9A) Change in service experience		.714				
2.10A) Indoor Network Coverage	.753					
2.11A) Outdoor Network Coverage	.772					
2.12A) Call Connectivity	.759					
2.13A) Call Quality	.744					
2.14A) Data service	.756					
2.15A) Accessibility to Customer care			.756			
2.16A) Polite and courteous			.792			
2.17A) Efficiently & quickly			.806			
2.18A) Store/ Gallery easily accessible						.622
2.19A) Experience at Stores/Dealers						.819
2.20A) Bills are accurate					.882	
2.21A) Easy to recharge					.837	
2.22A) Online Self- service						.882

CFA, factor loadings do not play a significant role, however there are few model fit indices which need to be satisfied in order to successfully test or confirm the measurement model in hand. In our case, we have used model fit indices such a Normed Fit Index (NFI), Relative Fit Index (RFI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA) for assessing the Model fit.

Fig 1 shows the first order CFA model for the study to test the strength of the measurement model and the latent factors extracted according to the EFA results. ***Table 5*** shows the Model fit summary with mentioned Fit indices. All the fit indices portray excellent model fit as NFI, RFI and CFI values exceed the cutoff value of 0.90. Apart from that standardized factor loadings were highly significant ($p<0.001$) which again reflect the strength of the measurement model.

From the above discussion, Hypothesis 1 which stated that there are six main determinants to Customer Experience is thus proved correct through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) results

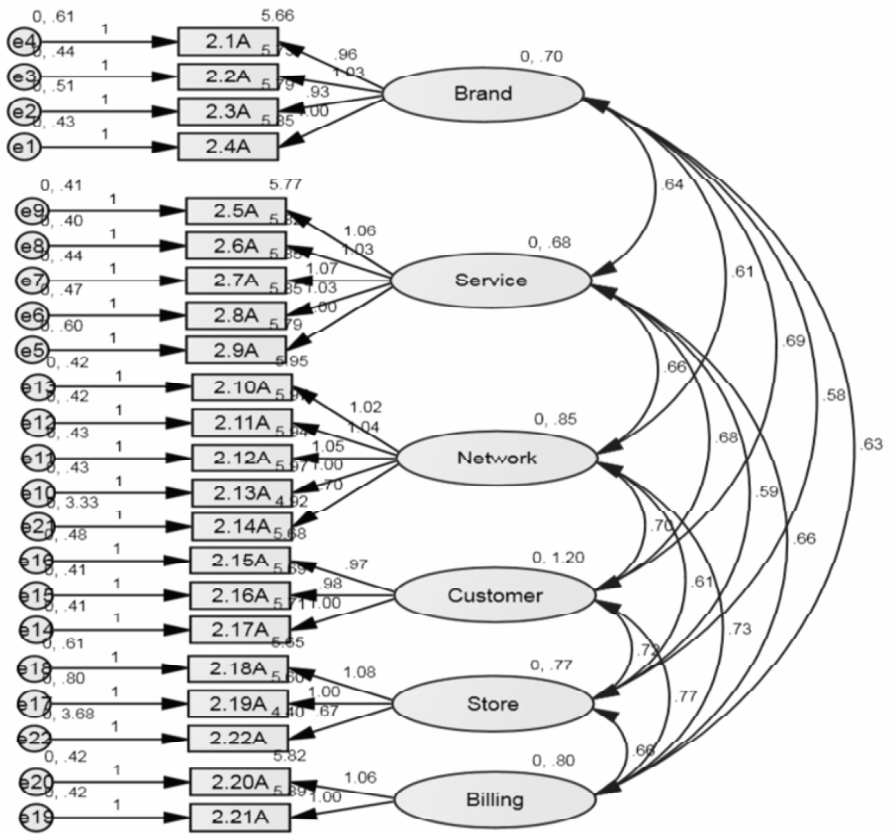

Figure 1: First Order Measurement Model for ACES Customer Experience Management study

Table 5
Model Fit results for ACES Customer Experience Management study

Model	*NFI*	*RFI*	*CFI*	*RMSEA*
Default Model	.958	.946	.961	.054
Benchmark	≥ 0.90	≥ 0.90	≥ 0.90	≥ 0.08

5.3.3. 2nd Order Confirmatory Factor Analysis for determining the Impact of Determinants of Customer Experience on Customer Behavior

H2: There is a significant relationship between the six Customer Experience determinants and Customer Behavioral traits like greater advocacy, greater spending or reduced churn.

To establish the relationship between determinants of Customer Experience on customer behavioral traits, 2nd order Confirmatory Factor Analysis test was

used. After establishing a valid measurement model with confirmed determinants to Customer Experience, next step is to establish a predictive structural model to define the relationship between constructs of the proposed framework. We used Maximum Likelihood method of extraction on 22 parameters for the purpose of testing the research construct. 2nd order CFA analysis was carried to establish relationship of six latent factors named Brand image, Service Delivery Experience, Network Experience, Customer Care Experience, Store/web portal Experience and Billing Experience with various customer behavior traits such as advocacy, greater spending or reduced churn mentioned in the questionnaire. The goodness of fit indices of the final estimated structural model shown in fig.6 gives the ratio of the chi-square value to 17.16, GFI(0.934), AGFI (0.918), CFI (0.95), NFI (.931) and RMSEA (0.056) in **Table 6**, indicating that the structural model has a reasonable explanation of the observed covariance among the constructs of interest. **Figure 2** depicts the results of the estimated structural model, while **Table 7** presents standardized path coefficients resulting from testing the proposed structural model. "***" indicates significance of less than 0.001 representing high significance in almost all the relationships presented in the measurement model. As is evident, Network Experience has the highest impact on Customer Experience and hence to customer behavioral traits.

Table 6
Structural Model Fit results for ACES Customer Experience Management study

Model	*GFI*	*AGFI*	*NFI*	*CFI*	*RMSEA*
Default Model	.934	.918	.931	.950	.056
Benchmark	≥ 0.90	≥ 0.90	≥ 0.90	≥ 0.90	≥ 0.08

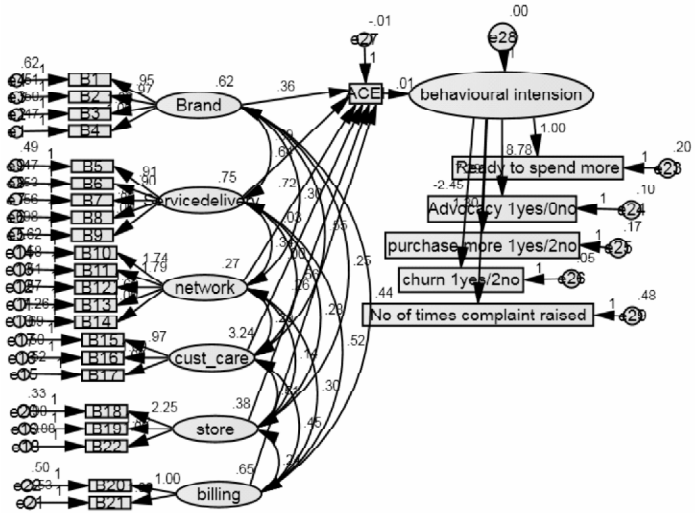

Figure 2: Second Order Measurement Model for ACES study

Table 7
Model fit results

			Estimate	*S.E.*	*C.R.*	*P*	*Label*
ACEI	<—-	Brand	.360	.028	13.012	***	par_20
ACEI	<—-	Service delivery	.391	.028	14.140	***	par_21
ACEI	<—-	Network	.724	.055	13.047	***	par_22
ACEI	<—-	cust_care	.025	.003	9.975	***	par_23
ACEI	<—-	Store	-.004	.009	-.450	.653	par_24
ACEI	<—-	Billing	.264	.013	20.674	***	par_25
behavioral intention	<—-	ACEI	.010	.002	4.628	***	par_26
B4	<—-	Brand	1.000				
B3	<—-	Brand	1.058	.018	57.238	***	par_1
B2	<—-	Brand	.971	.018	54.565	***	par_2
B1	<—-	Brand	.950	.019	51.031	***	par_3
B9	<—-	Service delivery	1.000				
B8	<—-	Service delivery	.892	.019	46.986	***	par_4
B7	<—-	Service delivery	.910	.019	47.898	***	par_5
B6	<—-	Service delivery	.903	.018	48.866	***	par_6
B5	<—-	Service delivery	.908	.019	48.595	***	par_7
B14	<—-	Network	1.000				
B13	<—-	Network	1.694	.126	13.394	***	par_8
B12	<—-	Network	1.769	.132	13.427	***	par_9
B11	<—-	Network	1.786	.133	13.410	***	par_10
B10	<—-	Network	1.744	.130	13.390	***	par_11
B17	<—-	cust_care	1.000				
B16	<—-	cust_care	1.003	.009	117.102	***	par_12
B15	<—-	cust_care	.971	.009	108.338	***	par_13
B22	<—-	Store	1.000				
B19	<—-	Store	1.952	.125	15.634	***	par_14
B18	<—-	Store	2.255	.145	15.583	***	par_15
B21	<—-	Billing	1.000				
B20	<—-	Billing	.996	.020	50.650	***	par_16
Ready to spend more	<—-	behavioral intension	1.000				
Recommendation to others	<—-	behavioral intension	8.784	1.859	4.725	***	par_17
Purchase more Service	<—-	behavioral intension	7.286	1.536	4.742	***	par_18
Ready to change operator	<—-	behavioral intension	-2.452	.522	-4.694	***	par_19
Complaint	<—-	behavioral intension	-1.296	.423	-3.066	.002	par_42

5.3.4. Binary Logistic Regression for establishing impact of Customer Experience on Customer Behavior

Past researches have shown that Customer Experience influence Customer Behavior in a significant manner. Binary Logistic regression was used to understand

the impact of customer experience on customer behavior on the ACEI survey data. ***Table 8*** shows the impact of various ACES dimensions like Brand image, Service delivery, Network, Customer Care, Store and Billing have on Behavioral intentions like Advocacy, Willingness to purchase more services and Churning tendency. From the Construct point of view, as per the Statistical test done on the surveyed data, only *Network Experience* is seen to have a significant impact on the Customer behavior aspects of advocacy, purchasing more and churn. *Service delivery* and Customer *Care Experience* have no significant impact on the Customer Behavior. *Billing* does affect the Advocacy and Churn behavior aspects of the customer. *Brand* has an impact on advocacy while *Store/Gallery experience* has a significant impact on willingness to purchasing more services and churn tendency.

Table 8
Construct Wise Customer Behavior: Impact of ACES dimensions on Customer Behavior

Construct Wise Customer Behavior			
Dimension	Customer Behavior		
	Advocacy	Purchase More	Churn
Brand	1.362	X	X
Service	X	X	X
Network	1.438	1.588	1.372
Customer Care	X	X	X
Store	X	1.208	1.307
Billing	1.353	X	1.34

Figure 3 depicts the impact that Customer Experience has on various customer behavioral intentions like Willingness to Recommend, Willingness to purchase other services offered by the operator and Propensity to Churn. The Relationship found between various levels of Customer experience Scores (X-axis) and Behavioral Intentions validate that ACES Score's competency in judging the overall customer experience and the extent to which Customer Experience correlates to Behavioral patterns. Evident from the figure is the trend reflected and thus the key take away from the Graph can be summarized as: At greater levels of Customer Experience, willingness to recommend increases, willingness to purchase other services increases significantly and finally willingness to change operator reduces considerably. Thus *higher Customer Experience* (better ACES) indicates the essence of better customer experience as a key driver to successful business.

From the above discussion we can conclude that Hypothesis 2 which stated that there is a significant relationship between the six Customer Experience

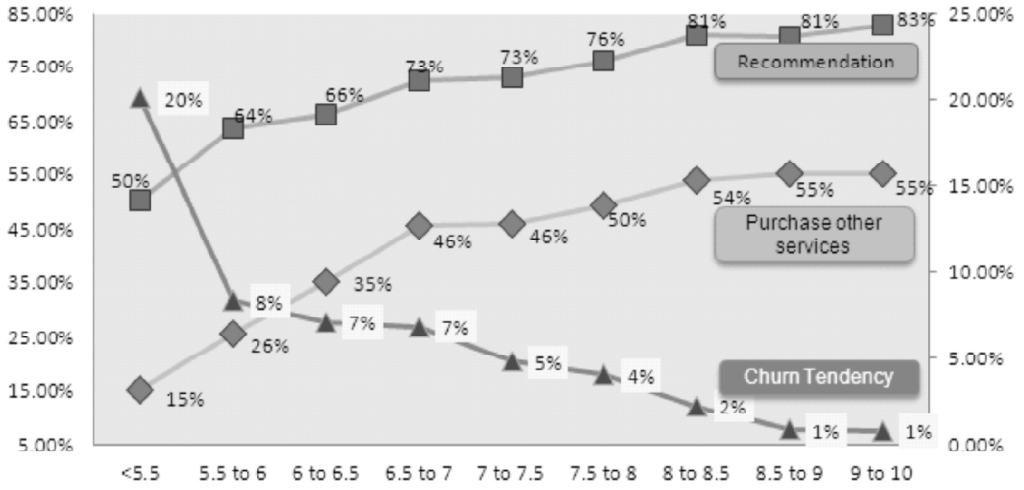

Figure 3: Descriptive Statistics: Impact of ACES on Customer Behavioral Intentions

determinants and Customer Behavioral implications like advocacy, greater spending or reduced churn is accepted.

5.3.5. Binary Logistic Regression for establishing impact of Customer behavior across different customer segments

H3: Impact of customer experience on customer behavior is differential to different customer segments

Table 9 shows a comprehensive analysis of the impact of customer experience on various behavioral traits. It projects the variation in Behavioral intentions with one unit rise in Customer Experience. It is established that with an increase of 1 unit in ACES, what will be the corresponding result on various business drivers characterized through positive tangible implications like reduced churn, greater advocacy, greater spending or reduced complaint levels.

Table 9
Impact of one unit rise in Customer Experience on Customer Behavior across demographics

Non-Smartphone users	Not Sig.	+42%	+22%	-58%	Not Sig.

Table 8 also shows the role of demographic factors while assessing the impact on customer behavior. It can be clearly concluded that the change in behavioral patterns with Experience differs across demographic segments.

From the table, it can be noted that *postpaid customers* have the highest sensitivity towards Advocacy as they are the ones whose recommendation tendency will

increase the maximum if Experience increases by one unit. Also it is noted that *for high spending customers*, willingness to purchase other services, up-sell and cross-sell opportunities as well as customer loyalty will increase the maximum if customer experience increases by one unit. It again reflects the essence of customer experience to these "profitable" customers and how Telco's can leverage on these customers to bring additional or incremental revenue with improvement in customer experience. This table portrays the fact that different segments react differently to improvement in customer experience and thus Telco's need to understand the customer segment in question in order to gauge the possible behavior with improvement in customer experience.

From the above discussion it can be concluded that the Hypothesis 3 which stated that Impact of customer experience on customer behavior is differential to different customer segments.

6. MANAGERIAL IMPLICATIONS

As said earlier, Customer Experience is very difficult to quantify; however Amdocs Customer experience score (ACES) attempts to provide a yardstick to quantify Customer Experience in Telecom Industry which can be implemented as an industry benchmark to measure Customer Experience delivered by service providers. This paper can be utilized by the telecom service providers in a matured market like India where the prime discriminator between operators can be the quality of experience delivered to end customers. It provides a holistic view of measuring customer experience across all the touch points of customer interactions narrowed down into six main dimensions. For a telecom operator to improve customer experience, these parameters need to be considered as the focus points.

Customer Experience has a direct impact on behavioral patterns. Better experience leads to favorable behavioral intentions and thus it becomes highly important for the service providers to gauge the current level of satisfaction they are providing to the customers and what will be the impact on key business drivers if they focus on improving various experience parameters.

Perception towards Customer Experience varies across demographics. As a result, customer behavior also varies across demographics. This research paper magnifies the fact that Telco's cannot use same strategies across all the customer segments. Service providers need to understand the purposes for which different segments use mobile phones and how to leverage maximum benefits out of specific clusters with customized plans suited for these segments specifically.

7. SCOPE FOR FUTURE RESEARCH

Thus far, we have identified the various determinants to customer experience. However in succeeding research papers, we can specifically drill down into each

of the major factors like Network Experience and conduct an in-depth study of the network parameters, their impact on customer behavior. We can also conduct a thorough gap analysis on the various determinants of Customer Experience to understand the difference in expectations and perceptions of service quality in telecom industry. This gap analysis will reflect the focus areas for the service providers and the main discriminator towards business success in a competitive market like India.

8. CONCLUSION

Customer Experience is something that is very difficult to quantify. However ACEI Score attempts to quantify the experience provided by telecom service providers to its subscribers across all the stages of customer lifecycle. Factor analysis results prove that the determinants chosen to define ACEI score are adequate to determine customer experience holistically and cumulatively they provide a perfect measure of customer experience in telecom industry. Binary Logistic Regression results emphasize the fact that there is a significant impact of customer experience on customer behavioral intentions. Good customer experience leads to favorable customer behavior and this is applicable to various intentions like willingness to recommend, willingness to purchase other services, customer loyalty, up-sell or cross-sell willingness, etc.

Another important conclusion that this research paper emphasized on is about the variation of customer behavior across demographics and geographies with same level of improvement in customer experience. It was seen that different customer segments behave differently and thus it becomes highly important for the telecom service providers to understand the preferences of their target market and devise the Customer Experience Engineering plan accordingly for getting best results as perception in service quality or customer experience varies across demographics and geographies.

References

Adam Richardson. "Understanding Customer Experience". 2010. Retrieved from https://hbr.org/2010/10/understanding-customer-experience.

Al-Khali, A., & Mahmoud, A. B. (2012). The Role of Demographics in Patients' Perceptions towards the Quality of Health Care Services Provided at Public Hospitals in Damascus. *European Journal of Economics*, Finance and Administrative Services, 48, 113–121.

Arthut Middleton Hughes- Churn Reduction in the telecom Industry- The Database Marketing

Institute, Ltd. http://www.dbmarketing.com/telecom/churnreduction.html

Balabanis, G., Reynolds, N., & Simintiras, A. (2006), "Bases of e-store loyalty: Perceived switching barriers and satisfaction". *Journal of Business Research*, 2006, 59(2): 214-224

Berry, L.L. and Carbone, L.P. (2007), "Build loyalty through experience management", *Quality Progress*, Vol. 40 No. 9, pp. 26-32.

Booz Allen Hamilton 2001. "Merger Integration: Delivering on the promise".Retrieved from "http://www.boozallen.com/media/file/76776.pdf".

Brakus, J. Josko, Schmitt, Bernd H., & Zarantonello, Lia (2009), "Brand Experience: What Is It? How Is It Measured? Does It Affect Loyalty?" *Journal of Marketing* Vol. 73 (May 2009), 52–68.

Chen, C.-F. (2008). "Investigating structural relationships between service quality, perceived value, satisfaction, and behavioral intentions for air passengers: Evidence from Taiwan." *Transportation Research Part A*, 42, 709–717.

Chen, C.-F., & Chen, F.-S. (2010). "Experience quality, perceived value, satisfaction and behavioral intentions for heritage tourists." *Tourism Management*, 31, 29–35

Colin Shaw, (2013) "7 Steps to Improve Your Employee Engagement" https://www.linkedin.com/pulse/20130920101651-284615-7-steps-to-improve-your-employee-engagement, article retrieved on 23rd May 2015

Craig Bailey Kurt Jensen (2006), "Customer advocacy- Customer Centricity, Inc.".

Dejan Radosavljevik, Kim Kyllesbech Larsen and Peter van der Putten (2011), "Customer Satisfaction and Network Experience in Mobile Telecommunications". Appearing in Proceedings of the 20th Machine Learning conference of Belgium and The Netherlands.

Fabrico Carvalho de Gouveia and Thomas Magedanz, (2002), "Quality of Service in telecommunication network", *Telecommunication system and technologies* – Vol II.

Foxall and Goldsmith (1994), "Consumer Psychology for marketing"- Routledge, 1994

Gagliano, K. B., & Hathcote, J. (1994). Customer Expectations and Perceptions of Service Quality in Retail Apparel Specialty Stores. *Journal of Services Marketing*, 9(1), 60–69. http://dx.doi.org/10.1108/08876049410053311

Gay, L., (1987). "Educational research: competencies for analysis and application." Merrill Pub. Co., Columbus.

Gene Reznik, (2012), Redefining the relationship with the digital Customer- copyright Accenture 2011.Retrievedfrom http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Communications-Research-Digital-Ecosystem.pdf". 2011

Gentile, Chiara, Nicola Spiller and Giulano Noci, (2007), "How to Sustain the Customer Experience: An Overview of Experience Components that Cocreate Value with the Customer," *European Management Journal*, 25 (5), 395–410

Graeme Ross & Chris McLaren, (2013), "In search of a better customer experience"- KPMG report- KPMG International Cooperative ("KPMG International").

Gupta, K. K., & Bansal, J. (2011). "Effect of Demographic Variables on Customer Perceived Internet Banking Service Quality". *Paradigm*, Vol XV (1&2), 83–92.

Joshi Sujata, Bhatia Sanjay, Raikar Kiran and Athnikar Rohan, (2015), "Towards Greater Customer experience: Role of Network Parameters on Key Business Drivers", *ARPN Journal of Engineering and Applied Sciences,* Vol 10, No. 3, March 2015, ISSN 1819-6608.

Juthamard Sirapracha and Gerard Tocquer (2012). "Branding and Customer Experience in the Wireless Telecommunication Industry" *International Journal of Trade, Economics and Finance*, Vol. 3, No. 2.

K. A. Silva (2009), "Customer Retention: With Special Reference to Telecommunication Industry in Sri Lanka", Paper presented at International Conference on Business and Information, July 2009, Kuala Lumpur, Malaysia retrieved from *http://dl.sjp.ac.lk/dspace/bitstream/123456789/1108/1/Customer%20Retention%20With%20Special%20Reference%20to%20Telecommunication.pdf on 23rd May 2015*

Lee, Richard and Murphy, Jamie (2005) "From Loyalty to Switching: Exploring Determinants in the Transition," ANZMAC 2005, Perth, Australia, December

Leonard Kile, (2013), "The Customer Experience, Defined", http://www.destinationcrm.com/Articles/CRM-News/CRM-Featured-News/The-Customer-Experience-Defined-90194.aspx posted on June 11, 2013, retrieved on 25th May 2015.

Md. Mahmood UL Farid (2013), "Customer Retention in Telecom: a Challenge", *International Journal of Entrepreneurship & Business Environment Perspectives*, Volume 2, Number 1.

Meyer C. and Schwager A. (2007), "Understanding Customer Experience". Boston, MA: *Harvard. Business,* 2007. pp. 192-208

Michael Treacy Fred Wiersema, (1993)-*Harvard Business Review* January–February 1993 issue

Mika Uusitalo, (2012), "Customer experience management in telecom operator business"-a customer service perspective. - Metropolia.

Nunnally, J.C. (1978). "Psychometric theory (1st ed.)" New York: McGraw-Hill.

Oliver, R. L. (1980). "A cognitive model of the antecedents and consequence of Customer Satisfaction." *Journal of Marketing Research*, 17, pp 460-469.

Oliver, R.L. (1993). "Cognitive, affective, and attribute bases of the satisfaction response", *Journal of Consumer Research*. 20, pp. 418-30.

Parasuraman, A., Berry, L. L., & Zeithaml, V. (1991). "Understanding of Customer Expectations of Service". *Sloan Management Review*, Spring, 39–48.

Peter C. Verhoef , Katherine N. Lemon, A. Parasuraman , Anne Roggeveen , Michael Tsiros , Leonard A. Schlesinger, (2009), "Customer Experience Creation: Determinants, Dynamics and Management Strategies" *Journal of retailing*, volume 85, issue1, 32-33.

Pirc, M. (2006). "Mobile Service and Phone as Consumption System " the Impact on Customer Switching," *Proceedings of the Helsinki Mobility Roundtable*. Sprouts: Working Papers on Information Systems, 6(33). http://sprouts.aisnet.org/6"33.

Rahul Malviya, Vyas Varma, (2012), "A value based approach to improve customer experience". – Wipro Technologies 2012.

Ramez, W. S. (2011). Customers' Socio-economic Characteristics and The Perception of Service Quality of Bahrain's Commercial Banks. *International Journal of Business and Management*, 6(8), 113–126.

Santouridis, I. & Trivellas, P. (2010). "Investigating the impact of service quality and customer satisfaction on customer loyalty in mobile telephony in Greece." *The TQM Journal*, 22 (3), 330-343.

Satish, K.Santosh Kumar, K.J.Naveen and V.Jeevanantham, (2011), "A Study on Consumer Switching Behaviour in Cellular Service Provider", *Far East Journal of Psychology and Business, Vol*. 2 No 2.

Sebastian Barros Jon Beguiristain, (2012), "Capitalizing on Customer Experience". Ericsson report 2012.

Shaw C., Ivens J. (2002), "Building a great Customer Experience". New York: Palgrave Macmillan., 2002 revised in 2005.

Siew-PhaikLoke, Ayankunle Adegbite Taiwo, Hanisah Mat Salim, and Alan G. Downe, (2011)- "Service Quality and Customer Satisfaction in a Telecommunication Service Provider"- *IPEDR (*2011) IACSIT Press, Singapore.

Suzana Đukiæ and Velida Kijevèanin, (2012), "Service Quality as Determinant of Customer satisfaction". *FACTA UNIVERSITATIS Series: Economics and Organization* Vol. 9, No 3, 2012, pp. 311 – 325.

TRAI Report (Feb 2015): https://www.trai.gov.in/WriteReadData/WhatsNew/Documents/PR-TSD-Feb-10042015.pdf.

Vijay Narsipur, (2004), "All the right moves-Part III -enhancing right customer experience with the right BPO model", www.infosysbpo.com, 3-4, 2004.

Wang Y. & Hing-Po Lo. (2002). "Service quality, customer satisfaction and behavior intentions: Evidence from China's telecom Industry". Info 4, 6 pp. 50-60.MCB UP Ltd.

W. Ruce Allen, (2012), "India's experience with mobile number Portability"- Neustar Inc. *"https://www.neustar.biz/corporate/docs/india_experience_with_mobile_number_portability.pdf.*

Xu, Jing Bill and Chan, Andrew, (2010). "A conceptual framework of hotel experience and customer-based brand equity: Some research questions and implications", *International Journal of Contemporary Hospitality Management,* Vol. 22 No. 2, 2010, pp. 174-193.

Zeithaml, V.A., Berry, L.L. & Parasuraman, A. (1996). "The behavioral consequences of service quality", *Journal of Marketing*, Vol. 60 No. 2, pp. 31-46.

Zhao, L., Lu, Y., Zhang, L., & Chau, P. Y. K. (2012)." Assessing the effects of service quality and justice on customer satisfaction and the continuance intention of mobile value-added services: An empirical test of a multidimensional model." *Decision Support Systems*, 52(3), 645-656.