

# Understanding the Role of Value-Oriented Smartphone Application Features in Enhancing User Engagement, Satisfaction, and Brand Commitment

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## Abstract

*Smartphone applications have now been a critical digital platform to the provision of value and long term relationships with users. This paper reports on the effects of application benefits which are based on value, i.e. learning benefits, social benefits, personal benefits and hedonic benefits on customer satisfaction and customer loyalty among the university students. The research design adopted was quantitative research and data were gathered using a structured questionnaire on student users of the various universities. The reliability and validity of the measurement scales were established by use of Cronbachs alpha, KMO test, and Bartlett's test and then, correlation and regression tests were conducted to verify the proposed relationships. The findings indicate that learning benefits, personal benefits, and hedonic benefits have a considerable impact on customer satisfaction, whereas the social benefits do not. Moreover, learning benefits, personal benefits, and hedonic benefits positively and significantly influence customer loyalty, and hedonic benefits turned out as the most influential factor. The results emphasize the necessity of implementing both practical usefulness and emotional and personal value in the design of smartphone applications to improve satisfaction in the users, as well as provide them with the possibility of long-term loyalty.*

**Keywords:** *Smartphone applications, user satisfaction, brand commitment, experiential value, mobile engagement*

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## 1. Introduction

The smartphone technology has taken its niche in the day to day lives of people and it has transformed the way people interact, educate, shop and consume the digital services. Along with the blistering evolution of the mobile operating systems and the application ecosystems, smartphone applications have become one of the main interfaces between the users and the service providers [1]. The applications allow organizations to have a constant contact with users as well as provide personalized and real-time services. User retention in digital markets where the competition is fierce has become a significant issue to application developers. It is no longer necessary to perform basic functions to make them last long. The end users are becoming more demanding in their desire to be given a purposeful value by their applications in terms of entertaining experiences, pertinent information and a sense of interaction [2]. The successful integration of these dimensions of value in the applications is expected to increase the user satisfaction and make people more psychologically attached to the brand.

According to the previous studies, perceived value is a vital factor contributing to the attitude and behavior of users in the digital world [3]. Whenever users feel that an application satisfies their utilitarian and emotional needs, then it is more likely that the users will be satisfied and committed. Satisfaction is also an important mediator that converts the perceived value into positive behavioral responses which include continued use and brand loyalty [4]. Despite the fact that a number of studies have been conducted to investigate the adoption and use intentions of mobile applications, there is scanty research focusing on the possible effects of several value-related features interacting to determine the effect of mobile application on user satisfaction and brand commitment. Thus the proposed study seeks to fill this gap through the analysis of the role of informational value, experiential enjoyment, personalization as well as interactive engagement on user satisfaction and brand commitment in smartphone applications contexts.

## **2. Literature Review**

Smartphone applications deliver various forms of value that shape user perceptions and experiences. One of the most important dimensions is informational value, which refers to the extent to which an application provides accurate, useful, and timely information [5]. Applications that offer reliable information help users make better decisions and increase their perceived usefulness, which positively influences satisfaction and trust [6]. Experiential enjoyment, also referred to as hedonic value, represents the pleasure and entertainment derived from using an application. Enjoyable interfaces, visually appealing layouts, and engaging features enhance users' emotional experiences and reduce perceived effort [7]. Studies indicate that experiential enjoyment is a strong predictor of satisfaction and continued usage intention in mobile environments [8].

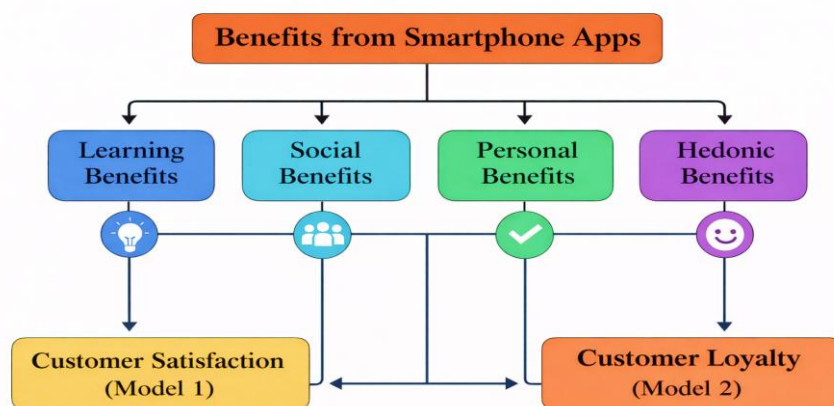
Personalization is another key value dimension in smartphone applications. Personalized content, recommendations, and adaptive interfaces enhance perceived relevance and convenience for users [9]. When users feel that an application understands their preferences and needs, their emotional attachment and satisfaction levels increase significantly [10]. Personalization also contributes to a sense of control and self-efficacy, strengthening long-term engagement. Interactive engagement refers to the degree to which users can actively participate and communicate through applications. Features such as feedback systems, social sharing, and real-time interaction promote user involvement and co-creation of value [11]. Interactive applications encourage stronger relationships between users and brands, leading to increased trust and commitment [12]. User satisfaction is widely recognized as a central outcome of perceived value in digital services. Satisfaction reflects users' overall evaluation of their experiences relative to expectations [13]. In mobile application contexts, satisfied users are more likely to continue using the application and recommend it to others [14]. Satisfaction also serves as a foundation for developing brand commitment. Brand commitment represents a user's psychological attachment and willingness to maintain a long-term relationship with a brand. Prior studies suggest that satisfaction and perceived value are key antecedents of brand commitment in online and mobile platforms [15]. Applications that consistently deliver high value can strengthen emotional bonds and reduce users' likelihood of switching to competing alternatives [16].

### 3. Research Methodology

The main purpose of the study is to review the correlation between the benefits of smartphone applications and their effect on customer satisfaction and customer loyalty. A quantitative research approach was used to attain this objective. The structured self-administered questionnaire was used to gather primary data since it is rated as being suitable in the measurement of perceptions and attitudes of users in behavioural and marketing research. The study population comprised of the students of universities that actively use smartphone applications. The students were recruited to take part in research activities and provide information about five major universities of Punjab, Lahore, i.e. University of Lahore, Punjab University, University of Central Punjab, Lahore University of Management Sciences (LUMS), and the University of Management and Technology (UMT).

The targeted respondents were university students because they are among the people who use smartphone applications extensively and familiar with the digital technologies and therefore they can easily judge the benefits associated with the applications. The validity of the questionnaire items was established by adopting questionnaire items that had been validated before in the past. Learning benefits, social benefits, personal benefits, hedonic benefits, and customer satisfaction were the constructs that were modified based on a scale created by Alnawas and Aburub (2016) [7]. The measurement of customer loyalty was done with items borrowed by Zhang et al. (2016) [17].

There were slight changes in wording of the items to fit the context of smartphone applications and do not change their original meaning. The questionnaire was separated into various parts. The initial section included the demographic data of respondents such as gender, age, educational qualification, institutional affiliation, and experience. The other parts of the study determined the variables of the study through several items rated under Likert scale. The reliability and validity of the research tool have been increased through a consistent use of established measurement scales which made the research tool consistent with the earlier empirical studies. Figure 1 presents the Analytical framework of smartphone application benefits and customer behavioral outcomes



**Figure 1. Analytical framework of smartphone application benefits and customer behavioral outcomes**

#### 4. Results and Findings

The outcomes suggest that experiential enjoyment and personalization are both strong positive predictors of user satisfaction. There is also informational value which has a positive effect, but the impact is relatively minor. Regression analysis also indicates that interactive functionality and informational value are also important in brand commitment. The relationship between brand commitment and application features is partly mediated by user satisfaction and thus its centrality in maintaining the long-term user relationships.

##### 4.1 Respondent Profile

The demographic profile of the respondents shows that the study mainly targeted the university students of various institutions. The majority of the respondents were based in Lahore University and Punjab University, and they made up over half of the sample. The participants were mostly males with the majority of the qualification being MCom. The highest age was between 2530 years, 30 to 35 years. In general, the sample is of young and educated users who have different levels of experience, which makes it appropriate in studying perceptions regarding benefits of mobile application. Extensive demographic features are described in Table 1.

**Table 1. Demographic Profile of Respondents**

Demographic Variables	Categories	Frequency	Percentage (%)
Organisation	Punjab University (PU)	22	14.7
	Lahore University (LU)	53	35.3
	University of Central Punjab (UCP)	32	21.3
	Lahore University of Management Sciences (LUMS)	18	12.0
	University of Management and Technology (UMT)	25	16.7
Gender	Male	110	73.0
	Female	40	27.0
Educational Level	BCom	14	9.3
	MCom	64	42.7
	MBA	23	22.0
	MPhil	33	15.3
	Others	16	10.7
Age	Below 25	39	26.0
	25–30	51	34.0
	30–35	44	29.3
	Above 35	16	10.7
Experience (Years)	Below 4	55	37.7
	4–8	37	24.7
	8–12	15	10.0
	Above 12	43	27.6

#### 4.2 Reliability and Validity Analysis

Cronbach alpha was used to measure the internal consistency of the measurement scales to determine their reliability. All constructs proved to have acceptable reliability values as the Cronbachs alpha coefficients were above the recommended value 0.70. The consistency of the instrument was also strong as measured by the overall reliability. Moreover, KMO and Bartlett tests were also used to ensure the adequacy of the sampling and construct validity were checked; the data were suitable to undergo a factor analysis. These findings confirm that the measuring device is valid and reliable to be analysed further. Table 2 presents the summary of the reliability and validity statistics.

**Table 2. Reliability and Validity Analysis**

Construct	No. of Items	Cronbach's Alpha
Learning Benefits	4	0.784
Social Benefits	5	0.707
Personal Benefits	5	0.724
Hedonic Benefits	7	0.796
Customer Satisfaction	4	0.756
Customer Loyalty	3	0.754
Overall Reliability	27	0.837
Validity Measure	Value	
KMO Measure of Sampling Adequacy	0.770	
Bartlett's Test (Chi-square)	2.926E3	
Degrees of Freedom	465	
Significance (p-value)	0.000	

#### 4.3 Relationship and Regression Analysis

The result of the correlation analysis indicated that customer satisfaction and customer loyalty were positively and significantly related to learning, personal, and hedonic benefits. The relationship between Hedonic benefits and customer loyalty was the highest implying that enjoyment and pleasure are relevant factors in influencing long-term commitment. The regression findings also indicated that learning, personal and hedonic benefits had a significant influence on customer satisfaction compared to social benefits. Likewise, the benefits of learning, personal and hedonic benefits played a significant role in customer loyalty with the latter coming out as the strongest predictor. There were no observed problems of multicollinearity since values of tolerance and VIF were within acceptable ranges. Table 3 summarises the combined results of the correlation and regression.

**Table 3.** Correlation and Regression Summary

Variables	LB	SB	PB	HB	CS	CL
Learning Benefits (LB)	1					
Social Benefits (SB)	0.772	1				
Personal Benefits (PB)	0.249	0.370	1			
Hedonic Benefits (HB)	0.335	0.482	0.342	1		
Customer Satisfaction (CS)	0.344	0.320	0.321	0.366	1	
Customer Loyalty (CL)	0.277	0.317	0.299	0.606	0.353	1

#### 4.4 Model 1 Regression Analysis: Customer Satisfaction

The regression analysis presented in Table 4 reveals the impact of the benefits of smartphone application on customer satisfaction, controlling for other variables. The beta coefficients measure the change in customer satisfaction for a unit change in each of the independent variables. The results indicate that learning benefits, personal benefits, and hedonic benefits have a positive and significant effect on customer satisfaction. However, social benefits fail to establish a significant effect. There are no multicollinearity problems as the tolerance levels are above 0.10, and the VIF values are below the recommended level of 10.

**Table 4.** Regression Results for Customer Satisfaction (Model 1)

Variables	Beta (B)	Std. Error	Sig.	Tolerance	VIF
Constant	0.764	0.285	0.007	—	—
Learning Benefits	0.312	0.098	0.002	0.421	2.37
Social Benefits	-0.091	0.131	0.462	0.356	2.81
Personal Benefits	0.238	0.064	0.001	0.842	1.19
Hedonic Benefits	0.341	0.072	0.000	0.741	1.35

#### 4.5 Model 2 Regression Analysis: Customer Loyalty

The regression analysis for customer loyalty is presented in Table 5. The findings show that learning benefits, personal benefits, and hedonic benefits have a significant and positive impact on customer loyalty. Hedonic benefits have the strongest impact among all the predictors, emphasizing the role of enjoyment and pleasure in building long-term loyalty. Social benefits, as in the previous model, have a negative but statistically insignificant relationship. The diagnostic statistics confirm the absence of multicollinearity problems.

**Table 5.** Regression Results for Customer Loyalty (Model 2)

Variables	Beta (B)	Std. Error	Sig.	Tolerance	VIF
Constant	0.582	0.268	0.031	—	—
Learning Benefits	0.204	0.091	0.028	0.418	2.39
Social Benefits	-0.143	0.125	0.254	0.344	2.90
Personal Benefits	0.147	0.058	0.012	0.836	1.20
Hedonic Benefits	0.652	0.067	0.000	0.728	1.37

Overall, the results of the regression analysis confirm that the functional, personal, and emotional benefits obtained from smartphone applications have a significant positive impact on customer satisfaction and customer loyalty, whereas social benefits do not have a significant impact. Hedonic benefits are found to be the most significant predictors of customer loyalty.

## **5. Discussion**

The results derived in the course of the current study may give valuable information on the effects of the various advantages of smartphone applications that may be value-based in terms of customer satisfaction and customer loyalty. The findings reveal that learning benefits, personal benefits and hedonic benefits are highly influential in determining the level of satisfaction of the users with mobile applications whereas social benefits do not show a significant influence. This indicates that users will mostly reward applications that make them gain knowledge, attain personal interests, and provide entertaining experiences than those that are mainly aimed at social interaction. It was discovered that learning gains had significant and positive influence on customer satisfaction and customer loyalty. This means that applications that contain useful information, assist in making decisions and managing daily operations will give the user satisfaction and loyalty. These results can be compared to the previous studies which focus on the significance of utilitarian value in digital and mobile services, where usefulness in functionality reinforces favorable user ratings and long-term interaction.

Self-interest also became one of the key forecasts of customer satisfaction and loyalty. The apps which indicate values of users, increase self-image and bring a feeling of personal success lead to a greater emotional attachment. This finding underscores the importance of self-expressive value in mobile applications in that users can choose applications that appeal to their identity and personal beliefs as a result of which they are likely to develop satisfaction and reuse. The highest customer loyalty and considerable effect on customer satisfaction were seen with the hedonic benefits. This observation highlights the importance of having fun, being pleasure-seeking and emotionally involved in the consumption of mobile applications. When users find themselves having fun, being happy, and relaxed whenever they use an application, they will tend to develop strong commitment to the brand. The prevalence of hedonic payoffs implies that emotional experiences might be one of the determinants of loyalty in the mobile app worlds that are highly competitive.

Remarkably, social benefits were not significantly related to customer satisfaction and loyalty in negative manner. This could be a sign that social interaction characteristics do not play a major role in motivating the students in the situation of the given study or that extra social interaction can cause fatigue or distracting. It further implies that the social features in themselves cannot be used to promote the level of satisfaction without being combined with meaningful functional and experience value. In general, the findings underscore the fact that customer satisfaction is a valuable outcome of value creation and it is positively related to customer loyalty. Nonetheless, the direct impact of the hedonic benefits on loyalty is stronger which implies that emotional attachment can occasionally circumvent satisfaction and

directly affect pledging. The results help to observe the user behaviour in relation to mobile applications, and the need to design apps that offer enough functionality, as well as emotional and personal value in order to gain sustainable user loyalty.

## Conclusion

The effect of value-oriented benefits of smartphone applications on customer satisfaction and customer loyalty among university students were studied and the learning benefits, personal benefits, and hedonic benefits showed significant impacts on customer satisfaction and customer loyalty and the hedonic benefits rose as the strongest factor when it comes to long-term commitment. The results indicate that functionality usefulness, self-expressive value and enjoyable experiences are considered by the users as more significant in terms of rating the mobile applications than the social features, and holistic value creation in mobile app design should be considered. Application developers can support better user satisfaction and long-lasting loyalty by being able to combine both emotional and utilitarian aspects. The study has some shortcomings though; it is cross-sectional, data collection happens through self-reported measures and sample size used is limited to student users in selected universities which could affect the generalizability of the study. Future studies ought to use longitudinal designs and have more heterogeneous groups of users and investigate other mediating or moderating factors like trust, engagement, or usage intensity to give more insightful information on mobile application adoption and formation of loyalty.

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