

# THE EFFECT OF PERCEIVED USEFULNESS ON THE CALCULATIVE COMMITMENT AND THE COMPREHENSIVE MODEL OF LOYALTY IN INDIAN TELECOMMUNICATION INDUSTRY

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## **ABSTRACT**

Global mobile communication is one of the most dynamic and important service markets. Several researchers suggest using a theoretical approach to develop a much deeper insight into key marketing constructs such as service quality, customer perceived value, customer satisfaction, perceived switching costs, corporate image, and customer loyalty is of vital to the mobile communications market. This paper aims to investigate the effect of perceived usefulness in mobile telephone network service providers (MTNSPs). To notify the meaningful factors for the calculative commitment and loyalty intention of the users in using mobile phones, this study focuses on perceived usefulness and divides the factor into 3 sub-dimensions: mobility, critical mass and perceived ease of use (Peou). As many as 125 users of mobile phone users-students were surveyed in Coimbatore city, TamilNadu, India. The data as analyzed by path analysis. This study shows that perceived usefulness has a positive effect on calculative commitment and attitudinal loyalty, calculative commitment has a positive effect on loyalty intention. In terms of mobile telecommunication systems, it is found that the users may exhibit noticeable differences in using this service. This study provides important hints to strengthen the relationship between the network service providers and their customers.

**Key words:** Attitudinal loyalty, Behavioral loyalty, Calculative Commitment, Customer loyalty, Mobile telecommunication, Perceived Usefulness.

**INTRODUCTION:** The rapid growth and dynamic nature of the global mobile communications industry has attracted the interests of several marketing academics and practitioners. Researchers have examined the relationships between several behavioral constructs in the mobile communications markets. Given the large number of existing mobile phone users, the rapid industry growth rate, the continuing technology advances that are a feature of the industry, and the number of multi-nationals that are involved in supplying mobile communication components, telecommunication companies must understand their customers' changing perceptions in order to keep their current customers engaged and cultivate new customers. Customer loyalty is important for both the firm and the customer. As regards the firm, loyal customers are willing to make repeat purchases in the business that delivers value beyond their expectation. Loyal customers often will, over time bring substantial revenues and demand less attention from the firms they patronize. The determinants of customer loyalty such as service quality (Zeithaml et al., 1996), perceived service value (Yang and Peterson,

2004), customer satisfaction (Chandrashekar et al., 2007; Lai et al., 2009), customer trust and commitment (Garbarino and Johnson, 1999). So we have taken perceived service value for our study purpose.

## **MOBILE TELEPHONE COMMUNICATION INDUSTRY**

In Telecommunications sector the year 2015-16 has been busy and eventful year. The Telecom Sector At the end of the financial year the subscriber base was 1058.86 million out of which 1033.63 million were wireless subscribers. This is witnessed substantial growth in the number of subscribers during the year 2015-16. The urban tele-density is increased from 148.61 to 154.01. The Internet subscriber base in the country as on 31st March 2016 stood at 342.65 million as compared to 302.35 million as on 31st March 2015. The total broadband subscriber base of the country increased from 99.20 million as on 31st March 2015 to 149.75 Million as on 31st March 2016. Quality of Service is one of the most important policy and programme of Telecom Regulatory Authority of India in respect of telecom sector (TRAI 2015-16).

## **THEORITICAL BACKGROUND**

The conceptualization and operationalization of the main concepts in this study is based on relevant literature, presented below. Additionally, hypotheses regarding the relationships among the concepts are developed.

## **PERCEIVED USEFULNESS**

Perceived usefulness is the degree to which a person believes that using a particular system would enhance his or her job performance (Alafeef et al., 2011).

Individual's usage behaviour is determined by both intrinsic and extrinsic motivation (Davis et al., 1992; Lin, 2007; Teo et al., 1999). Individuals accept technology if they believe that usage would be beneficial.

Perceived ease of use has also been found to have direct effect on perceived usefulness. If the technologies are difficult to use then they are also less likely to be perceived useful (Davis, 1989; Teo et al., 1999).

The concept of mobility can be explained as moving around, either in space or in time and the benefits of mobile technologies have two dimensions "spatial and temporal" (Kleinrock, 1996). Moreover, it has been pointed out that while moving around, people are able to use mobile devices and services almost in anyplace (Järvenpää et al., 2003). The core intention to use social network services via handheld devices is highly relevant to the ability of accessing such services anywhere and anytime.

The concept of critical mass has been introduced by (Allen, 1988; Markus, 1987) and the authors argued that collective action usually depends on a critical mass that behaves differently from typical group members. The importance of perceived ease of use (PEOU) as one of the key determinant to information systems uses (López-Nicolás et al., 2008). The perceived usefulness of a mobile social network service is according to the critical mass concept determined by the number of users. The total number of user increase if mobile SNSs provide benefits to users or users perceive mobile SNS to be useful.

Based on TAM (Technology Acceptance Model), individuals accept new technology if they believe that using a particular system would be easy to use and free of effort to perform a task. In the context of current study, in line with TAM we postulate that if a mobile SNS (Social Network Service) is easy to use, then it is likely that the intention to use will increase. Therefore we propose the following hypothesis:

## **CALCULATIVE COMMITMENT**

Commitment is recognized as an essential ingredient for successful long-term relationships (Dwyer, Schurr, and Oh 1987; Morgan and Hunt 1994). Commitment has been defined as "an enduring desire to maintain a valued

relationship" (Moorman, Zaltman, and Deshpande 1992, p. 316). Gundlach, Achrol, and Mentzer (1995) argue that commitment has three components: an instrumental component of some form of investment, an attitudinal component that may be described as affective commitment or psychological attachment, and a temporal dimension indicating that the relationship exists over time.

Lin and Wu (2011) consider customer commitment as a consumer's persistent wish and attempt to retain a relationship with a service provider. In terms of their relationship with service quality, positive overall service quality impacts on commitment that customers have towards a particular brand and the associated service provider (Jahanzeb et al., 2011).

## **CUSTOMER LOYALTY**

Moreover, loyal customers are less likely to change provider because of price, while they also tend to recommend the business to others (Reichheld and Sasser, 1990; Reichheld and Teal, 1996). Such observations highlight the critical importance of customer loyalty for companies and especially for those operating in service industries.

## **ATTITUDINAL AND BEHAVIOURAL LOYALTY**

Attitudinal loyalty is evaluated by customers' inner thoughts of attachment, positive word-of-mouth and recommendations (Zeithaml et al., 1996). Attitudinal loyalty can be determined by exploring if customers consider themselves to be loyal patrons of this ISP, as well as if they think this ISP is the best choice for them (Kim and Niehm, 2009). In addition to attitudinal loyalty, behavioral loyalty is measured by the number of customers which remain with their service provider (Zeithaml et al., 1996).

Customer loyalty is often examined from a behavioral point of view by measuring items such as number of repeat purchases, "share of wallet" and purchase frequency. A frequent assumption is that loyalty translates into an unspecified number of repeat purchases from the same supplier over a specified period (Egan, 2004). In this line, Oliver (1999) defined loyalty as "a deeply held commitment to re buy or re patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior". Dick and Basu (1994) suggested that loyalty has both attitudinal and behavioral elements and argued that it is determined by the strength of the relationship between relative attitude and repeat patronage. Examining loyalty under the attitudinal lens, it can be derived from psychological involvement, favoritism and a sense of goodwill towards a particular product or service (Oh, 1995 cited by Kim et al., 2004).

Overall, despite the fact that there are plenty of different approaches aiming at the definition and conceptualization of loyalty, there is a general convergence towards the view that both behavioral and attitudinal features must be included. The behavioral view is usually based on the monitoring of the frequency of repeated purchases and brand switches, while the attitudinal approach assumes that loyalty is derived from psychological involvement and preference and focuses on issues such as brand recommendations, resistance to superior products, repurchase intention and willingness to pay a price premium (Cronin and Taylor, 1992). Because of the importance of customer loyalty discussed above the following objectives are framed.

## **CONCEPT FRAMEWORK AND HYPOTHESIS**

Users' perceived usefulness positively influenced user intention to use smartphones, Park and Chen (2007). User acceptance of long-term evolution (LTE) services and showed that the perceived usefulness of LTE services had positive effects on user intention to use the service, Park and Kim (2013).

Perceived usefulness had an effect on the continued intention to use a short message service that provided utilitarian benefits to users in search of effective communication alternatives, Kim et al. (2008).

The study on understanding Chinese users' behaviour and identifies factors that impact intentions toward the usage of the social network services via handheld devices reveals that mobility in concert with perceived ease of use, use context, and critical mass in concert with social influence impact users' behavioral intention and usage significantly. S. Nikou, H. Bouwman(2014).

Investigating key determinants of users' continuance intention regarding social Apps, the results indicates that the continuance usage of social Apps is driven by users' satisfaction, tight connection with others, and hedonic motivation to use the Apps. In addition, full mediation effects of satisfaction and habit were found between perceived usefulness and intention to continue use. **C.-H. Hsiao et al(2016)**

Perceived usefulness has been identified as having a significant positive correlation with both attitude and usage intention, for example, perceived usefulness positively affects the adoption of mobile internet and mobile services (Shaikh and Karjaluoto, 2015).

Perceived usefulness have a direct significant influence on behavioral intention to use a particular online system (Hanafizadeh et al., 2014; Mohammadi, 2015, 2015a; Shaikh and Karjaluoto, 2015).

The context of mobile service, perceived usefulness can be described as how well mobile services can be incorporated in day-to-day activities. Using mobile banking services gives the opportunity to consumers to perform banking operations in any location and at any time. Once a consumer feels that such services are directly beneficial to his or her personal and business life, then he or she will be positively influenced to keep using such services (Lin, 2011).

Investigating how cognitive and affective factors are interrelated in continuance intention, the results indicates that continuance intention is affected conjointly by cognitive factors, such as perceived usefulness, and affective factors, such as familiarity and intimacy. However, the effects of affective factors such as intimacy were larger than those of cognitive factors such as perceived usefulness. In addition, the results indicate that intimacy, a purer affective concept than familiarity, affects users' continuance intention more than familiarity.

**Y. Lee, O. Kwon** (2011). The above discussed literatures are based on various services like social networks, mobile banking and mobile internet but this study concentrate perceived usefulness in mobile network service providers so the following hypothesis is proposed:

H1: Perceived Usefulness has a direct and positive effect on calculative commitment.

H2: Perceived Usefulness has a direct and positive effect on attitudinal loyalty.

## **CALCULATIVE COMMITMENT**

Moreover, numerous studies have recently demonstrated that there is a positive correlation between customer commitment and customer repurchase.

Affective and calculative commitment positively affects the customers' intention to continue a relationship with their service provider in a Central and Eastern European in the service sector, Cater and Zabkar (2009). A positive connection between affective commitment and customer loyalty in financial services industry, Verhoef (2003).

Calculative commitment and affective commitment positively influence behavioral intentions (Cater and Zabkar, 2009; Fullerton, 2005). More time and effort customers have invested in the relationship with their service provider, the less inclined the customers are to break up that relationship (Bügel et al., 2010). Customers with high levels of calculative commitment will be unwilling to switch to another service provider because of the great switching costs (Bügel et al., 2010; Cater and Zabkar, 2009).

Studies on customer behavior have undergone tremendous developments in the past few decades. For instance, during the 1970s and 1980s, scholars have emphasized the role of customer satisfaction in determining consumer behavior (Oliver, 1999). However, more recently, researchers have expanded this conceptualization beyond satisfaction into the realms of customer commitment (Garbarino and Johnson, 1999) and customer loyalty (Berry, 1995). This new interest is underscored by the long held view that mere acquisition of new customers and getting them satisfied cannot guarantee sustained business and that a loyal customer base is the only assurance firms have against possible losses (Berry, 1995). Based on the above discussed literature the following hypothesis is framed.

H4: Calculative commitment has a direct and positive relationship on loyalty intention.

H3: Calculative commitment has a positive and significant relationship on Loyalty.

H4: Calculative commitment has a positive and significant relationship on Attitudinal Loyalty.

## **LOYALTY INTENTION**

This study adopts the composite loyalty approach which suggests a simultaneous assessment of attitudinal and behavioural loyalty (Dick and Basu, 1994).

Examined the effect of switching cost, service quality and customer satisfaction on customer loyalty in the mobile telecommunication services, shows that the switching cost, service quality and customer satisfaction have positive association with customer loyalty. However, the customer satisfaction was found to be the best predictor of customer loyalty. S K Chadha and Deepa Kapoor (2009).

Customer loyalty refers to a favorable attitude towards a particular brand in addition to purchasing it repeatedly (Day, 1969); a relationship between relative attitude towards an entity and repeat patronage behavior (Dick and Basu, 1994); a situation when repeat purchase behavior is accompanied by a psychological bond; and repeat purchase intentions and behaviors. Customer loyalty sometimes has been operationalized as a behavioral measure and at other times as an attitude. The concept of customer loyalty is understood as a combination of customers' favorable attitude and the behavior or repurchases, Kim et al. (2004).

Customer loyalty is affected by customer satisfaction and the switching barrier (Dick and Basu, 1994; Gerpott et al., 2001; and Lee and Cunningham, 2001). Customers experiencing high level satisfaction are likely to remain with their existing providers and maintain their subscription.

Loyalty has both attitudinal and behavioral elements and argued that it is determined by the strength of the relationship between relative attitude and repeat patronage. Dick and Basu (1994).

## **BEHAVIOR AND ATTITUDINAL LOYALTY**

Customer loyalty sometimes has been operationalized as a behavioral measure and at other times as an attitude. Behavioral measures include probability of purchase (Farley, 1964), purchase frequency (Brody and Cunningham, 1968), repeat purchase behavior (Brown, 1952), purchase sequence and multiple aspects of purchase behavior.

Attitudinal approaches are focused mainly on brand recommendations (Boulding et al., 1993), resistance to superior products (Narayandas, 1996), willingness to pay a price premium (Zeithaml et al., 1996) and repurchase intention (Cronin and Taylor, 1992; and Anderson and Sullivan, 1993).

Examining loyalty under the attitudinal lens, it can be derived from psychological involvement, favoritism and a sense of goodwill towards a particular product or service (Oh, 1995 cited by Kim et al., 2004). The behavioral view is usually based on the monitoring of the frequency of repeated purchases and brand switches,

while the attitudinal approach assumes that loyalty is derived from psychological involvement and preference and focuses on issues such as brand recommendations, resistance to superior products, repurchase intention and willingness to pay a price premium (Cronin and Taylor, 1992).

Attitudinal loyalty is evaluated by customers' inner thoughts of attachment, positive word-of-mouth and recommendations (Zeithaml et al., 1996). Attitudinal loyalty can be determined by exploring if customers consider themselves to be loyal patrons of this ISP, as well as if they think this ISP is the best choice for them (Kim and Niehm, 2009). In addition to attitudinal loyalty, behavioural loyalty is measured by the number of customers which remain with their service provider (Zeithaml et al., 1996).

Attitudinal loyalty as its name suggests deals with the attitudes of customers, and more specifically with cognitive, affective, and conative aspects in a way that consumers reach ultimate loyalty despite situational influences or other things encouraging consumers to switch brands; however, behavioural loyalty centres on actual purchase behavior and is repeating the purchase behavior.

Attitudinal loyalty arises from emotional ties with a brand and backs up behavioral loyalty. Thus, one measurement for behavioral loyalty is buying frequency (Leenheer et al., 2007; Nam et al., 2011; Romaniuk and Nenycz-Thiel, 2011; Puligadda et al., 2012).

Customer loyalty manifests itself in a variety of behaviors, the common ones being recommending customers (attitudinal loyalty) to the service provider and repeatedly patronizing (behavioral loyalty) the service provider (Dwyer et al., 1987; Fornell, 1992).

Several scholars have treated these two behaviors as customer loyalty indicators (Sirdeshmukh et al., 2002; Lam et al., 2004; Zeithaml et al., 1996). In the same vein, this study conceptualizes customer loyalty using these two manifestations. Customer loyalty is important for both the firm and the customer. As regards the firm, loyal customers are willing to make repeat purchases in the business that delivers value beyond their expectation. Loyal customers often will, over time bring substantial revenues and demand less attention from the firms they patronize (Yang and Peterson, 2004). Indeed, it is common to find loyal customers sympathizing with poor service, displaying less sensitivity to price and disseminating positive word of mouth about the service to others (Yang and Peterson, 2004). On the other hand, loyalty is important to customers because loyal customers incur less time and costs in searching for information and evaluating purchase decisions, and also incur less or no switching costs. Consequently, customer loyalty is beneficial to both the customer and the service provider and so is a major source of sustained competitive edge (Keaveney, 1995). Based on the above discussed literature the following hypothesis is framed.

H5: Loyalty Intention has a direct and positive relationship on Behavior loyalty.

H6: Loyalty Intention has a direct and positive relationship on attitudinal loyalty.

## **RESEARCH METHODOLOGY**

### **MEASUREMENT OF VARIABLES**

For the validation of research hypothesis, four measures were derived from the review of literature are perceived usefulness, loyalty intention, behavior and attitudinal loyalty. Likert's five point scale was employed to measure the variables. To measure the perceived usefulness the questions were adapted from the research conducted by (S. Nikou Bouwman, 2014) empirically validates the importance of the multidimensionality of perceived usefulness and adapts its research to social network services. This research proposes that perceived usefulness is composed of three primary dimensions: mobility, critical mass, perceived ease of use. The dimensions of commitment that is calculative, is operationalised using the scales developed by Bansal et al. (2004) and Gustafsson et al. (2005). In order to measure loyalty the measurement items of behavioral and

attitudinal loyalty are derived from Chaudhuri and Holbrook (2001), Evanschitzky et al. (2006), Gremler and Brown (1996), and Zeithmal et al. (1996). All the items are measured on a seven-point Likert scale ranging from “very strongly agree” to “very strongly disagree”.

**Table 1: Measurement of variables**

	Variables	Number of items	Cronbach Alpha
1	Perceived usefulness	15	.853
2	Calculative Commitment	7	.871
3.	Customer Loyalty	10	.879
4	Behavior Loyalty	6	.820
5	Attitude Loyalty	6	.899

## DATA COLLECTION AND SAMPLE CHARACTERISTICS

Data was obtained from the students using mobile phones of cellular mobile services in Coimbatore City, Tamil Nadu State, with the help of questionnaire. Purposive sampling method was used to collect the data from the customers. Pre-paid and postpaid subscribers of GSM (Global system for Mobile) services were included in the present study. A total of 125 questionnaires were completed in all aspects.

**Table 2: Demographic profile of the respondents.**

Sl. No	Respondent's Characteristics	Percentage of Respondents (%)
<b>I</b>	<b>Gender</b>	
	Female	65.6
	Male	34.4
<b>II</b>	<b>Age group</b>	
	18 – 22	47.2
	23 – 27	20.0
	28 – 32	14.4
	33 – 37	14.4
	38 and above	4.0
<b>III</b>	<b>Education</b>	
	Under graduate	37.6
	Post Graduate	12.0
	Research scholar	50.4

## DATA ANALYSIS AND FINDINGS

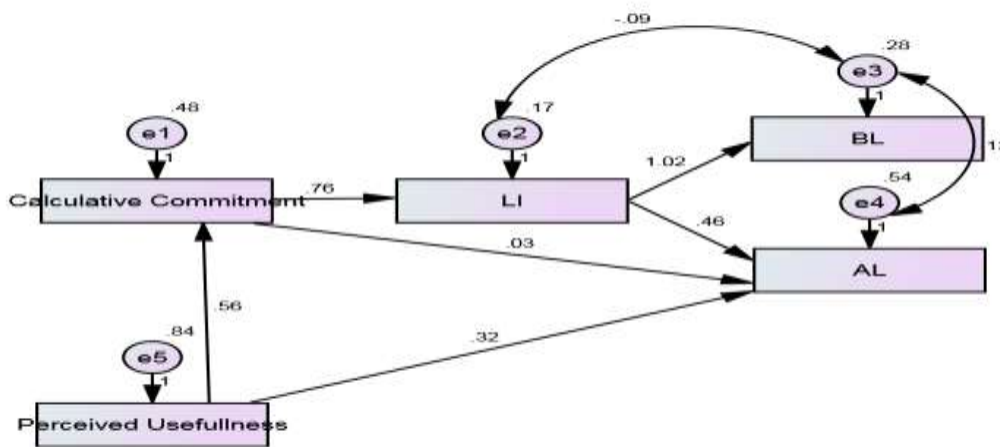
Data collected has been analyzed using different statistical tools. SPSS 11.5 was used for assessment of the reliability of dimensions and testing the hypothesis. For the purpose of analysis, path analysis is used to find the significance or relationship between variables.

**Reliability Analysis:** The reliability of items was assessed by computing the coefficient of Cronbach alpha. Cronbach alpha measures the internal consistency of the items. For the purpose of this research, alpha coefficient has been computed separately to assess the reliability of the scales adopted in the study. Results of reliability analysis are shown in Table 1. If coefficient alpha is above 0.60, it is considered to be reliable. All

alpha coefficients range from 0.81 to 0.89, thereby, indicating good consistency among the items within each dimension and scale. (Table 1)

We used three different fit statistics like the root mean square error of approximation (RMSEA), the goodness-of-fit index (GFI), the comparative fit index. From the above tables (3, 4, 5, 6, &7) it is observed that the fit indices fitted perfectly the model with approximately all the fit indices being above 0.90. Construct validity has been achieved through GFI; CFI being greater than 0.90 and the RMSEA is less than 0.08.

**FIGURE 1 : PATH DIAGRAM**



**Result (Default model)**

Minimum was achieved  
 Chi-square = 2.533  
 Degrees of freedom = 2  
 Probability level = .282

**Model Fit Summary**

**Table 3: CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	13	2.533	2	.282	1.267

**Table 4: RMR, GFI**

Model	RMR	GFI	AGFI	PGFI
Default model	.013	0.992	.940	.132

**Table 5: Baseline Comparisons**



Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.994	.970	.999	.994	.999

**Table 6: Parsimony-Adjusted Measures**

Model	PRATIO	PNFI	PCFI
Default model	.200	.199	.200

**Table 7: RMSEA**

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.046	.000	.191	.386

**Table 8: Regression Weights: (Group number 1 - Default model)**

	Estimate	S.E.	C.R.	P	Label
CC <--- PU	.561	.068	8.237	***	
LI <--- CC	.758	.043	17.464	***	
BL <--- LI	1.016	.073	13.942	***	
AL <--- LI	.457	.159	2.882	.004	
AL <--- CC	.031	.152	.202	.840	
AL <--- PU	.316	.083	3.785	***	

## CONCEPT MODEL DISCUSSIONS AND FINDINGS

The results (table 7) confirm that most of the hypothesized (H1, H2, H3 & H5) have positive and direct relationships except the paths from Loyalty intension to attitudinal loyalty(H6) and the paths from Calculative commitment to attitudinal loyalty(H4). The positive relationships are those between calculative commitment and loyalty intention (.758\*\*\*) supporting H3, and between perceived usefulness and calculative commitment (.561\*\*\*) supporting H1, the strongest relationship between loyalty intention and behavioral loyalty (1.016\*\*\*) supporting H5. Additionally perceived usefulness and attitudinal loyalty (.316\*\*\*) H2 have a significant influence also confirmed.

## LIMITATIONS

The study does not consider other factors influencing loyalty such as network quality, consumer characteristics, length of relationship, type of connection used by customer (prepaid vs postpaid) and usage patterns. The present study relies on cross-sectional data to study customer loyalty. Longitudinal research is required to examine customer's long-term loyalty towards a company. This research does not examine the interactions effects between customer satisfaction, trust and commitment. Future researchers can test these interaction effects and study its impact on development of behavioral and attitudinal loyalty.

## FUTURE RESEARCH DIRECTIONS

Further research may incorporate the effect of variables like service quality, customer value and price perceptions on customer loyalty and examine more influences. This study develops and validates the measures of customer loyalty and its antecedents for cell phone users. Future studies could consider to what extent the

measures proposed in this study are valid in different service industries and what modifications need to be made in the scale items across different samples and contexts.

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